AUDIX®

Administration

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Acknowledgment
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About This Document

This document describes how to administer an AT&T AUDIX Voice Messaging System. It covers administration strategy from preliminary and cut-to-service tasks through ongoing administration. It may also be used as a reference for background and conceptual information, special considerations for administering various features, and ramifications of certain administrative functions.

This document is designed to allow the AUDIX system administrator to quickly find information about performing specific administrative tasks. Its focus is on how, when, and why to perform these tasks. Use this document with its companion forms reference manual, which contains detailed information about each administration form that is used to perform AUDIX system administration. Use the forms reference manual that covers your specific software release, from AUDIX Release 1 Version 5 (R1V5) through R1V8 (the latest version). Refer to the *Related Resources* section for specific document titles.

INTENDED AUDIENCES

This document is intended for the person(s) who administer the AUDIX voice mail system(s).

PREREQUISITE SKILLS OR KNOWLEDGE

This document does not assume prerequisite skills or knowledge. However, training for AUDIX administration is available and is strongly recommended.

HOW THIS DOCUMENT IS ORGANIZED

Information in this document is arranged as follows:

- Chapter 1, *Introduction*, provides an overview of the AUDIX system administration process and outlines the responsibilities of the system administrator.

- Chapter 2, *Cut-to-Service Administration*, describes administration tasks that must be performed after the AUDIX system is installed but before subscribers start using the system.

- Chapter 3, *Feature Administration*, describes procedures for activating and using various AUDIX features such as bulletin board, broadcast messages, outcalling, message sending restrictions, and priority messaging.

- Chapter 4, *Ongoing System Security*, describes procedures for minimizing your company's risk of incurring toll fraud.

- Chapter 5, *Ongoing Preventive Maintenance*, describes the responsibilities of the system administrator and lists preventive maintenance procedures that should be performed on a daily, weekly, or monthly basis.

- Chapter 6, *Ongoing Subscriber Administration*, describes how to add, change, and remove subscriber profiles.

- Chapter 7, *Ongoing Filesystem Administration*, describes how to add, resize, move, and back up filesystems.

- Chapter 8, *Alarms, Logs, and Audits*, describes how alarm and error logs are generated by AUDIX background tests. It cover use and interpretation of the activity log and describes the various audits that are performed automatically or manually to update filesystems and correct problems in the system.

- Chapter 9, *Traffic Reports*, describes AUDIX traffic reports and how to interpret them.

- Chapter 10, *R1V8 Transition Guidelines*, describes the prompt and dial-plan differences between the R1V8 software release and previous versions. This chapter summarizes the changes administrators should be aware of and information they should pass on to the subscriber population if they upgrade an AUDIX system to R1V8.

- Chapter 11, *Automated Attendant*, describes how to set up and maintain AUDIX automated attendants for various applications.

- Chapter 12, *AUDIX Capacity Planning*, describes how to plan for future growth in your AUDIX system and measure your current configuration's performance efficiency.

- Appendix A, *Communicating with Subscribers*, contains sample change-request, user information, and user feedback survey forms.

A glossary and index also are included in this document.

HOW TO USE THIS DOCUMENT

This document describes administrative strategies and procedures for implementing and maintaining an AUDIX system. Generally:

- Read and do the appropriate procedures in Chapters 1 through 5 when you first bring your AUDIX system into service.

- If you are upgrading your AUDIX system from an earlier release of software to R1V8, also complete the procedures in Chapter 10, *R1V8 Transition Guidelines*.

- Do the procedures in Chapters 5 through 12 on a regular or as-needed basis.

The document refers to other documents in the AUDIX library (see the *Related Resources* section for a complete list). This document is intended to be used in conjunction with the appropriate forms reference manual for your system; the forms reference documents contain specific instructions for using each form.

CHANGES FROM LAST ISSUE

Changes from Issue 3 of this document are summarized below.

- Administrative tasks throughout the book have been streamlined and the AUDIX prompts updated for the R1V8 release.

- The broadcast message and login announcement procedures have been updated for the R1V8 release in Chapter 3, *Feature Administration*.

- Chapter 4, *Ongoing System Security*, includes a new security checklist.

- The announcement customization procedures have been removed from Chapter 7, *Ongoing Filesystem Administration*, and placed in the appropriate announcement customization guide (see the *Related Resources* section).

- A new Chapter 10, *R1V8 Transition Guidelines*, describes the prompt and dial-plan (user keystroke) differences between the R1V8 software release and previous versions. This section should be read by any administrators whose systems have been (or will be) upgraded to R1V8 software.

- Information related to the AMIS Analog Networking and Message Delivery features has been removed from this document. Refer to *AMIS Analog Networking* (585-300-512) for complete information on administering these features.

CONVENTIONS USED IN THIS DOCUMENT

The following typographic conventions are used in this document:

- Information that appears on your terminal screen (including displays, field names, prompts, and error messages) is shown in constant-width type. Information that you are to type just as it appears in the document is shown in constant-width bold type. For example:

    At the `when?` prompt, type **`now`**

- Terminal keys that you are to press are shown in boxes. For example, an instruction to press the return, carriage return, or equivalent key might appear in this document as:

    Press (RETURN).

- Two or three keys that you are to press at the same time (that is, you are to hold down the first key while pressing the second key and, if appropriate, the third key as well) are enclosed together, separated by hyphens, in a curved-edge box. For example, an instruction to press and hold the (ALT) key while typing the letter *d* appears in this document as:

    Press (ALT-d).

- Variables for which you or the system substitute a word specific to your own application are shown in italic type. For example, an error message that appears on the screen with the name of your own specific filename might appear generically in this document as:

    `Your file <`*filename*`> is formatted incorrectly.`

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RELATED RESOURCES

This document should be used in conjunction with the appropriate forms reference manual for your system. Because this document is intended to support customers whose AUDIX system may be running R1V5, R1V6, R1V7, or R1V8 software, please use the document intended to support the version of software your AUDIX system is running.

Other documents that support the latest release of AUDIX software are also listed. Please refer to the *AUDIX Documentation Guide* (585-300-010) for a more detailed list of documents, including which documents to order for a specific release (R1V5 through R1V8) of AUDIX software.

- *AUDIX Release 1 Version 8 Forms Reference* (585-305-209)

- *AUDIX Release 1 Version 7 Forms Reference* (585-305-208)

- *AUDIX Release 1 Version 6 Forms Reference* (585-305-204)

- *AUDIX Release 1 Version 5 Forms Reference* (585-305-202)

- *AUDIX Administration and Data Acquisition Package* (585-302-502)

- *AUDIX Announcement Customization — R1V2 through R1V7* (585-305-531)

- *AUDIX Announcement Customization — Standard User Interface* (585-305-532) (R1V8)

- *AUDIX Announcement Customization — Traditional User Interface* (585-305-533) (R1V8)

- *AUDIX Call Detail Recording Package* (585-305-506)

- *AUDIX Feature Descriptions* (585-305-203)

- *AMIS Analog Networking* (585-300-512)

- *AUDIX Networking* (585-300-903)

- *AUDIX System Description* (585-305-201)

- *Switch Administration for AUDIX Voice Messaging* (585-305-505)

- *AUDIX-L Maintenance* (585-304-102)

- *AUDIX Maintenance for Tier I* (585-305-106)

- *GBCS Products Security Handbook* (555-025-600)

HOW TO MAKE COMMENTS ABOUT THIS DOCUMENT

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1. Introduction

This chapter provides an overview of the AUDIX system administration process and outlines the responsibilities of the AUDIX system administrator. Information is organized as follows:

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OVERVIEW

The AUDIX system is a voice mail system, a computerized method of using a touch-tone telephone to send and receive verbal messages (voice mail). The AUDIX system allows subscribers (individuals who have AUDIX service) to use keypad commands on a touch-tone telephone to create, edit, send, receive, save, delete, and undelete (restore) voice mail messages. The AUDIX system can also answer calls for subscribers and record verbal messages from callers.

AUDIX system administration is the ongoing process of making the AUDIX system work to the satisfaction of each subscriber. The administrator is responsible for making the system work efficiently from both the machine side and the user side. This requires both technical and interpersonal skill and is an ongoing responsibility that can take many forms, including the following:

- Setting up AUDIX system subscribers and customizing their service options

- Recording AUDIX system voice fragments, including subscriber names and customized system announcements

- Coordinating switch and AUDIX system administration when new features are activated

- Analyzing AUDIX system audits and traffic reports and taking corrective action when appropriate

- Establishing and maintaining communication with the subscriber community and responding to problems and misconceptions

- Troubleshooting and correcting problems as they occur

ADMINISTRATIVE INTERFACE

The AUDIX system administrative interface appears as a series of interactive screens you display on your system administration terminal. These screens are called *forms*. Each form consists of fields that display information or require information to be entered.

Various administrative forms are used to add, change, delete, or display information relating to the AUDIX system and its subscribers. Each administrative and maintenance form is described in the appropriate forms reference manual for your release of AUDIX software (refer to the *Related Resources* section in the preface). Chapter 1 in that document contains complete instructions for using the administration terminal to access AUDIX system forms.

TYPES OF ADMINISTRATION

The AUDIX system administration process includes four types of administration:

- Switch administration — Establishes communications between the AUDIX system and the switch and specifies Call Answer (CA) coverage paths and Leave Word Calling (LWC) translations for individual subscribers. As the AUDIX system administrator, it is your responsibility to ensure that all required switch administration is completed at the appropriate time before AUDIX cut-to-service and on an ongoing basis as new subscribers are added to your AUDIX system. Switch administration requirements and ramifications are described in Chapter 2, *Cut-to-Service Administration*.

- System administration — Includes tasks you perform to establish system parameters and activate or deactivate AUDIX features. These tasks are performed during cut-to-service and as required as part of your AUDIX system administration routine. AUDIX system administration requirements and ramifications are described in Chapter 2, *Cut-to-Service Administration*, and Chapter 3, *Feature Administration*.

- Subscriber administration — Includes tasks you perform to add new subscribers to your AUDIX system and to change or remove existing subscribers as their AUDIX system requirements change. These tasks are performed during cut-to-service and as required as part of your AUDIX system administration routine. Subscriber administration requirements and ramifications are described in Chapter 2, *Cut-to-Service Administration*, Chapter 3, *Feature Administration*, and Chapter 6, *Ongoing Subscriber Administration*.

- Filesystem administration — Includes maintaining filesystem space, increasing filesystem sizes, creating new filesystems, backing up filesystems, and creating customized system voice announcements. These tasks are performed during cut-to-service and as required as part of your AUDIX system administration routine. Filesystem administration requirements and ramifications are described in Chapter 2, *Cut-to-Service Administration*, and Chapter 7, *Ongoing Filesystem Administration*.

All types except switch administration are performed using the AUDIX administration forms.

ADMINISTRATIVE PHASES

AUDIX system administration occurs in three phases that are addressed in this document:

- Preliminary administration — Includes checking prerequisite switch administration and organizing information for input during cut-to-service administration. The most important activity during this phase is for you to be involved in the system configuration process to learn as much as possible about AUDIX features and equipment and about how AUDIX systems interconnect with the switch, and if your machine is in an AUDIX network, with other AUDIX machines. This phase of AUDIX administration is described in Chapter 2, *Cut-to-Service Administration*, under *Cut-to-Service Prerequisites*.

- Cut-to-Service administration — Includes initial system, filesystem, and subscriber administration that must be completed before the AUDIX system can be used by the general user population. This phase of AUDIX system administration is described in Chapter 2, *Cut-to-Service Administration.*

- Ongoing administration — Includes all administrative activities that are performed during normal AUDIX system operation after cut-to-service, including subscriber and feature administration, ongoing preventive maintenance, ongoing filesystem administration, alarms, logs, audits, traffic reports, setting up automated attendants, and planning for future growth. This ongoing phase of AUDIX system administration is described in Chapters 3 through 12.

Each phase in the administration process may include one or more of the administration types (switch, system, subscriber, filesystem) that were introduced in the previous section.

SYSTEM MANAGEMENT TOOLS

AUDIX system management involves evaluating information about your system's performance and taking appropriate actions. This task is part of your ongoing administrative responsibilities. System management information is generated from the following sources:

- Alarms, logs, and audits — AUDIX system diagnostic programs recognize and resolve problems that may occur within system files. Diagnostic programs that monitor the system while running in the background find errors as they occur and run internal audits that attempt to correct problems. If problems cannot be corrected internally, they are logged as faults that generate alarms. System audits run automatically each night or as required using the AUDIX system administration forms. Audits are also run automatically when faults are logged by software during normal AUDIX system operation. These processes are described in Chapter 8, *Alarms, Logs, and Audits*.

- Traffic reports — AUDIX report-generating programs collect data about your system's activities during specified hours, days, or months. These reports are used to evaluate actual system use compared to projected use and are helpful in predicting your future equipment requirements. Traffic reports are described in Chapter 9, *Traffic Reports*.

- AUDIX Administration and Data Acquisition Package (ADAP) — Collects and transfers AUDIX forms data (such as subscriber, traffic, and billing information) to a PC from the AUDIX system administration terminal port. The data is transferred to a PC database and stored in a format compatible with dBASE III PLUS. Once collected and downloaded to a PC, this data can be presented in standard reports generated by this package, or programs can be written to present this data in formats that fit your specific needs. This software package is described in *AUDIX Administration and Data Acquisition Package* (585-302-502).

- AUDIX Call Detail Recording (CDR) — The optional CDR feature provides detailed information about voice mail, call answer, call transfer, outcalling, and other system activities. This information is written to a disk file for downloading and further processing on a PC using applications you or your programming staff develop. The CDR feature is described in *AUDIX Call Detail Recording Package* (585-305-506).

AUDIX ADMINISTRATOR RESPONSIBILITIES

Your responsibilities as an AUDIX system administrator include the following:

- You are responsible for performing cut-to-service tasks that set the initial system parameters, establish system security measures, and enter the initial group of AUDIX system subscribers into the system. This administration is described in Chapter 2, *Cut-to-Service Administration*.

- You are responsible for determining which AUDIX features to make available to subscribers, and for performing system and subscriber administration that activates, deactivates, modifies, or monitors these features. This administration is described in Chapter 3, *Feature Administration*.

- You are responsible for ongoing daily, weekly, and monthly preventive maintenance tasks to monitor system performance and maintain system security. This administration is described in Chapter 5, *Ongoing Preventive Maintenance*.

- You are responsible for ongoing subscriber administration to add, change, and remove subscribers as new employees are added to the AUDIX system, new features are made available, and as subscribers change locations or leave your company. This administration is described in Chapter 6, *Ongoing Subscriber Administration*.

- You are responsible for ongoing filesystem administration to increase filesystem sizes as more subscribers are added to your system and as usage patterns are established within your company. Filesystem administration also may include backing up filesystems, customizing system greetings, changing system thresholds, installing new versions of AUDIX system software, moving filesystems to different volumes, and creating new voice text filesystems as required. This administration is described in Chapter 7, *Ongoing Filesystem Administration*.

- You are responsible for monitoring system alarms, the administrator's system log, and system audits to ensure that your system is performing properly and to correct administrative errors that may occur. This administration is described in Chapter 8, *Alarms, Logs, and Audits*.

- You are responsible for monitoring traffic reports that provide detailed information about the AUDIX system and subscribers to ensure that your system is performing properly and to spot potential problems and trends that may require intervention on your part. This administration is described in Chapter 9, *Traffic Reports*.

- If you use the automated attendant feature, you will also be responsible for setting up and managing automated attendants. This administration is described in Chapter 11, *Automated Attendant*.

- You are responsible for evaluating your AUDIX machine's ability to carry the load you are giving it and for determining if you need additional ports or disks now or in the future for the AUDIX system to perform to your company's expectations. This administration is described in Chapter 12, *AUDIX Capacity Planning*.

- You are responsible for interacting with your subscribers, ensuring that they are properly trained, correcting their misconceptions, troubleshooting their problems, and listening to their needs. Appendix A, *Communicating with Subscribers*, contains tips and guidelines you may find useful.

The following documents should also be used as needed:

- If you use ADAP and/or CDR collection features, you may also be responsible for setting up these features, collecting raw data from the AUDIX system on a PC, and producing additional traffic and financial management reports. These features are described in *AUDIX Administration and Data Acquisition Package* (585-302-502) and *AUDIX Call Detail Recording Package* (585-305-506) respectively.

- If your AUDIX system is part of a network of AUDIX machines, you will also be responsible for initial and ongoing network administration tasks. This administration is described in *AUDIX Networking* (585-300-903).

- If you are using the AMIS analog networking feature or the message delivery feature, you will be responsible for initial and ongoing administration of these features. This administration is described in *AMIS Analog Networking* (585-300-512).

- If you decide to customize (modify) your AUDIX system announcements, refer to the appropriate announcement customization guide for your version of AUDIX software (see the *Related Resources* section in the preface).

You are responsible for understanding how your AUDIX system works so that you can fix problems as they occur and also anticipate problems before they occur. This information is contained throughout this document and the entire AUDIX system library, through administrator training classes, and through the AUDIX helpline. You will not become an expert overnight, but if you use the resources that are available to you, you will learn something every day.

2. Cut-to-Service Administration

This chapter describes cut-to-service administration, including administrative activities that you should complete before subscribers start using the AUDIX system. Information is organized as follows:

OVERVIEW

Cut-to-service administration includes administering the AUDIX machine, administering the AUDIX system, and administering your company's initial group of subscribers. Your responsibilities during the cut-to-service administrative phase begin after the AT&T service technicians at your site have installed the AUDIX system and have performed, with you, acceptance tests to verify that the system is working properly.

Activities described in this section are listed in the order in which they should be performed during the cut-to-service administrative phase. During the ongoing administration phase, you may again perform some of these activities on a regular basis, though not necessarily in the order listed here. Cut-to-service tasks include the following:

1. Log in to the AUDIX system and create your own personal password for security.

2. Check the AUDIX system clock.

3. Examine and possibly modify system thresholds. Thresholds are percentages of the amount of space that can be used before the AUDIX system issues a warning message indicating that the system is running low on available space.

4. Set subscriber and traffic parameters.

5. Examine and possibly modify default class of service (COS) configurations. A class of service is a preset group of subscriber service options that has been assigned a unique name and number for assignment to subscribers who use that combination of service options.

6. Add initial AUDIX subscribers to the system.

Besides the tasks in the above list, there are a number of other tasks that might also be completed during the cut-to-service phase. These activities include modifying default values in certain fields on the administrative forms. You may wish to wait until the system has been in use for some time before changing the defaults. This will give you a chance to evaluate actual usage requirements and make changes based on those requirements.

CUT-TO-SERVICE PREREQUISITES

Before you can begin cut-to-service administration, you must verify that necessary switch administration has been completed. You must also know how to use the AUDIX administration terminal to access and modify AUDIX administrative forms.

Verifying Switch Administration

Switch administration sets up communications between the AUDIX system and the switch, specifies which device controls subscriber message waiting lamps (MWLs) and Leave Word Calling (LWC), and defines where the AUDIX system fits in the call-coverage paths of individual AUDIX subscribers.

This administration is performed by the service technician and switch administrator during AUDIX system installation. Before you begin AUDIX system cut-to-service, verify with your switch administrator that the following switch-related administration has been completed:

1. Switch analog ports must be administered as one or more call-distribution groups on the switch with a Direct Inward Dialing (DID) extension assigned as the associated number for the AUDIX call-distribution groups.

2. For integrated AUDIX systems (those with a data link between the AUDIX system and the switch), the data link must be administered at the switch to establish time synchronization between the switch and the AUDIX system, to give the AUDIX system control of subscriber MWLs, to send subscriber LWC messages to AUDIX mailboxes, to effect enhanced call transfers out of the AUDIX system, and to establish connect and disconnect conditions.

3. If the Call Answer (CA) feature is used, subscriber call-coverage paths must be administered so that calls are routed to the AUDIX system at some point in the coverage path if the AUDIX system is to answer the call when the subscriber is not available.

4. The AUDIX serial number and machine name must be identified on the `identification` form.

5. If the AUDIX machine is part of an AUDIX network, the time zone where the machine's host switch is located must be identified on the `switch time zone` form.

6. The extension number length of the host switch must be identified and the analog switch circuits must be assigned to extension numbers on the `system : translation : voice port` form.

7. If the AUDIX machine is connected to the switch via a data link, the data link must be established using the `system : translation : switch connection` form. Separate versions of this form are provided for the different connection types and for standalone systems (those which have *no* data link connection to the switch).

Using the Administration Terminal and Administrative Forms

AUDIX system administration is performed at a data terminal or PC connected to the AUDIX administration port. This terminal should have been installed and tested during AUDIX system installation. Refer to Chapter 1 in your forms reference manual for information about using the administration terminal.

The screens displayed at the administrative terminal, called the AUDIX administrative forms, are used to add, change, delete or display information relating to the AUDIX system and its subscribers. These forms are referred to in this document and are described in detail in the appropriate forms reference manual for your release of AUDIX software (refer to the *Related Resources* section in the preface).

AUDIX online help is available when you are using administrative forms. This program provides three levels of information: path line help, form help and field help. All three levels of help information are available for every administrative and maintenance form.

For more information about using AUDIX forms and AUDIX online help, refer to Chapter 1 in the appropriate forms reference manual for your system.

TASK 1: LOG IN TO THE AUDIX SYSTEM

To administer your AUDIX system, you must first log in at your administration terminal.

To log in:

1. Enter **cust** at the `login` prompt.

   cust is the administrative login ID.

2. Enter **cust** at the `password` prompt.

   cust is the system default password.

3. Enter either **513** or **5420** at the `terminal type` prompt, depending on your administrative terminal model.

   Your particular terminal type corresponds to the model of the terminal from which you will administer the AUDIX system. The AUDIX system supports the AT&T 513 Business Communications Terminal (BCT) and the TELETYPE 5420 or any equivalent terminals. For a list of some of the equivalent terminal types, refer to Appendix A, *The Terminal Interface*, in the appropriate forms reference manual for your release of AUDIX software.

After you have logged in, the screen appears as shown in Figure 2-1, *AUDIX Screen Following Login*. From this screen you can access the AUDIX forms to perform administration tasks. Press (CTRL-d) when you are ready to log off.

```
AUDIX STATUS:   alarms: none   logins: 1   thresholds: none

PATH:


```

Figure 2-1. AUDIX Screen Following Login

NOTE	The AUDIX system accepts up to four administration and/or maintenance logins. This allows others, such as AT&T service technicians, to access AUDIX forms for performing installation and maintenance functions. Of the four login IDs, the cust login ID belongs to you. The technicians who installed your system may assign passwords to one or more of the other login IDs, prohibiting you from using them. They will not change the password for the cust login.

TASK 2: CHANGE YOUR PASSWORD

After you are logged in, you should change the default password to one of your choosing using the identification form. You will use this new password with the cust login ID each time you log in to perform AUDIX system administration. You can also change the cust login to one of your choosing if you wish.

Once you change your password or login ID, if you forget either one, you must contact the AUDIX Helpline to reassign the system default password or login ID. This is a complicated procedure which may require re-entering system translations and other information. Some of this information may be difficult to duplicate. Therefore, **do not forget your password or login ID**.

TASK 3: CHECK THE AUDIX SYSTEM CLOCK

The AUDIX system has a clock that is used to perform certain time-dependent tasks, such as placing a timestamp on messages, delivering messages at particular times, and automatically deleting messages after a retention time has expired. The clock is initially set during AUDIX system installation, but it should be checked during the cut-to-service phase. It is used with both standalone and data link configurations.

Synchronization of the AUDIX system and switch clocks is optional. It is important that your AUDIX system clock be accurate; it is less important that the AUDIX system and switch clocks be synchronized. If the clocks are more than 15 minutes off, the AUDIX system will send an alarm saying that the clocks are not synchronized. This alarm means only that you may want to synchronize the clocks.

Use the `system : clock` form to check and (if needed) set the AUDIX system clock.

TASK 4: SET SYSTEM THRESHOLDS

Thresholds are boundaries used in monitoring the amount of available space within individual subscriber mailboxes and throughout the entire system.

The AUDIX system uses thresholds to determine when to issue warnings that system space or personal mailbox space is running low. This happens when subscribers do not regularly delete messages from their mailboxes. You can help eliminate this by stressing to subscribers the importance of deleting messages immediately after listening to them and by regularly cleaning out both incoming and outgoing message space.

Thresholds indicate the points at which warning messages will be issued. The AUDIX system was delivered with default threshold values that should initially be adequate. If you want warnings issued at lower thresholds (sooner than indicated by the default thresholds), you should modify the default values.

There are two types of thresholds:

- Subscriber message space thresholds monitor the space available within each subscriber's personal mailbox.
- System message space thresholds monitor the system-wide space available throughout all subscriber mailboxes.

Within the two categories, there are different levels at which threshold exceptions can occur (at which the boundaries are exceeded). Subscriber message space is monitored by an upper and a lower threshold. System space has, in addition, a middle-level threshold.

Use the `system : thresholds` form to review and set system threshold parameters.

TASK 5: EVALUATE SYSTEM SECURITY ISSUES

In rare instances, unauthorized individuals (hackers) make connections to the long distance telecommunications network through the use of remote access features of automated attendant and voice messaging systems (toll fraud). If this occurs, applicable tariffs require that the customer pay all network charges for traffic. AT&T cannot be responsible for such charges and will not make any allowance or give any credit for charges that result from unauthorized access.

Please read the following section carefully to diminish the risk of toll fraud occurrences.

- If the enhanced call transfer feature is available for your system (see the following list), activate it. This feature allows callers to transfer from the AUDIX system only to other extensions in the switch dial plan and is your best defense against possible toll fraud. The enhanced call transfer feature is available on AUDIX systems integrated with an AT&T System 85 R2V4, System 75 R1V3 Issue 1.4 and later, and DEFINITY Generic 1, Generic 2, and Generic 3 systems. If your AUDIX system works with another PBX type, other security measures may be available; contact your AT&T representative for more information.

- Set a minimum subscriber password length of five digits and explain to users the importance of choosing non-trivial passwords (examples of trivial passwords are ''11111'' or a subscriber's name or extension).

- Set the `cust` login password to at least six characters, with one of the characters as a symbol.

- Limit the number of allowed consecutive unsuccessful login attempts to five or fewer.

For more detailed information on system security issues, see Chapter 4, *Ongoing System Security*.

TASK 6: SET SUBSCRIBER AND TRAFFIC PARAMETERS

System appearance parameters customize aspects of how the AUDIX system works in your particular installation, including the following:

- The maximum number of consecutive unsuccessful login attempts a subscriber is allowed before being denied further access to the AUDIX system.

- The minimum length for subscriber passwords.

- The number of seconds the AUDIX system will wait for subscribers to enter commands.

- The number of seconds the AUDIX system will wait before transferring to a covering extension when handling a call to a subscriber whose mailbox is full.

- The system guest password that nonsubscribers can use to leave messages for a subscriber.

- The status of the multiple personal greetings feature (initial default — yes). This feature should be left on under most circumstances. The only reason to deactivate multiple personal greetings is if you are upgrading from a previous release of AUDIX software and do not want your subscriber population to confront a new user interface for personal greeting administration. In this case, deactivate the feature during cut-to-service. If you deactivate the feature later after subscribers have used it, they will lose their recorded personal greetings.

- The status of the name record by subscriber feature (initial default — yes).

- The status of traffic collection (initial default — yes).

- The prime time traffic collection hours.

- The status of the call transfer out of AUDIX feature (initial default for new R1V7 and later systems — no). If your system was upgraded from an earlier release of AUDIX software to R1V7 or later software, the upgrade utility deactivates call transfer out of AUDIX. However, if your system was upgraded from R1V7 to R1V8 8:1 software only, the call transfer out of AUDIX feature settings were left unchanged.

- The system default covering extension for escape to attendant transfers.

- The rescheduling increments that specify how long the system will wait before attempting to resend messages that could not be delivered.

Use the `system : appearance` form to set subscriber and traffic parameters.

In addition to these basic parameters, there are several administrable AUDIX features you may want to activate, such as file redundancy, outcalling, and message sending restrictions. You can administer these features now if you want them activated for your initial AUDIX sessions, or wait until after cut-to-service is complete. Administration procedures for activating or deactivating AUDIX features are described in Chapter 3, *Feature Administration*.

TASK 7: EVALUATE SERVICE CLASSES

Each subscriber's AUDIX service is controlled by service options that you administer to best meet individual subscriber requirements. These service options control features such as addressing mode (name or extension) and the order in which messages are read out to the subscriber.

Use the `cos` (class of service) forms to display and change individual classes of service. The `cos` form contains fields that, together, represent the full set of administrable service options. After defining classes of service, you can then assign a particular class of service to each subscriber you add to the AUDIX system with the `subscriber : local` form. The AUDIX system then automatically assigns the subscriber all of the service options predefined by that class of service.

Your system was shipped with 12 class of service forms. One is identified as the default. Seven others are shipped with values to fit specific usage patterns. All 12 classes of service are available for you to modify and rename as required to define classes of service which meet different types of subscriber requirements within your organization. Use the `list : cos` form to list all the service classes.

- The default form (named ''def'' [cos : default]) defines a generic class of service that will probably handle your service needs initially. Note that this version of the form is assumed if you do not enter a class of service for a subscriber on the `subscriber : local` form; consequently you can save keystrokes later by customizing this version of the form to fit the needs of the majority of your subscribers.

- Two forms define classes of service for *typical* light AUDIX users, one with a message retention time of 10 days and 1 with 30 days (named ''light10'' [cos : 1] and ''light30'' [cos : 5])

- Two forms define classes of service for *typical* medium AUDIX users, one with a message retention time of 10 days and one with 30 days (named ''medium10'' [cos : 2] and ''medium30'' [cos : 6])

- Two forms define classes of service for *typical* heavy AUDIX users, one with a message retention time of 10 days and one with 30 days (named ''heavy10'' [cos : 3] and ''heavy30'' [cos : 7])

- One form defines a class of service for Bulletin Board Service only that has the call answer *preset* permission set (named ''bulletin'' [cos : 4])

- Four forms are set identically to the ''default'' (named ''class8'' [cos : 8], ''class9'' [cos : 9], ''class10'' [cos : 10] and ''class11'' [cos : 11]).

The particular service options that subscribers within your organization will require may not be immediately obvious. Initially, you may want to assign all subscribers the default class of service. Or, you may want to modify one of the other classes of service and then assign it to all subscribers. Either method will provide subscribers with adequate interim service. Once you become familiar with the needs of your organization, you will be better able to identify the classes of service that are most useful. Then you can modify the `cos` forms to meet these needs.

If you modify certain fields on a `cos` form after subscribers have been assigned that class of service, those subscribers will automatically have the same fields updated on their `subscriber : local` form. For example, if you change the `incoming mailbox: lifo/fifo` field from l to f for the class of service named `class8` (cos:8), then all subscribers with either `class8` or 8 in the `cos` field on their `subscriber : local` form will also have the `incoming mailbox: lifo/fifo` field changed automatically.

TASK 8: ADMINISTER INITIAL SUBSCRIBERS

Adding a subscriber means giving an individual within your organization permission to use the AUDIX system. You do this by assigning the individual a login and a password, defining a set of permissions called service options that control the individual's AUDIX service, and recording the subscriber's name as it will be spoken by the AUDIX system. If the name record by subscriber feature is used, subscribers can record their own names.

Switch administration must already have been performed for your initial subscribers to establish call coverage paths and LWC permissions for the AUDIX system. AUDIX switch administration requirements were described previously in this chapter.

Part 1: Add Subscribers to the AUDIX System Directory

Use your administration terminal to add subscriber information (name, extension, password, and service options) to the AUDIX system.

Use the `subscriber : local` form to add new subscribers to the AUDIX system. Use the `list : subscriber` or `list : extension : local` forms to display AUDIX subscribers and administered extensions.

NOTE	Alternatively, you may use ADAP to enter new subscriber information directly into the AUDIX database. This is convenient for entering a large number of subscribers since you can enter them as a group instead of entering them individually on the `subscriber : local` form. Refer to *AUDIX Administration and Data Acquisition Package* (585-302-502) for more information about using this software package.

Assign subscribers an initial password that is less than the minimum password length defined on the `system : appearance` form. When the subscriber logs on to the AUDIX system for the first time, he or she then will be forced by the AUDIX system to enter a new password that is at least as long as the required minimum.

If none of the predefined classes of service meet a particular subscriber's needs, you can customize the subscriber's service options by assigning a class of service and then changing information in individual fields on the subscriber's `subscriber : local` form. The subscriber's service options are then independent of the assigned class of service and will not be updated by changes made to any `cos` form.

Part 2: Record Subscriber Names

NOTE	You do not have to complete this step if you use the name record by subscriber feature, which is activated by default on the `system : appearance` form. Subscribers without recorded names will be prompted to voice their own name the first time they log in to the AUDIX system when this feature is activated. This feature is highly recommended.

Alternatively, you can still record names for subscribers when the name record by subscriber feature is active. In this case, subscribers are not prompted to record their names when they first log in, since there is already a name recorded, but they can still change the recording to be their own voice at any time. This is convenient for allowing individual subscribers to either use the system-voiced name or their own voice, depending on personal preference.

If you deactivated the name record by subscriber feature (or if you choose to record the names initially even though name recording is activated), you must record subscriber names for use by the AUDIX system. For professional-sounding results, you may want to have one individual record all subscriber names in a voice that sounds similar to the one in which the AUDIX system announcements were recorded. You should also ensure that the recording is done in a quiet room that is free of background noise.

You must have announcement-control permission set before you can record names for the AUDIX system subscribers via the AUDIX system administration menu. Set this permission by entering a **y** in the `permissions, announcement control` field on your `subscriber : local` form.

Use your touch-tone telephone to record subscriber names in the AUDIX `ndat` names data filesystem. The subscriber name recording is the spoken name you record for each AUDIX subscriber.

The subscriber name is spoken by the AUDIX system during call answering: *Your call is being answered by AUDIX. John Jones is not available.* This announcement is composed of three unique fragments. The first fragment (*Your call is being answered by AUDIX*) and the third fragment (*is not available*) are AUDIX system fragments; the second fragment (*John Jones*) is your recorded name fragment.

Subscriber names are recorded by logging in to the AUDIX system using your touch-tone telephone, accessing the administrative menu, identifying the subscriber's extension, and speaking the name in response to AUDIX voice prompts. Note that this is a different user interface than that presented to subscribers recording their own names when name record by subscriber is activated.

Perform the following steps to create a subscriber's name recording:

1. Dial the AUDIX system extension.

2. Enter your extension (one that has announcement control permission) followed by the pound sign (#).

3. Enter your password followed by the pound sign (#).

4. Press **9** to perform system administration.

5. Press **4** to record a subscriber's name.

6. Enter the extension of the subscriber whose name you are about to record followed by the pound sign (#).

7. Speak the subscriber's name clearly when prompted.

8. Press **1** to signify the end of the recording.

9. Choose one of the following to accept or delete the recording:

   - Press either **2** or **3** to listen to your recording before approving or deleting it.

   - Press either ***#** or **#** to approve the recording as is (the **#** command is used on the R1V8 standard user interface, and the ***#** command on the traditional user interface).

   - Press ***D** to delete the recording.

10. If you want to re-record the name, choose one of the following:

    - If you approved the recording, repeat steps 6 through 9.

    - If you deleted the recording, press **1**, then repeat steps 7 through 9.

11. When you are finished with this subscriber, choose one of the following:

    - Repeat steps 6 through 9 for each additional subscriber name to be recorded.

    - Press ***R** to return to the activity menu, or just hang up to exit from the AUDIX system.

Part 3: Back Up the Names Data Filesystem

When you are finished recording subscriber names, you may want to manually back up the names data filesystem if you have recorded a large number of subscriber names. Use the `system : announcement : filesystems` form to manually back up the names filesystem. This filesystem is normally backed up automatically each Sunday, but you may want to protect your work in the interim.

If you want the filesystem backed up automatically each Sunday, you must specify the disk on which the backup copies will reside using the `system : announcement : filesystems` form.

WHAT TO DO AFTER CUT-TO-SERVICE

Basic AUDIX cut-to-service administration is now completed. At this point, you have established basic AUDIX service for your initial subscribers and set system parameters to handle your initial requirements. Steps to do afterward include:

1. Review Chapter 3, *Feature Administration*, if you have not already done so, to determine which AUDIX features you will use and to activate or deactivate those features as required for your installation.

2. Review Chapter 5, *Ongoing Preventive Maintenance*, for some insight into your ongoing responsibilities as administrator of the AUDIX system. Set up a daily, weekly, and monthly ongoing maintenance schedule and make it an important part of your routine.

3. After an initial testing period with the subscribers you administered during cut-to-service, you need to administer the rest of your subscriber population and manage the filesystems as AUDIX usage increases. These tasks are described in Chapter 6, *Ongoing Subscriber Administration*, and Chapter 7, *Ongoing Filesystem Administration*.

NOTE	The default filesystem sizes are based on typical AUDIX system configurations. After you have added all your initial subscribers to the system, you should check that the filesystem sizes are still adequate for your needs. The *Increase Filesystem Sizes* section in Chapter 7, *Ongoing Filesystem Administration*, describes how to use the `system : limits` form to recalculate recommended filesystem sizes.

4. If you have upgraded your AUDIX system from an earlier release of AUDIX software to R1V8, review the information in Chapter 10, *R1V8 Transition Guidelines*. This chapter describes the prompt and dial-plan differences between the R1V8 software release and previous versions. You need to be aware of certain operational differences when using an R1V8 system, and should pass this information on to the subscriber population following an R1V8 upgrade.

3. Feature Administration

This chapter describes administration you may need to perform to set up and use individual AUDIX system and subscriber features. Information is organized as follows:

OVERVIEW

Besides the preliminary and initial administration described in Chapter 2, *Cut-to-Service Administration*, you may need to perform additional administration to activate or deactivate AUDIX features and to modify feature parameters to meet your specific requirements.

You should review each feature individually and make decisions about its usage in your organization before administering your AUDIX subscriber population and taking the system live.

AUDIX features and their administration requirements are summarized in this chapter. For more information about individual features, refer to *AUDIX Feature Descriptions* (585-305-203).

ADMINISTRATION AND DATA ACQUISITION PACKAGE (ADAP)

The AUDIX Administration and Data Acquisition Package (ADAP) is a data collection and reporting tool that transfers raw data from your AUDIX database to a personal computer (PC) for further analysis. This software package includes a set of menu-driven standard reports that work in conjunction with the dBASE III PLUS relational database program, and a separate MS-DOS-based command language for retrieving data from AUDIX database files for use in customized reports. This command language can also be used to modify `subscriber : local` data in the database files from the PC. Refer to *AUDIX Administration and Data Acquisition Package* (585-302-502) for more information about setting up and using this software.

AMIS ANALOG NETWORKING

AMIS analog networking is an AUDIX feature (offered with R1V6 or later software) that permits subscribers to exchange voice mail messages with any other voice mail system anywhere in the world, provided it also has AMIS analog capabilities. Messages can be exchanged with subscribers on other AUDIX systems that have not been digitally networked to the local system, or with subscribers on AT&T DEFINITY AUDIX systems (which do not currently support digital networking). Messages can also be exchanged with subscribers on remote voice mail systems with AMIS capabilities made by vendors other than AT&T.

AMIS analog networking is an optional AUDIX feature and must be purchased separately. For complete information on administering an AMIS analog network, refer to *AMIS Analog Networking* (585-300-512).

AUTOMATED ATTENDANT

The automated attendant feature allows you to set up the AUDIX system to answer extensions and prompt callers to press appropriate keys on their touch-tone telephones to leave messages for individual subscribers or departments. Callers may also press touch-tone keys to transfer to another number either by extension number or using name addressing.

You can set up any number of automated attendants, and you can nest them so that an option selected from one attendant menu dials another automated attendant with a complete new menu of options. Callers are transferred directly to AUDIX mailboxes from automated attendant menu options without going through the switch, allowing an automated attendant to efficiently handle AUDIX coverage for shared extensions and nonresident subscribers. Refer to Chapter 11, *Automated Attendant*, for complete instructions on setting up and using automated attendants.

AUTOMATIC FILESYSTEM BACKUP

The automatic filesystem backup feature automatically backs up the `sdat` system data filesystem each night at 10 p.m. This filesystem contains information that is vital to your AUDIX system. No administration is required except to equip the removable cartridge in the AUDIX system drive. When the cartridge is full, the AUDIX system automatically deletes the oldest backup copies on the cartridge until it has room for the new copy. If you have a very large system and can only get one backup per removable cartridge, you should alternate cartridges every other night to ensure that you always have a backup copy of your system files. Use the `maintenance : dbp : equip` and `maintenance : dbp : unequip` forms to equip and unequip the removable cartridge.

The `ndat` names filesystem can also be automatically backed up on the same removable cartridge tape (or another disk of your choosing) each Sunday evening if so specified on the `system : announcement : filesystems` form.

AUTOMATIC MESSAGE SCAN

The automatic message scan feature allows a subscriber to have all new messages played without requiring additional button presses. The subscriber can then listen to just headers, just messages, or both headers and messages continuously from the first new message to the last. The subscriber activates and controls this feature through the AUDIX voice menu prompts. No specific AUDIX system administration is required to use this feature.

BROADCAST MESSAGES

The broadcast messages feature allows selected subscribers to send broadcast messages to all local subscribers and selected remote subscribers. Permission to send broadcast messages can be assigned on a per-subscriber basis or by class of service. You should limit permission to send broadcast messages to yourself or to a few selected subscribers to avoid overusing this feature.

The broadcast message is seen as the first message in the subscriber's mailbox regardless of subsequent message activity. The subscriber can retrieve, listen, save, and — if the message is not private — forward the message. Broadcast messages are not actually distributed. Instead, subscribers hear the message from a mailbox that is administered as the broadcast mailbox. Since the message is not actually sent, the sender can specify a date when the message should no longer be played.

The sender can also specify if notification of the message is to be provided; if so, the message activates the message-waiting lamp (MWL), stutter dial tone, and/or outcalling as if the broadcast message was a new message. **You are urged to** *not* **specify message notification for broadcast messages** under normal circumstances because lighting the lamp of every subscriber on your machine simultaneously severely impacts the AUDIX system and switch performance. Note that even if you attempt to limit the impact by scheduling the message delivery during out-of-hours, each subscriber will find their message notification mechanism active the next morning, causing a huge burst of AUDIX system traffic.

Managing the Broadcast Feature

Subscribers with broadcast permission do *not* normally use the broadcast mailbox login ID and password to create broadcast messages. Therefore, consider carefully how many individuals are given the extension and password of the broadcast mailbox. The only reason to log in to this mailbox is to prematurely purge a broadcast message or login announcement before its scheduled expiration time or to scan the mailbox to see what broadcast messages are present. If you scan messages in the broadcast mailbox, do *not* press ***D** while scanning messages. If you do, the message being scanned will be deleted from the system. Unless you use the ****U** (Undelete) option (on R1V7 and later systems), no one will hear that message again.

When a subscriber with broadcast permission creates a broadcast message, the message is stored in the subscriber's outgoing mailbox until the scheduled delivery time when it is delivered to the broadcast mailbox. The subscriber can change the message's text and status prior to delivery, the same as for any voice mail message originated by the subscriber. After the message is delivered to the broadcast mailbox, it is not owned by the originator anymore and can only be deleted by logging in to the AUDIX system using the broadcast mailbox extension and password. Broadcast messages are automatically deleted two days after the delivery date unless otherwise specified during message creation, addressing, or scheduling.

The size of the broadcast mailbox is defined on the `subscriber : local` form. The maximum length of individual broadcast messages is defined by each originator's maximum message length on the `subscriber : local` form. A maximum of 16 messages can be in the broadcast mailbox at one time. However, because broadcast messages will be presented to subscribers before their other messages, use restraint with this feature to avoid overwhelming subscribers with messages that must be scanned before they can hear their personal messages.

The `traffic : feature` and `traffic : subscriber` forms include information about the number of broadcast messages that are sent during their respective reporting periods.

Creating the Broadcast Mailbox

The broadcast mailbox is typically associated with a ''phantom'' subscriber — a subscriber profile whose extension exists in the AUDIX system but is not administered at the switch. The broadcast mailbox (phantom subscriber) must be added to the system before anyone is allowed to create and send a broadcast message or login announcement. The broadcast mailbox extension (when assigned) is identified on the `system : appearance` form for reference.

To administer the broadcast mailbox:

1. Activate broadcast permission for the message sender(s) as follow:

   — If permission to create broadcast messages is by class of service, use the `list : subscriber` form (or the AUDIX Administration and Data Acquisition Package) to verify that only the intended subscribers are members of that class of service. Then set broadcast permission to `b` or `v` on the appropriate `cos` form.

   — If permission to create broadcast messages is on a per-subscriber basis, set broadcast permission to `b` or `v` on the `subscriber : local` form for each individual subscriber who will have that permission.

2. Display the `system : translation : switch connection` form for your system and make a note of the number in the `host switch` field. You need to assign this number to the phantom subscriber profile in the next step.

3. Set up the broadcast mailbox on the `subscriber : local` form as follows:

   — To make the mailbox a ''phantom'' subscriber, assign the mailbox an AUDIX extension that is *not* administered at the switch. Alternatively, if extra extensions are available on the switch, you may administer the broadcast mailbox using an extension on the switch.

NOTE	If you have an early switch, using a switch extension may cause an alarm on the switch unless you actually install hardware or administer the extension as a station without hardware. This feature may have different names on different switches, such as administered without hardware (AWOH) on a Generic 3.

   — Set the `switch number` field to the same number as the `host switch` (see Step 2).

   — Set the `broadcast mailbox` field to `y` when you initially create the phantom subscriber (before you press ⌐ADD⌐ [F2]; you cannot change this field after the subscriber profile exists). Set the `permissions, type` to `n` to disallow call answer permission for this subscriber.

   — Make sure the mailbox size is large enough to hold at least 16 messages, and that incoming mailbox retention times are longer than the number of days you will want to keep broadcast messages active in your system.

Creating a Broadcast Message

The procedure to create a broadcast message varies depending on the version of AUDIX software you are using — R1V8 or earlier.

R1V8 Systems: To create a broadcast message on a system running R1V8 (standard or traditional) software:

1. Using your touch-tone phone, log in to the AUDIX system as a subscriber who has broadcast permission and press **1** to record a message.

2. Record the message and approve it as prompted (use **#** on standard systems or ***#** on traditional systems).

3. Next, a prompt to enter an extension and pound sign is heard. If you want the broadcast message to be delivered to remote network subscribers, enter their extensions (or a list) and press ***#** or **#**. Otherwise, just press ***#** or **#** to ''approve'' an empty address list and send the broadcast message to all local subscribers.

    If local subscriber extensions are entered here, they will be accepted, but the local entries will be discarded when the message is delivered to the broadcast mailbox since all local subscribers will receive the message automatically.

4. When you approve the address list, you are automatically placed in the R1V8 options menu. Press **8** to make the message a broadcast message.

5. After pressing **8**, you can optionally press ***M** to hear the second-level broadcast options menu. If you do, select the appropriate options:

    — Press **1** to notify recipients of the broadcast message using message notification (not recommended under normal circumstances).

    — Press **2** to change the message expiration date from the default (two days after delivery date) up to a year in the future. The delivery scheduling procedure is the same as any other voice mail message.

    — Press **#** or ***#** to approve your broadcast options and return to the options menu.

6. Select any other options you wish from the R1V8 options menu. For example, you can press **1** to make the broadcast message private, or **4** to save a copy of the message in your file cabinet.

7. Press **#** or ***#** to approve any broadcast message options and send (deliver) the message.

R1V5 through R1V7 Systems: To create a broadcast message on a pre-R1V8 system:

1. Using your touch-tone phone, log in to the AUDIX system as a subscriber who has broadcast permission and press **1** to record a message.

2. Record the message and approve it as prompted using ***#**.

3. Next, a prompt to enter an extension and pound sign is heard. If you want the broadcast message to be delivered to remote network subscribers, enter their extensions (or a list) and press ***#**. Otherwise, enter the extension for at least one local subscriber and press ***#** to approve the address list (you cannot ''approve'' an empty address list prior to R1V8). You do *not* have to enter more than one local subscriber's address because all local subscribers will receive the broadcast message automatically.

4. Press ***M** to hear the first-level options menu.

5. Press **8** to make the message a broadcast message.

6. After pressing **8**, you can optionally press ***M** to hear the second-level broadcast options menu. If you do, select the appropriate options:

    — Press **1** to notify recipients of the broadcast message using message notification (not recommended under normal circumstances).

    — Press **2** to change the message expiration date from the default (two days after delivery date) up to a year in the future. The delivery scheduling procedure is the same as any other voice mail message.

    — Press ***#** to approve your broadcast options and return to the options menu.

7. Select any other options you wish from the first-level options menu. For example, you can press **1** to make the broadcast message private. Press ***#** to exit the options menu.

8. Press ***#** to approve the delivery list and options. Press ***#** again to send (deliver) the message, and press **Y** or **N** to save a copy of the message in your file cabinet.

The broadcast messages you create are ''delivered'' into only one mailbox, the special broadcast mailbox. All subscribers hear broadcast messages from this mailbox, although they may have the perception that the messages are in their own mailboxes. If subscribers do not press ***D** after hearing a broadcast message, the AUDIX system makes a copy of the message in the subscriber's mailbox in the unopened or old category, depending on whether or not they listened to the message body.

Changing or Deleting a Broadcast Message

To change or delete a broadcast message:

*   To change the message text or delivery instructions *before* the scheduled delivery, log in to the AUDIX system using the extension and password of the person who created the message, press **4** to check outgoing messages, and edit the message as you would for any outgoing message.

*   To change message options (broadcast, private, notification, etc.), access the broadcast message options menu as described in the *Creating a Broadcast Message* section and activate or deactivate the desired options as prompted.

*   To prematurely delete a delivered broadcast message *after* the scheduled delivery, log in to the AUDIX system using the extension and password of the broadcast mailbox, scan the incoming mailbox until you find the broadcast message you are interested in, and press ***D** to delete it.

| NOTE | If you delete a broadcast message that had message-waiting notification turned on, it takes the system an audit cycle to turn off all the MWLs. To minimize subscriber confusion, if a broadcast message is deleted from the broadcast mailbox or expires while lamps are lit for it, subscribers will hear the message *''Broadcaster has deleted this broadcast message''* when they try to listen to the new message. |

BULLETIN BOARD

The bulletin board feature allows you to set up extensions that callers can dial to hear recorded messages. The ''message'' is actually the extension's personal greeting. A special class of service (COS 4 — BULLETIN) is already set up for bulletin boards. This class is predefined to allow creation of personal greetings messages but does not allow call answer messages from callers. Bulletin board extensions can also be included on automated attendant menus.

To administer a bulletin board:

1. Use the `subscriber : local` form to assign the extension you will use for the bulletin board. If callers are to reach it directly, this must be an extension that exists on the switch; otherwise, the bulletin board can be set up as a ''phantom'' subscriber using an AUDIX extension that is *not* administered at the switch.

2. Assign this subscriber profile a name that describes its function (for directory purposes) and assign the class of service that is predefined for use with bulletin boards (4).

3. Using your touch-tone telephone, log in to the AUDIX system as the subscriber you just created and record the bulletin board message(s) as that subscriber's personal greeting(s).

Refer also to the multiple personal greetings feature, which describes how to establish up to nine different personal greetings that may be activated automatically during specified time periods (such as prime time or out-of-hours) or depending on the caller (such as internal or external). This feature may be useful for bulletin boards in some circumstances.

CALL ANSWER (CA)

The Call Answer (CA) feature allows the AUDIX system to answer calls for subscribers who are busy or unavailable. Subscribers may record personal greetings that will be played automatically when the AUDIX system answers calls for them.

The call answer feature works in conjunction with the call forwarding and call coverage features in the switch. Subscribers who will have call coverage by the AUDIX system must be administered as such (`permissions, type` set to `c`) on the associated `cos` form for that class of subscribers or on the `subscriber : local` form for individual subscribers. In addition, the switch must be correctly administered to provide the call coverage or call forwarding switch features that are required to direct calls to the AUDIX system for call answering.

CALL DETAIL RECORDING (CDR)

The Call Detail Recording (CDR) feature provides detailed information on AUDIX voice mail and call answer sessions, call transfer attempts, and outcalling. This information is written to a disk file for downloading to a PC using ADAP. This feature does not generate reports with this information; it simply collects raw data which you or your programming staff can use to generate custom reports in the MS-DOS environment or upload to a mainframe for analysis.

CDR is an optional AUDIX feature that is not included in the basic AUDIX system and must be purchased separately. The feature is deactivated by default; it can only be activated initially by AT&T personnel. Once the feature is activated, administration tasks include setting collection parameters on the `system : cdr` form and identifying the CDR PC on the `system : translation : machine : adjunct` form. Refer to *AUDIX Call Detail Recording Package* (585-305-506) for more information about CDR.

CLASS OF SERVICE (COS)

The Class of Service (COS) feature provides 12 unique service classes containing different combinations of features or mailbox parameters for use by subscribers with varying service requirements. Service classes are predefined on `cos` forms and can be individually modified to meet your specific requirements. Each subscriber is assigned a class of service by associating their `subscriber : local` form with a specific `cos` form, or individual subscriber service options can be customized by entering service information directly on the subscriber's `subscriber : local` form. Service classes are described in Chapter 2, *Cut-to-Service Administration*.

DELIVERY SCHEDULING

The delivery scheduling feature allows subscribers to schedule delivery of voice mail messages to other subscribers for any day and time up to a year in the future using their touch-tone telephones and AUDIX voice prompts. Normally, the AUDIX system delivers messages immediately. No specific AUDIX system administration is required to use this feature.

DIAL-BY-NAME

The dial-by-name feature allows callers who do not know a subscriber's extension to dial ***T** (transfer out of AUDIX) and ***A** (alternate addressing) and then dial the subscriber's name to call the extension. No specific AUDIX system administration is required to use this feature; however, the call transfer out of AUDIX feature *must* be activated for ***T** to work.

DIRECTORY

The directory feature allows callers to dial ****N** (names and numbers directory) command to find out the name or extension of an AUDIX subscriber. No specific AUDIX system administration is required to use this feature.

END OF MESSAGE WARNING

The end of message warning feature is enabled by the system administrator and causes message recording to be interrupted a predefined amount of time before the maximum recording length is reached. The AUDIX system announces that ''n'' seconds of recording time remain and prompts the user to resume recording. The system administrator can define the end of message warning feature on a system-wide basis. The administrator is also able to define individual warning times for AUDIX subscribers who want to override the system-wide warning time using the `cos` or `subscriber : local` forms.

The end of message warning feature is activated by the system administrator on the `system : appearance` form. If feature is not active, warnings will not be played, regardless of the system-wide or subscriber-specific warning times. If the subscriber-specific warning time is blank, the system-wide warning time is used. If the warning time is set to zero (0) seconds, the end of message warning will not be given.

The end of message warning feature is applicable to call answer, voice mail, responding to voice mail, and creating personal greetings. It does not apply to the recording of announcement fragments, machine names, or subscriber names.

ESCAPE TO ATTENDANT

The escape to attendant feature gives subscribers the option of allowing callers to talk to a live attendant by pressing **0** instead of, or in addition to, leaving a message in the subscriber's AUDIX mailbox. For example, imagine AUDIX subscriber Alice has the escape to attendant feature enabled for her mailbox and the coverage point is administered to be her secretary's extension. If Barry calls Alice and she does not answer, Barry is transferred to her voice mailbox. Barry can either leave an AUDIX message for Alice and/or press ⌊0⌋ to transfer to her secretary's extension.

If you are using enhanced call transfer in R1V7 and later software, you can administer what will happen to Barry's call if he presses ⌊0⌋ and Alice's secretary does not answer the call:

- If you enter **y** in the `0 calls follow coverage` field on the `system : appearance` form, Barry's call will be transferred to the secretary's voice mailbox or whatever coverage point is defined. (This is always true for basic call transfer; no administration is necessary.)

- If you enter **n** in this field, Barry's call continues to ring at the secretary's desk until someone answers or Barry hangs up.

To use the escape to attendant feature, the call transfer out of AUDIX feature must be activated on the `system : appearance` form. The system-wide covering extension also must be assigned on the `system : appearance` form (or administered separately for individual subscribers) for this feature to work properly. Individual subscribers must have call answer permission; if the subscriber wants the call transferred to an extension other than the system-wide covering extension, that extension must be identified on the `subscriber : local` form.

FILE REDUNDANCY

The file redundancy feature allows the AUDIX system to make a continuously updated copy of specified filesystems (usually on a separate hard disk than the original), effectively eliminating the need for backing up files since there are two current copies of the filesystem. This allows the system to continue operation after a filesystem or disk problem by immediately activating the backup copy.

This feature, which is initially deactivated by default, is administered on the `filesystem : detail` form.

> **NOTE**   File redundancy is not available on AUDIX Large systems. AUDIX-L customers who desire file redundancy should contact their AT&T representative.

FORM FILLER

The form filler feature captures voiced responses to prerecorded questions and stores those responses in a voice mailbox where they can later be transcribed to data records on a PC or on hard copy. No specific AUDIX system administration is required to use this feature, which relies on the call-routing and form-scripting capabilities of the Inbound Call Director (ICD) and AUDIX Voice Power software packages, which must be installed on an AT&T 6386 WGS or compatible PC.

FULL MAILBOX ANSWER MODE

The full mailbox answer mode feature enables the AUDIX system to respond to a call to a full mailbox with the subscriber's personal greeting, if active, followed by system announcements that inform the caller about the full mailbox condition and offer other available call answer options, such as dialing **0** or ***0** to reach a covering extension or operator. These system announcements cannot be dialed through. If the caller does not respond within an administered time period, the call is transferred automatically to the covering extension (if one is administered on the `subscriber : local` or `system : appearance` form), or the AUDIX system disconnects the call after the timeout period.

No specific AUDIX system administration is required to use this feature. The number of seconds to wait for a response to a full mailbox announcement is five seconds by default. This can be changed on the `system : appearance` form.

GUEST PASSWORD

The guest password feature allows callers who are not AUDIX subscribers to dial the AUDIX system directly, enter a subscriber's extension and a system-wide guest password, and leave a voice mail message in the subscriber's mailbox. The caller cannot access any messages in the subscriber's mailbox.

Since the guest password feature is handled within the AUDIX system and does not involve the switch, it provides a convenient method for bypassing normal call coverage paths to a subscriber and leaving a message. The guest password can also be used to provide the call answer feature to AUDIX subscribers who do not have an extension administered at the switch, though this might be done more efficiently with an automated attendant.

To administer the guest password feature, enter the system-wide guest password (up to 15 characters) on the `system : appearance` form. Make sure the password is within the limits set by the `minimum password length` field on the same form. You must also verify that extensions to be called by guest callers have call answer (c) permission on the corresponding `subscriber : local` form. You must run the subscriber data audit on the `maintenance : audits : fp` form after changing the guest password. This audit serves two purposes:

- If the guest password is a duplicate of an existing subscriber password, the audit notes the duplication (error code 120 on the `maintenance : error : display` form). If error 120 is recorded, you must use a different guest password. Change the password again and run the audit again until error 120 is not recorded, indicating there are no duplicate passwords.

- After the audit is run, the new guest password is known to the system and subscribers are prevented from administering their own passwords to conflict with the guest password.

You must use the `maintenance : error : specification` form to indicate the starting time for which errors will appear on the `maintenance : error : display` form.

LEAVE WORD CALLING (LWC)

The Leave Word Calling (LWC) feature converts switch-generated LWC requests from internal callers into AUDIX-generated standard-format LWC messages requesting a return call and identifying the caller, extension, and time of call. LWC must be administered at the switch to deliver LWC messages to the AUDIX system; no specific AUDIX system administration is required to use this feature.

LOGIN ANNOUNCEMENT

The login announcement feature allows selected subscribers to create a system announcement that will be played whenever subscribers log in to the AUDIX system. Permission may be assigned on a per-subscriber basis or by class of service. The sender can use all of the normal delivery options, including future delivery, and can specify an expiration date when the announcement is to be automatically deleted from the system. The sender can also specify whether subscribers can dial through (interrupt) the announcement or not.

Login announcements use the same mailbox as broadcast messages, but they are not voice mail messages and cannot be forwarded or saved by subscribers and do not generate message-waiting notification. Outcalling does not occur for these messages. The message is played until it is deleted from the system, either automatically at the specified expiration date or manually by the sender logging in to the AUDIX system using the broadcast mailbox extension and password. Unless the sender specifies otherwise, login messages are deleted automatically by the system two days after the scheduled delivery date.

Only one login announcement can be active at any time on the system. The `traffic : feature` form includes information about login announcements that are sent during its reporting period.

Administering Login Announcements

When a subscriber with permission creates a login announcement, the message is stored in the subscriber's outgoing mailbox until the scheduled delivery time when it is delivered to the broadcast mailbox. Prior to delivery, the creator can change the message's text and status. After the message is delivered to the broadcast mailbox, it is no longer owned by the originator and cannot be modified.

The maximum length of individual messages is defined by each originator's maximum message length on the `subscriber : local` form. The size of the broadcast mailbox is also defined on the `subscriber : local` form. If a subscriber logs in to the broadcast mailbox when a login announcement is active, the announcement is not played.

To administer login announcements:

1. Check the `system : appearance` form to see if a broadcast mailbox exists and to identify its extension.

   — If a broadcast mailbox is assigned, look up its subscriber profile on the `subscriber : local` form and verify its permissions will allow login announcements to be sent (a permission of `b` allows both broadcast messages and login announcements to be sent from that mailbox).

   — If no broadcast mailbox is assigned, set up a joint broadcast/login announcement mailbox using the `subscriber : local` form (see the *Broadcast Messages* feature for complete information).

2. Activate login announcement permission for the sender(s) as follow:

   — If permission to create login announcements is by class of service, set permission to create login announcements (`l` or `b`) on the appropriate `cos` form.

   — If permission to create login announcements is on a per-subscriber basis, set permission to create login announcements (`l` or `b`) on the `subscriber : local` form for each subscriber who is to have that permission.

Creating a Login Announcement

The procedure to create a login announcement varies depending on the version of AUDIX software you are using — R1V8 or earlier.

R1V8 Systems: To create a login announcement on a system running R1V8 (standard or traditional) software:

1. Using your touch-tone phone, log in to the AUDIX system as a subscriber who has login announcement permission and press **1** to record a message.

2. Record the message and approve it as prompted (use **#** on standard systems or ***#** on traditional systems).

3. Next, a prompt to enter an extension and pound sign is heard. If you want the login announcement to be delivered to remote network subscribers, enter their extensions (or a list) and press ***#** or **#**. Otherwise, just press ***#** or **#** to ''approve'' an empty address list and send the login announcement to all local subscribers.

    If local subscriber extensions are entered here, they will be accepted, but the local entries will be discarded when the message is delivered to the broadcast mailbox since all local subscribers will hear the message automatically.

4. When you approve the address list, you are automatically placed in the R1V8 options menu. Press **9** to make the message a login announcement.

5. After pressing **9**, you can optionally press ***M** to hear the second-level login announcement options menu. If you do, select the appropriate options:

    — Press **1** to make the announcement nondial-through (uninterruptible).

    — Press **2** to change the message expiration date from the default (two days after delivery date) up to a year in the future. The delivery scheduling procedure is the same as any other voice mail message.

    — Press **#** or ***#** to approve your login announcement options and return to the options menu.

6. Select any other options you wish from the R1V8 options menu. For example, you can press **4** to save a copy of the login announcement in your file cabinet.

7. Press **#** or ***#** to approve any login announcement options and send (deliver) the message.

R1V5 through R1V7 Systems: To create a login announcement on a pre-R1V8 system:

1. Using your touch-tone phone, log in to the AUDIX system as a subscriber who has login announcement permission and press **1** to record a message.

2. Record the message and approve it as prompted using ***#**.

3. Next, a prompt to enter an extension and pound sign is heard. If you want the login announcement to be delivered to remote network subscribers, enter their extensions (or a list) and press ***#**. Otherwise, enter the extension for at least one local subscriber and press ***#** to approve the address list (you cannot ''approve'' an empty address list prior to R1V8). You do *not* have to enter more than one local subscriber's address because all local subscribers will receive the message automatically.

4. Press ***M** to hear the first-level options menu.

5. Press **9** to make the message a login announcement.

6. After pressing **9**, you can optionally press ***M** to hear the second-level login announcement options menu. If you do, select the appropriate options:

   — Press **1** to make the announcement nondial-through (uninterruptible).

   — Press **2** to change the message expiration date from the default (two days after delivery date) up to a year in the future. The delivery scheduling procedure is the same as any other voice mail message.

   — Press ***#** to approve your login announcement options and return to the options menu.

7. Select any other options you wish from the first-level options menu, or just press ***#** to exit the options menu.

8. Press ***#** to approve the delivery list and any options. Press ***#** again to send (deliver) the message, and press **Y** or **N** to save a copy of the message in your file cabinet.

Changing or Deleting a Login Announcement

To change or delete a login announcement:

- To change the message text or delivery instructions *before* the scheduled delivery, log in to the AUDIX system using your touch-tone phone, press **4** to check outgoing messages, and edit the announcement as you would any other outgoing voice mail message.

- To change the login announcement status (such as changing the announcement message to a broadcast message), access the options menu as described in the *Creating a Login Announcement* section and activate or deactivate the desired options as prompted.

- To purge the login announcement *after* the scheduled delivery but before the expiration date, log in to the AUDIX system with the extension and password of the broadcast mailbox extension, press **2** to scan the mailbox to find the login announcement, and press ***D** to delete it.

MAILING LIST

The mailing list feature allows AUDIX subscribers to create lists of names or extensions to send voice mail to instead of addressing each recipient individually. This is convenient for sending voice mail to groups who regularly receive mail, such as members of a department or project. Lists can be composed of individual subscriber names, extensions, and other lists. The creator of a list can also designate it public or private, with public lists available for use by other subscribers. Even if a list is public, only the owner of the list can modify it.

No specific AUDIX system administration is required to use this feature. However, the maximum number of lists each subscriber is allowed and the total number of entries in all lists for a subscriber can be limited by the administrator on the appropriate `cos` form for a group of subscribers or on the `subscriber :`
`local` form for individual subscribers.

MESSAGE DELIVERY

Message delivery is an AUDIX R1V6 or later feature that permits subscribers to send AUDIX voice mail messages to any touch-tone telephone, anywhere in the world (including someone's home). This feature is an extension of the AMIS analog networking feature. Message delivery is an optional AUDIX feature that is not included in the basic AUDIX system; you must purchase the AMIS analog networking feature to use the message delivery feature.

After a subscriber has addressed a message delivery message, the AUDIX system dials the recipient's telephone number. When the recipient answers, a recording informs them that they have a message and that they should press ⟨ 0 ⟩ to listen to the message. When they do, the AUDIX system plays the message.

If a range of message delivery telephone numbers is administered, individual recipients do not need to be separately administered on the local AUDIX. However, the system administrator can choose to administer any telephone numbers to which message delivery traffic is heavy to simplify message addressing procedures.

Complete instructions and information on the message delivery feature are in *AMIS Analog Networking* (585-300-512).

MESSAGE SENDING RESTRICTIONS

The message sending restrictions feature allows you to create as many as 15 communities of interest within an AUDIX subscriber base and restrict the communities to which individual communities can send voice mail. This feature is activated or deactivated on the `system : sending restrictions` form; it is initially off by default.

A grid showing sender communities (1 to 15 *down* the form) and recipient communities (1 to 15 *across* the form) is displayed, and the administrator enters an **r** at each intersection on the grid where a sending community is restricted from addressing a receiving community. For example, an **r** placed at the intersection of sender community 1 and recipient community 2 on the grid restricts members of community 1 from sending voice mail to members of community 2.

The default community for each machine is defined on the `system : translation : machine : audix/amis/call delivery` form. This default can be overridden for individual subscribers on the `subscriber : local` or `subscriber : remote` forms. You must restart the AUDIX system after activating or deactivating the message sending restrictions feature, but not after merely setting or changing individual community restrictions on the form.

For AUDIX networks, all AUDIX machines must have R1V5 or later software installed; prior versions do not recognize sending restrictions and communities. The `traffic : community : day` and `traffic : community : month` forms display counts of the number of messages sent and blocked for each community.

MULTIPLE PERSONAL GREETINGS

The multiple personal greetings feature allows subscribers to record and store up to nine personal greetings and to activate as many as three of them at once for different call types (internal/external, busy/no-answer, or out-of-hours). For example, one greeting can be activated for internal calls, a second for external calls, and a third for calls outside of normal business hours. Alternatively, one greeting can be activated for calls when the subscriber's phone is busy, a second for when there is no answer, and a third for after-hours calls.

Internal/external and busy/no answer call types are mutually exclusive; the subscriber can specify separate greetings for internal and external calls *or* for busy and no answer calls, but not for both call types or a combination of both call types. Note that out-of-hours calls are answered with the out-of-hours greeting regardless of whether the call is internal/external or busy/no-answer. Even if subscribers choose not to provide separate greetings for different call types, the multiple personal greetings feature is useful for setting up a library of different personal greetings to activate for different occasions, such as messages for lunch or vacation breaks.

Since automated attendants and bulletin boards are technically AUDIX subscribers who are administered on a `subscriber : local` form, this feature can also be used to provide menu prompts for automated attendants and announcements for bulletin boards that vary depending on whether the caller is an internal or external caller and if the call is placed during normal business hours or not.

This feature, which is initially on by default, is activated or deactivated for the entire system on the `system : appearance` form. All other administration for multiple personal greetings is performed by individual subscribers using their touch-tone telephones and the AUDIX voice menu prompts:

- When multiple personal greetings are not activated, subscribers can record a single personal greeting and activate it instead of the AUDIX system greeting.

- When multiple personal greetings are activated, subscribers can record up to nine personal greetings (identified as greetings 1 through 9) and activate any one of them at any time instead of the AUDIX system greeting (identified as greeting 0). Subscribers can also specify call types if desired, and activate different greetings (including the AUDIX system greeting) for each identified call type. (You may need to increase mailbox sizes for subscribers who use all nine greetings or who record lengthy personal greetings to accommodate the extra space used by the greetings.)

Several administrative rules apply for activating and deactivating the multiple personal greetings feature. For example, when the administrator *activates* multiple personal greetings on the `system : appearance` form:

- If a subscriber's personal greeting has been recorded, it is saved as greeting #1.

- If the greeting was activated, it will be used for all call types.

- If the greeting was not activated, the system greeting will be used for all call types and greeting #1 will be inactive.

- If no personal greeting was recorded, the system greeting will be used for all call types.

If the administrator *deactivates* multiple personal greetings on the `system : appearance` form:

- If a subscriber has recorded multiple greetings, greeting #1 is saved as the personal greeting and greetings #2 through #9 are deleted.

- If greeting #1 is active for all call types, it will remain active as the personal greeting.

- If greeting #1 is not active for all call types, the system greeting will be activated and greeting #1 will be saved.

Multiple personal greetings should be left on under most circumstances. The only reason to deactivate multiple personal greetings is if you are upgrading from a previous version of the AUDIX system and do not want your subscriber population to confront a new user interface for personal greeting administration. In this case, deactivate the feature during cut-to-service. If you deactivate the feature after subscribers have used it, they will lose their recorded personal greetings.

NOTE	If you deactivate multiple personal greetings, the space used by multiple personal greetings is not freed up until the subscriber mailbox audit has run. The subscriber mailbox audit runs automatically each night or can be run manually using the `maintenance : audits : fp` form.

NAME RECORD BY SUBSCRIBER

The name record by subscriber feature allows subscribers to record their names in their own voice for use as a name fragment by the AUDIX system in place of the name that is normally voiced in by the administrator. When this feature is enabled, subscribers who are new AUDIX users will be directed by the AUDIX system to record their name when they log in for the first time.

Alternatively, the administrator or any other subscriber with announcement control on the `subscriber : local` form, can still record names for subscribers when the name record by subscriber feature is active. In this case, subscribers are not prompted to record their names when they first log in, since there is already a name recorded, but they can still change the recording to be their own voice at any time. This is convenient for allowing individual subscribers to either use the system-voiced name or their own voice, depending on personal preference.

Subscribers will be able to change their name recording at any time when the feature is active by pressing **5** at the AUDIX activity menu and then following the voice prompts from the AUDIX subscriber administration menu to re-record the name recording.

The recorded name is voiced by the AUDIX system when the subscriber logs in and also when the subscriber's name appears in a message header, system greeting, message verification, name addressing confirmation, and ****N** directory request. In network AUDIX configurations, the newly recorded name will be added to the new message transmission queues for the appropriate network AUDIX machines. This feature, which is initially on by default, is activated for the entire system on the `system : appearance` form.

NETWORKING

The networking feature enables the interconnection of AUDIX systems through virtually any type of switch (including non-AT&T switches) for the purpose of passing voice mail messages between subscribers on the various systems. This feature is useful for companies with multiple AUDIX systems installed in physically remote office locations and also for single large installations where more than one AUDIX system is required to handle the large number of subscribers and heavy traffic volume.

Refer to *AUDIX Networking* (585-300-903) for details about administering and managing a network of AUDIX systems.

NONDELIVERABLE MESSAGE NOTIFICATION

The nondeliverable message notification feature notifies a subscriber when a message sent by that subscriber cannot be delivered. The notification is received in the subscriber's incoming mailbox, while the nondeliverable message remains in the subscriber's outgoing mailbox. The subscriber can press **4** to review outgoing mail and can reschedule the message for delivery, change the address if necessary, or just delete the message. The administrator controls (with the `system : appearance` form) the number of rescheduling attempts that are allowed before a message is considered nondeliverable. The maximum number of attempts is 10.

ONLINE HELP

The online help feature provides general or detailed help at the press of a function key for administrators who are using AUDIX forms. There are three levels of online help:

- *Path line help* — displays all legal commands that may be selected from the current point in the path. This help information is displayed if [F4] (HELP) is pressed when the cursor is on the `PATH` line.

- *Form help* — displays information about the form that is currently on the terminal screen, including the form's purpose and the function key commands that are valid for it. This help information is displayed if [F4] (HELP) is pressed when a form is displayed on the screen.

- *Field help* — displays information about the field where the cursor is currently located on a displayed form. This help information is displayed if [F5] (FIELD HELP) is pressed when a form is displayed on the screen.

No specific AUDIX system administration is required to use this feature.

OUTCALLING

The outcalling feature allows the AUDIX system to call a subscriber on the phone for message notification instead of or in addition to notification by a MWL or stutter dial tone. This is useful for receiving AUDIX messages at a home phone or at a phone in another business-related location. However, it is not recommended for use as an emergency pager since the AUDIX system does not treat outcalling as its highest priority during busy periods and may not be fast enough for emergency applications.

This feature, which is initially off by default, is activated or deactivated on the `system : outcalling` form. Permission to use outcalling may then be assigned on a per-subscriber basis or by class of service. The administrator controls the hours that outcalling is permitted (up to three periods each day), the maximum number of ports that can be used simultaneously for outcalling, and the maximum number of digits (up to 29) that subscribers can specify for the outcalled number. Subscribers administer outcalling numbers and permissible hours (the same as or a subset of the system's permissible hours) using the AUDIX voice menu.

To administer outcalling:

1. Activate outcalling and set up system outcalling restrictions using the `system : outcalling` form.

2. Choose one of the following:

    - If permission to use outcalling is by class of service, activate outcalling on the appropriate `cos` form.

    - If permission to use outcalling is on a per-subscriber basis, activate outcalling on the `subscriber : local` form for each individual subscriber who will have that permission.

3. Restart the system using the `startup` form or run the service dispatcher audit on the `maintenance : audits : fp` form to activate changes made on the `system : outcalling` form.

Outcalling uses any available ports, up to the maximum specified on the `system : outcalling` form. Outcalling always selects the highest numbered AUDIX ports first. On some 1A ESS switch or standalone systems, you may wish to leave a few of the highest numbered ports out of the main AUDIX hunt groups and translate them as individual station lines on the switch to reserve ports for outcalling use. You may also want to limit outcalling during prime hours to free more ports for other AUDIX system access.

The maximum number of digits subscribers can specify as their outcall number can be limited to prevent subscribers from making long-distance calls. Administrators should consider using this as a method of diminishing the risk of toll fraud occurrences. The maximum length is 29 digits. However, a very short number may adversely affect subscribers who want to have their pagers alerted through outcalling.

See also *Priority Outcalling* in this chapter for information about using the Outcalling feature for priority messages only.

PERSONAL DIRECTORY

The personal directory feature allows individual subscribers to create a private list of up to 25 customized names for frequently-called subscribers. These names can be shorthand abbreviations or the same as the corresponding directory names. This list is searched first when the subscriber uses addressing by name, transfer by name, or the directory feature. No specific AUDIX system administration is required to use this feature.

PLAYBACK AND RECORDING CONTROL

The playback and recording control feature can be used by anyone entering the AUDIX system to create, leave, or listen to messages. This feature allows subscribers to edit voice mail and call answer messages they originate and allows callers to edit call answer messages they originate, using the touch-tone keys on their phone.

In addition, when listening to a message, subscribers can press ⬡ 6 to advance a few seconds and ⬡ 5 to rewind a few seconds. You can administer these advance/rewind increments to be either four or ten seconds via the `system : appearance` form.

PRIORITY MESSAGES

The priority messages feature allows specified subscribers to send voice mail marked ''priority'' to other AUDIX subscribers. Priority messages are delivered before other new voice mail messages and they are presented before any other new voice mail messages (except broadcast messages) when the recipient logs in to the AUDIX system. Priority messages are identified as such when heard; they can also be marked private. Priority messages to remote subscribers in an AUDIX network are sent during the next scheduled transmission before other new voice mail messages and are played first when the recipient logs in to the AUDIX system (if the remote machine is also R1V5 or later).

To administer priority messaging, activate priority messaging on the appropriate `cos` form or forms if permission to create priority messages is by class of service, or on the `subscriber : local` forms of individual subscribers if permission is on a per-subscriber basis. The `traffic : feature` and `traffic : subscriber` forms include information about priority messages that are sent during their respective reporting periods.

PRIORITY OUTCALLING

The priority outcalling feature allows subscribers to specify that outcalling *only* calls to inform them of the delivery of priority messages. Individual subscribers activate or deactivate this feature using the AUDIX voice prompts. No specific AUDIX system administration is required to use this feature. However, the outcalling feature must be activated for the system on the `system : outcalling` form and subscribers

must be administered to use outcalling on the appropriate `cos` form or on individual `subscriber :` `local` forms.

PRIVATE MESSAGES

The private messages feature allows subscribers to designate outgoing voice mail as private. If this feature is activated, recipients are unable to forward these messages. Messages are marked as private using the ***M1*#** (private) command on R1V5 through R1V7 systems, and the **1** option on the options menu for R1V8 systems. Refer to the appropriate subscriber documentation for your software release for details on recording, designating, and approving private messages. Callers who reach the AUDIX system through the call answer feature can also designate messages as private (see Chapter 10, *R1V8 Transition Guidelines*, for an illustration of this option).

No specific AUDIX system administration is required to use this feature. However, private messaging requires that both the sender and recipient have AUDIX R1V4 or later software; private messages sent to subscribers on earlier systems are returned to the sender's mailbox marked *undeliverable*.

SECURITY PASSWORD

The security password feature protects your AUDIX system from unauthorized access by requiring that subscribers enter a numeric password in addition to their extension number when logging in to the AUDIX system. To use this feature, administrators must specify the minimum number of characters required for AUDIX passwords on the `system : appearance` form. Subscriber passwords must be at least as many characters as defined on this form and not more than 15 characters.

A default numeric password is assigned when the `subscriber : local` form is used to create each subscriber profile. Subscribers should be instructed to change this password when they log in for the first time (and as required on an ongoing basis) using their touch-tone telephone in response to AUDIX voice prompts.

NOTE	If the administrator assigns a default password of less than the minimum number of digits specified on the `system : appearance` form when adding new subscribers, all new subscribers will be forced to change their password the first time they log on to the AUDIX system. For security purposes, this is a good way to ensure that subscribers change their default passwords before they begin using AUDIX services.

SYSTEM CLOCK

The system clock feature provides a real-time clock that is used to issue a time and date stamp for messages and for message scheduling. This clock can be either manually set or synchronized with the switch on the `system : clock` form. For an AUDIX system connected to a 1A ESS or 5ESS switch and for a Standalone AUDIX, the clock must be manually set on the `system : clock` form.

TEXT SERVICE INTERFACE

This feature is in limited-availability status.

The text service interface feature allows electronic text service users to receive notification of AUDIX messages on their text machine in the form of text mail. The text service interface machine is a PC connected to the AUDIX system and to a separate host computer system, such as a mainframe computer equipped with IBM Professional Office System (PROFS). This feature allows subscribers to receive message notification from the AUDIX system even if they do not have MWLs or other message-waiting indicators on their telephones.

Information about the text service interface machine is administered on the `system : translation : machine : adjunct` form. Text service users are identified as such on their `subscriber : local` forms, including the text service machine name and the user's login ID on that machine. Additional administration requirements for text service machines are described in the *AUDIX Text Service Interface* (555-016-201) manual.

TRAFFIC REPORTS

The traffic report feature provides subscriber, community, feature, networking, and port activity measurements for an AUDIX machine, digital networking, AMIS analog networking, and message delivery by the hour, day, or month. This information is used to monitor actual system use and determine if an appropriate level of service is being provided.

Traffic data collection is activated or deactivated on the `system : appearance` form. The prime collection hours (your normal business hours) are also defined on this form. Collection instructions, including the types of information to collect and for what periods, are specified on the individual `traffic` forms that produce and display the reports. Refer to Chapter 9, *Traffic Reports*, for details about administering and using AUDIX traffic reports.

TRANSFER INTO AUDIX

The transfer into AUDIX feature allows a caller who has been routed to coverage or otherwise redirected to be manually transferred back into the AUDIX system to leave a message for the intended subscriber. This transfer is performed by an attendant or other answering party using a dial access code (DAC). No specific AUDIX system administration is required to use this feature. However, transfer into AUDIX is initiated and managed by switch software which must be administered to assign a dial code to the feature. Transfer into AUDIX is available on System 85 R2V4 or later, System 75 R1V3 Issue 1.2 or later, and DEFINITY Generic 1, Generic 2, or Generic 3 switches.

TRANSFER OUT OF AUDIX

The transfer out of AUDIX feature allows an AUDIX subscriber who calls the AUDIX system or any caller who is redirected to the AUDIX system to exit from the AUDIX system and transfer to any extension in the switch dialing plan using the ***T** (Transfer) command. Two versions of this feature are included with the AUDIX system:

- *Basic call transfer* — is used to transfer out of AUDIX to another extension on all switches that use the basic *switchhook flash* method of call transfer. Any standalone AUDIX system must use this call transfer method, as well as switches that do not support the enhanced call transfer version, such as the 5ESS switch.

- *Enhanced call transfer* — is used to transfer out of the AUDIX system to another extension using the data link. With enhanced call transfer, callers can only transfer to other extensions administered in the switch dial plan. This call transfer method is only available on System 85 R2V4, System 75 R1V3 Issue 1.4 or later, and DEFINITY Generic 1, Generic 2, and Generic 3 switches.

AT&T strongly recommends, if you want to enable the call transfer out of AUDIX feature, that you use the enhanced call transfer version if possible. The enhanced version of this feature minimizes toll fraud risks for your company by limiting the transfer destinations to those within the switch dial plan.

Basic and enhanced call transfer out of AUDIX are initially off by default for new R1V7 and later systems. If an earlier system is upgraded to R1V7 or later software, the upgrade utility deactivates the call transfer out of AUDIX feature. This allows customers to evaluate whether or not this feature is necessary for the type of AUDIX service they wish to provide. For R1V7 to R1V8 8:1 upgrades only, the call transfer out of AUDIX feature settings are left unchanged.

NOTE	When transfer out of AUDIX is disabled, the return call and escape to attendant features are disallowed because these features rely on call transfer capability. In addition, automated attendants can only be administered to transfer to other AUDIX mailboxes (not switch extensions) if transfer out of AUDIX is disabled.

To enable call transfer, use the `system : appearance` form. If you enter **y** in the `call transfer out of AUDIX` field, the `enhanced call transfer` field will automatically be set to **y** also. If your switch does not support enhanced call transfer or if you do not want to use the enhanced version of the feature, you may enter **n** in the `enhanced call transfer` field, but the AUDIX system will display a message warning you to implement security precautions to help prevent toll fraud, and log the event in the

administration log.

UNTOUCHED MESSAGE

The untouched message feature allows a subscriber to hold a message in the new category after listening to it, leaving message notification active for the message. This is done by the subscriber using the ****H** (hold) command from the AUDIX voice menu (for example, if a secretary is scanning new messages). No specific AUDIX system administration is required to use this feature.

VOICE MAIL

The voice mail feature allows subscribers to initiate messages for delivery to other subscriber's voice mailboxes. This is the opposite of call answer, where a caller (subscriber or not) is transferred into the AUDIX system to leave a message for a subscriber who does not answer his or her phone. No specific AUDIX system administration is required to use this feature.

VOICE MAILBOX

The voice mailbox feature provides a storage area on the AUDIX hard disk where subscriber messages are stored. AUDIX subscribers are automatically assigned a voice mailbox when they are administered on the `subscriber : local` form. Each subscriber controls access to his or her voice mailbox by using a unique a password.

The administrator controls characteristics of the voice mailbox such as the sequence of messages for playback, the length of time to store messages, and the amount of disk space assigned for the mailbox. This administration is performed either on the appropriate `cos` form for all subscribers assigned a given class of service or directly using the `subscriber : local` forms of individual subscribers.

4. Ongoing System Security

This chapter describes ongoing AUDIX system security recommendations.

OVERVIEW

Your AUDIX system has been carefully designed to be securable. However, some action is required on your part to ensure the necessary security precautions are made and implemented. Maximum security is assured by the following factors:

- Either deactivate the Transfer Out of AUDIX feature, or activate the *enhanced* call transfer version of this feature if possible. The Transfer Out of AUDIX feature allows callers to transfer to other destinations outside of the AUDIX system. The enhanced version limits the destinations callers can reach to other extensions in the switch dial plan; the basic call transfer (or switchhook flash) version allows callers to reach *any* destination accessible through the switch. Using the Transfer Out of AUDIX feature to gain outside access through the switch is the single largest threat to your system's security and offers the greatest risk of possible toll fraud. The *GBCS Products Security Handbook* (555-025-600) offers suggestions for limiting access to outside destinations through your switch security features.

- Subscribers can have passwords up to 15 digits long to access the AUDIX system. For minimum acceptable security, set the minimum password length on the `system : appearance` form for subscribers to be five digits or more (each additional digit you require corresponds to an increase in security). Refer to the *Security Password* section in Chapter 3, *Feature Administration*, for details on how to make subscribers comply with a minimum password length.

- Subscribers are allowed three attempts at logging into the AUDIX system. If the caller has not successfully entered the extension and password in three attempts, the AUDIX system disconnects the call. You can also specify on the `system : appearance` form how many consecutive unsuccessful attempts are allowed (typically involving more than one call into the AUDIX system) before the AUDIX system locks the subscriber's mailbox and does not allow *anybody* to log in to that mailbox. The default value for consecutive unsuccessful attempts is 18, but a value of 3 to 5 is recommended. Once a mailbox is locked, it can only be unlocked by you, the administrator, using the `subscriber : local` form.

    For example, a caller attempting to log in to a subscriber mailbox would be disconnected after the third unsuccessful attempt. If the consecutive attempts allowed is five, the caller could call back but would only be allowed only two additional attempts (the previous three attempts plus two is five consecutive attempts). At this point, the AUDIX system would lock the subscriber's mailbox. The administration log will identify the incoming call that is being locked out as being either from an external phone or from a particular internal extension. If the administration log indicates that a subscriber is repeatedly being locked out, you should consider the possibility that an unauthorized person is attempting to tamper with the subscriber's mailbox. In this event, you may want to report the problem to the subscriber's manager and/or your organization's security officer. Also, you may want to lower the limit for the number of consecutive attempts allowed.

- Access to the AUDIX system administrative terminal is limited. To use the terminal you must know a telephone number for the port (if the administration terminal uses a dial-up setup), a login ID, and a password. The default login ID for the administrative port is `cust`. You should have changed the default password for the `cust` login ID as part of your cut-to-service procedures. Use the `identification` form as needed to change the password to one *at least* six alphanumeric characters long. You are responsible for the security of the administrative login ID and should change the password frequently. To increase security even more, you can change the name of the `cust` login ID to one of your own choosing.

SYSTEM ADMINISTRATOR RESPONSIBILITIES

As the AUDIX system administrator, it is your responsibility to help subscribers protect their mailboxes from unauthorized access, to secure the AUDIX system itself, and to monitor the system reports for possible security violations. Careful attention to security-related administrative features, procedures, and maintenance is required to ensure the integrity of user information. It is your responsibility to make the following guidelines part of your AUDIX system administration.

For subscriber mailbox security:

- Establish well-controlled procedures for resetting passwords if a subscriber is locked out of their mailbox. If subscriber passwords must be preset or changed, they should be instructed to log in immediately and change the password.

- Establish procedures for removing unused mailboxes. Don't create new mailboxes (subscriber profiles) until they are needed.

- Limit the number of consecutive unsuccessful login attempts to five attempts or fewer (the default is 18). After this number of consecutive failures, the subscriber is locked out of the mailbox and cannot access it until you unlock it. When the system is first installed, you may want to make this number larger because subscribers may have problems at first. After a reasonable period of ''getting used to AUDIX,'' however, you should reset the number of consecutive unsuccessful login attempts to the suggested value (five or less).

- Verify that the minimum-length password feature is being used properly. You should never set the minimum password length to zero since this provides *no* mailbox protection. A minimum password length greater than the extension number length forces each subscriber to change the default password the first time he or she logs in. Refer to the *Security Password* section in Chapter 3, *Feature Administration*, for details on using the minimum-length password feature.

- Make sure that subscribers understand the importance of password security to their mailboxes and implement the following guidelines for subscribers:

    — Subscribers should assign a new, personal password as soon as their AUDIX extension is assigned to secure their mailbox. Refer to the *Security Password* section in Chapter 3, *Feature Administration*, for details on how to force new subscribers to choose a new password.

    — Subscribers should not use trivial passwords such as ascending, descending, or the same digits (such as ''1111'' or ''1234''). They should also avoid using the current year as a password.

    — They should not use their phone numbers, extensions, or the reverse of their extensions as passwords.

    — They should not use their names, initials, or other identifying name (such as department) as a password.

    — Passwords should be as long as possible with a minimum of five digits.

    — Passwords should not be posted, shared, or printed in an obvious place.

    — Passwords should not be coded in programmable-function keys or speed-dialing keys which allow ready access by unauthorized persons.

    — Passwords should be periodically changed based on the sensitivity of the messages handled.

For AUDIX system security:

- Ensure that the factory-installed (default) passwords have been changed to non-trivial passwords (you should have changed your system administration password as part of the cut-to-service procedures). Your remote maintenance service center should have a procedure for regularly changing the passwords for the login IDs under their control: `craft`, `ap`, and `inads`.

- Consider disconnecting the maintenance port when not in use. This should be implemented only after thorough risk analysis and cost/benefit studies. Disconnecting the maintenance port eliminates the threat of unauthorized access, but it also eliminates the 24-hour maintenance surveillance capability provided by your remote maintenance service center and may result in additional maintenance costs. You may also consider using a Remote Port Security Device (RPSD) for additional dial-in security.

- Regularly back up system data to ensure a timely recovery, should it be required. Implement a regular off-site backup policy so you will have a recent backup even if a disaster strikes your company's office location.

- Check the `STATUS` line daily for alarms. Some administration alarms or activity log entries could signal possible break-in attempts. Refer to Chapter 8, *Alarms, Logs, and Audits*, for details on accessing the system (administration) log or activity log.

- Monitor traffic reports for unusual feature usage (refer to Chapter 9, *Traffic Reports*, for details on activating and interpreting traffic reports). Certain fields such as the `failed logins` field on the `traffic : feature` reports may indicate possible break-in attempts. Refer to the forms reference manual for details on any field or form.

NOTE	Outcalling notification attempts are pegged as `failed logins` (external or internal) when the outcalls are not answered by a subscriber logging in (for example, if an outcall is made to a pager). Because the system uses an AUDIX port to make an outcall, outcalling notification attempts are listed in the appropriate `failed logins` field so systems engineers can track AUDIX port usage. The `failed logins` numbers can therefore be misleading if the outcalling feature is active.

MINIMIZING TOLL FRAUD RISKS

Your AUDIX system, like all voice messaging and automated attendant systems, is subject to unauthorized long distance call attempts (toll fraud). Protecting your AUDIX system is a vital and important part of your responsibility as system administrator. You should take every precaution to protect your company's assets from both internal and external security breaches. For information on general system security issues, refer to *GBCS Products Security Handbook* (555-025-600). There are steps you can take to minimize the risk of toll fraud.

Transfer Out of AUDIX

AT&T recommends, if you want to enable the call transfer out of AUDIX feature, that you use the enhanced call transfer feature if possible. Implementing the enhanced version of this feature minimizes toll fraud risks for your company by limiting the transfer destinations to those within the switch dial plan. If the enhanced call transfer feature is not available through your switch, you need to use switch security features to limit callers' ability to access outside lines (refer to Chapter 3, *Feature Administration*, for more information on the Transfer Out of AUDIX feature).

Basic and enhanced call transfer out of AUDIX are initially off by default for new R1V7 and later systems. If an earlier system is upgraded to R1V7 or later software, the upgrade utility deactivates the call transfer out of AUDIX feature. You can then evaluate whether or not this feature is necessary for the type of AUDIX service you wish to provide. (For some features, such as automated attendant, call transfer out of AUDIX feature must be active.) For R1V7 to R1V8 8:1 upgrades only, the call transfer out of AUDIX feature settings are left unchanged.

To enable call transfer, use the `system : appearance` form. If you enter **y** in the `call transfer out of AUDIX` field, the `enhanced call transfer` field will automatically be set to **y** also. If your switch does not support enhanced call transfer you may enter **n** in the `enhanced call transfer` field, but the AUDIX system will display a message warning you to implement security precautions to help prevent toll fraud, and log the event in the administration log.

AMIS Analog Networking and Message Delivery

If unrestricted, the AMIS analog networking and message delivery features allow AUDIX subscribers to send messages to any valid telephone number worldwide. Consequently, the AUDIX system administrator must use judgment in administering the AMIS analog networking and the message delivery features. In order to minimize exposure to unauthorized long distance calls, the AMIS analog networking and message delivery feature should be restricted to sending messages to telephone numbers located in the specific calling areas or to specific destinations needed to conduct business.

Additionally, the administrator should use the Sending Restrictions feature to administer which subscribers can send AMIS analog and message delivery messages, and to which locations they can send messages. For more information on AMIS analog networking and message delivery security, refer to *AMIS Analog Networking* (585-300-512).

Outcalling

The Outcalling feature allows subscribers to have the AUDIX system call them at a number of their choice to inform them that they have new (or priority) AUDIX messages. If left completely unrestricted, the Outcalling feature could be used to have the AUDIX system initiate long-distance calls. To enhance security for the Outcalling feature, you can turn off outcalling on a per-subscriber basis using the `subscriber : local` form or the `cos` form. You can also restrict the number of digits that may be used for outcalling on a system-wide basis via the `system : outcalling` form. Other strategies for securing the outcalling ports through switch port restrictions are covered in the *GBCS Products Security Handbook* (555-025-600).

Security Checklist

Table 4-1, *AUDIX System Security Checklist*, summarizes switch and AUDIX features that should be reviewed for security considerations and rates them from poor to excellent. This table should be used as a guideline only; notice that some features, such as call transfer out of AUDIX, *must* be activated if you want other features, such as automated attendant, to work.

Table 4-1. AUDIX System Security Checklist

AUDIX or Switch Feature	System Security			
	Poor	Fair	Good	Excellent
Is Enhanced Call Transfer active?		no		yes
Is Call Transfer Out of AUDIX active?		yes		no
Is Transfer Out of AUDIX allowed on Automated Attendant(s)?		yes		no
Is default password changed on the `identification` form?	no			yes
Is `cust` login ID changed on the `identification` form?			no	yes
Are maintenance password changes scheduled?	no			yes
Subscriber password length:	0	4	5-6	7
# of consecutive retries before lockout:	18	12	8	≤5
Are correct range of extensions administered on `system : translation` forms?		no		yes
Are analog voice ports in unique Class of Restriction (COR)?		no		yes
Does COR block Truck Access Code (TAC)?		no		yes
COR Facility Restriction Level (FRL):	7	4	2	0

5. Ongoing Preventive Maintenance

This chapter describes your ongoing maintenance responsibilities as an administrator and lists administrative tasks that must be performed on a regular basis to ensure that your system is running efficiently and to thwart potential problems through early diagnosis. Information is organized as follows:

Subject	Page
Overview	5-2
Your Responsibility as an Administrator	5-2
Daily Preventive Maintenance Tasks	5-3
Weekly Preventive Maintenance Tasks	5-3
Monthly Preventive Maintenance Tasks	5-4

OVERVIEW

Preventive maintenance that you perform on a regular basis is the key to problem-free operation and a major part of your responsibility as an AUDIX system administrator. Preventive maintenance tasks range from checking alarm logs and taking corrective action to monitoring system performance and projecting your company's future AUDIX system capacity requirements based on current usage and expected growth.

It is very important that you establish a regular routine for performing administrative maintenance. Problems that tend to compound themselves can be identified and corrected early when maintenance is performed regularly, and information that is collected for analysis will be more reliable if samples are for identical collection periods.

Preventive maintenance tasks that must be performed on a daily, weekly, and monthly basis are described on the next several pages, followed by tasks you may perform on an as-needed or periodic basis to measure your system's performance efficiency and project future capacity requirements.

YOUR RESPONSIBILITY AS AN ADMINISTRATOR

Responsibility for maintaining your AUDIX system is split between you and several AT&T organizations as follows:

- AT&T services personnel are normally responsible for checking filters, batteries, cartridges, LEDs, and fans while on-site to service the AUDIX system, but on-site visits are not made specifically for the purpose of checking these items. A sticker is attached to the machine to datestamp each inspection.

- An AT&T remote maintenance service center such as the International Technical Assistance Center (ITAC) or Technical Service Center (TSC) is normally responsible for remote maintenance on your machine by responding to system alarms that are sent to the remote maintenance service center by your AUDIX machine. While responding to these alarms, remote maintenance service center personnel also respond to error log information they notice that could help prevent further problems, but they do not routinely check your error logs except when responding to alarms.

- You, the AUDIX system administrator, are responsible for the daily, weekly, and monthly tasks described in this chapter. These include maintaining filesystem space, backing up filesystems, responding to errors reported in the administration system log, and monitoring the activity log.

In addition, the system administrator and services personnel can work together to help solve the problems which can occasionally occur on the AUDIX system. You can set up a special mailbox for services use (service technicians know the password). If you get a subscriber complaint about a problem with an AUDIX message (such as a noisy or garbled message), you can instruct the subscriber to forward this message (if it still exists) to the services mailbox. This can greatly help services personnel diagnose and correct the AUDIX problem.

DAILY PREVENTIVE MAINTENANCE TASKS

Perform the following preventive maintenance tasks each day, preferably the first thing every morning:

1. Log in to the system at your administration terminal.

2. Check the STATUS line for system alarms (major, minor, warning, and administration). If alarms are present, go to Chapter 8, *Alarms, Logs, and Audits*.

   If your AUDIX system is in a network, check the remote systems for errors, too.

3. Check the STATUS line for system threshold alarms (lower, middle, upper, filesystem, or cdr). If threshold alarms are present, refer to Chapter 7, *Ongoing Filesystem Administration*, under *Maintain Filesystem Sizes*, for corrective actions you might consider implementing.

4. Monitor AUDIX system traffic by reviewing the following traffic reports for the current day and previous day:

   — `traffic : feature : day`

   — `traffic : load : day`

   — `traffic : special features : day`

   — `traffic : network load : day` (if your AUDIX system is in a network)

   These reports, described in Chapter 9, *Traffic Reports*, provide a wide range of information about how your AUDIX system is being used and how efficiently it is performing. Study the reports with a critical eye, looking for problems and potential problems that may be gleaned from report statistics. When you do this every day, discrepancies from normal traffic patterns will be easy to spot.

WEEKLY PREVENTIVE MAINTENANCE TASKS

Perform the following preventive maintenance tasks each week:

1. Check available space on all filesystems as described in Chapter 7, *Ongoing Filesystem Administration*, under *Maintain Filesystem Sizes*.

   Depending on the specific filesystem and your hardware configuration, you may need to increase filesystem sizes, create additional filesystems, or move filesystems to different disks. Each of these options is described later in this chapter and in Chapter 7, *Ongoing Filesystem Administration*.

2. If you do not use the file redundancy feature, back up appropriate filesystems on a removable cartridge.

   Some filesystems are backed up automatically each night or each week or may be set for automatic backup through administration, while others must be manually backed up. Refer to Chapter 7, *Ongoing Filesystem Administration*, under *Back Up Filesystems*, for a table listing backup requirements for individual filesystems.

3. Rotate removable cartridges to ensure that there are two good backup copies of your filesystems.

   When a removable cartridge is full, the AUDIX system copies over previous backups on the disk beginning with the oldest backup to complete its current backup. By alternating cartridges every week, you are guaranteed a current copy on the installed cartridge and a copy that is only a week old on the alternate cartridge. Refer to Chapter 7, *Ongoing Filesystem Administration*, under *Install a Removable Cartridge Disk*, for instructions on unloading and removing the old disk and inserting and loading the new disk.

4. If your AUDIX system is new or if you have recently added a number of subscribers, monitor AUDIX port usage and capacity as described in Chapter 12, *AUDIX Capacity Planning*, to determine if your system is providing an acceptable grade of service. It is recommended that you monitor port usage regularly and plot it over time to anticipate a need for additional ports.

MONTHLY PREVENTIVE MAINTENANCE TASKS

Perform the following preventive maintenance tasks each month:

1. Check system limits and update as necessary.

   System limits, which define system-wide parameters such as the maximum number of subscribers allowed, the total number of messages allowed across all subscriber mailboxes, the total number of lists allowed per subscriber, are defined on the `system : limits` form.

   Besides defining physical parameters, information entered on the `system : limits` form is used by the AUDIX system to calculate recommended filesystem sizes. Therefore, system limits parameter information should be updated each month to reflect your actual operation, and even more frequently during the initial months following cut-to-service when new subscribers and features are added to the system and system activity increases.

2. If updates to system limits in the previous step result in changes to the recommended filesystem sizes, you may need to increase filesystem sizes, create additional filesystems, or move filesystems to different disks. Each of these options is described later in this chapter and in Chapter 7, *Ongoing Filesystem Administration*.

3. If you are not monitoring AUDIX port usage and capacity on a weekly basis, do so on a monthly basis as described in Chapter 12, *AUDIX Capacity Planning*, to determine if your system is providing an acceptable grade of service and to plan for future growth. It is recommended that you monitor port usage regularly and plot it over time to anticipate a need for additional ports.

6. Ongoing Subscriber Administration

This chapter describes subscriber administration that is performed on an ''as required'' basis during normal AUDIX system operation. Information is organized as follows:

OVERVIEW

Ongoing subscriber administration includes administrative activities that must be completed daily as well as some that require completion only occasionally. You have already learned the procedures for many of these activities during the cut-to-service administrative phase (for example, adding subscribers to the system).

The initial set of subscribers are added to the system during the cut-to-service phase, but personnel changes within your company will require that you also add subscribers on a continuing basis. There are also procedures shown in this chapter for activities that you have not yet encountered (for example, changing subscriber names).

There are two general categories in ongoing subscriber administration — routine administration and problem solving:

- Routine subscriber administration involves activities such as adding and removing subscribers and changing their passwords, names, and extensions.

- Problem-solving can involve anything from answering simple questions about using the AUDIX system to determining why a subscriber is not able to create messages.

A *sample* subscriber change-request form is shown in Appendix A, *Communicating with Subscribers*, to give you one way in which subscribers can communicate their problems to you.

ADD NEW SUBSCRIBERS

After the initial group of subscribers has been added, you must still regularly add subscribers as new employees join your company or existing employees without AUDIX service are added. As personnel at your company changes, you will find adding subscribers to be a regular activity.

Perform the following steps to add new subscribers:

1. Inform the switch administrator that new subscribers are being added and that call coverage paths and Leave Word Calling (LWC) permissions need to be established for them. AUDIX system switch administration requirements are described in Chapter 2, *Cut-to-Service Administration*.

2. Use the `subscriber : local` form to add new subscriber information (name, extension, and service options) to the AUDIX system. Note that if you assign new subscribers a password that is less than the minimum number of digits specified for passwords on the `system : appearance` form, they will be forced by the AUDIX system to change their password the first time they log in. This is a good way to ensure that subscribers do not continue using the default password you assign them initially.

    Alternatively, you may use ADAP to enter new subscriber information directly into the AUDIX directory database. This is convenient for entering a large number of subscribers since you can enter them as a group instead of entering them individually on the `subscriber : local` form. Refer to *AUDIX Administration and Data Acquisition Package* (585-302-502) for more information about using ADAP.

3. A voice recording of the subscriber's name is required in the names data filesystem for use as a voice fragment to be spoken by the AUDIX system during call answering. Depending on if and how you use the name record by subscriber feature, you can record subscriber names using your touch-tone phone or subscribers will be prompted to speak their name the first time they log in to the AUDIX system. Refer to the following *Create and Change Subscriber Name Recordings* section for instructions on recording subscriber names.

4. If you enter a large number of subscribers, you may want to manually back up the names data filesystem when you are finished. This filesystem can be backed up automatically each Sunday, but you may want to protect your work in the interim if you have recorded name fragments for a large number of users. You may also want to back up the system data filesystem, though your exposure is not as great because the system data filesystem is backed up automatically each night. Refer to *Back Up Filesystems* in Chapter 7, *Ongoing Filesystem Administration*, for information about manually backing up filesystems.

You may add each subscriber as the request to do so comes in, or you may prefer to wait until you have several requests and then add a group of subscribers. In any case, you should notify new subscribers once they have been given service and, if you have assigned a default password, inform each subscriber of the password.

CREATE AND CHANGE SUBSCRIBER NAME RECORDINGS

The subscriber name recording is the spoken name you record for each AUDIX subscriber. This fragment is spoken by the AUDIX system during Call Answering, such as *Your call is being answered by AUDIX. John Jones is not available.* The first fragment (*Your call is being answered by AUDIX*) and the third fragment (*is not available*) are AUDIX system fragments; the second fragment (*John Jones*) is the subscriber's recorded name fragment.

You have two options for recording subscriber name fragments:

● Record them yourself in a voice that sounds similar to the one in which the AUDIX system fragments were recorded.

   Subscriber names are recorded by logging in to the AUDIX system using your touch-tone telephone, accessing the administrative menu, identifying the subscriber's extension, and speaking the name in response to AUDIX voice prompts. You must perform these tasks from the extension that has announcement control permission.

● Have subscribers record their own name recordings.

   The name record by subscriber feature must be activated on the `system : appearance` form. When this feature is active, subscribers will be prompted the first time they log on to voice their name for use as a name fragment. However, if you choose to record subscriber names before they log in for the first time, they will not be prompted to record their name but will have the option of doing so using the AUDIX subscriber administration voice menu.

The procedure for changing subscriber name recordings is the same as for creating the recording: you simply record over the old recorded name using the same procedure, or if name record by subscriber is activated, subscribers can select options from the AUDIX voice menu to re-record their names. Typically you would do this when a subscriber has married and changed their name, for example, or when a subscriber is not satisfied with the pronunciation or quality of the name recording.

If you do not use the name record by subscriber feature (or want to record the names initially even though you will allow subscribers to change the recording), perform the following steps to create or change a subscriber's name recording:

1.   Dial the AUDIX system extension.

2.   Enter your extension (one that has announcement control permission) followed by the pound sign (#).

3.   Enter your password followed by the pound sign (#).

4.   Press **9** to perform system administration.

5.   Press **4** to record a subscriber's name.

6.   Enter the extension of the subscriber whose name you are about to record followed by the pound sign (#).

7.   Speak the subscriber's name clearly when prompted.

8.   Press **1** to signify the end of the recording.

9.   Choose one of the following to accept or delete the recording:

- Press either **2** or **3** to listen to your recording before approving or deleting it.

- Press either ***#** or **#** to approve the recording as is (the **#** command is used on the R1V8 standard user interface, and the ***#** command on the traditional user interface).

- Press ***D** to delete the recording.

10.   If you want to re-record the name, choose one of the following:

- If you approved the recording, repeat steps 6 through 9.

- If you deleted the recording, press **1**, then repeat steps 7 through 9.

11.   When you are finished with this subscriber, choose one of the following:

- Repeat steps 6 through 9 for each additional subscriber name to be recorded.

- Press ***R** to return to the activity menu, or just hang up to exit from the AUDIX system.

REMOVE SUBSCRIBERS

Removing a subscriber means deleting the subscriber's name and extension from the system directories and the subscriber's name fragment from the announcement data filesystem. You must remove subscribers any time they leave your company or no longer require AUDIX service. This process requires fewer steps than adding a subscriber because both the name fragment and the subscriber's name and extension records can be removed in one step.

Use the `subscriber : local` form to remove (delete) AUDIX subscribers. After the subscriber is removed, all records pertaining to the subscriber are deleted automatically by AUDIX audits that execute every Friday night. For more information about audits, see Chapter 8, *Alarms, Logs, and Audits*.

REASSIGN SUBSCRIBER DEFAULT PASSWORDS

If subscribers forget their passwords, you must reassign a default password to allow them to again log in to the AUDIX system. The subscriber should then change the default password to a unique, personal password. Use the `subscriber : local` form to reassign default passwords.

Although reassigning a default password is simple, it is time-consuming for you. Therefore, ask subscribers to choose passwords that are easy for them to remember (but not easy to decode by others).

UNLOCK LOCKED SUBSCRIBER LOGINS

For security purposes, the AUDIX system accepts only three unsuccessful login attempts per subscriber session (call to the AUDIX system) before disconnecting. The AUDIX system also monitors the number of unsuccessful consecutive login sessions per subscriber. If this number exceeds the number defined on the `system : appearance` form, the AUDIX system *locks out* that subscriber's login ID, thus preventing further system access. The subscriber cannot access the AUDIX system until you unlock the subscriber's login. Use the `subscriber : local` form to unlock subscriber logins.

| NOTE | If a subscriber is repeatedly being locked out of the AUDIX system, some unauthorized person may be attempting to tamper with that subscriber's mailbox. Report this to the subscriber's manager or to your company security office before unlocking the login ID. |

CHANGE A SUBSCRIBER'S NAME OR EXTENSION

Subscribers may request that their name be changed in the system directory for a variety of reasons, or they may be assigned a different extension. Use the `subscriber : local` form to change subscriber names or extensions in the AUDIX directory.

Alternatively, you may use ADAP to change subscriber information directly in the AUDIX directory database. Refer to *AUDIX Administration and Data Acquisition Package* (585-302-502) for more information about using ADAP.

If you change a subscriber's name, a new name fragment must also be recorded over the subscriber's existing name fragment to reflect this change. Refer to *Create and Change Subscriber Name Recordings* earlier in this chapter for instructions.

Names or extensions may be changed without disrupting mailing lists. A unique subscriber ID that is unrelated to the name or extension is associated with the subscriber's mailbox for lists and personal directories. For example, if Jane Doe is on a list and her name has been changed to Jane Smith, then owners of the list will find that Jane Smith is now on the list instead of Jane Doe.

LIST SUBSCRIBERS BY NAME OR EXTENSION

AUDIX subscribers and their extension numbers can be listed on your display screen, either alphabetically (by name) or numerically (by extension). When listed alphabetically, the assigned class of service name or number is also displayed for individual subscribers.

Use the `list : subscriber` form to list AUDIX subscribers alphabetically. Use the `list : extension : local` form to list AUDIX extensions numerically.

CHANGE SUBSCRIBER SERVICE OPTIONS

Service options that affect how the AUDIX system works can be changed for individual subscribers. These service options are initially set up when the subscriber is added to the AUDIX directory. Use the `subscriber : local` form to change subscriber service options.

Subscriber service options you can change include the following:

- Class of service — You can change the subscriber's class of service by entering a new class of service name or number for the subscriber or you can customize the subscriber's class of service by entering information directly in the class of service fields on the `subscriber : local` form, overriding the assigned class of service.

- Covering extension — You can change the subscriber's default covering extension that calls are directed to if the escape to attendant feature is used.

- Feature status — You can change the subscriber's outcalling permission status if outcalling is used, priority messaging permission status if priority messages are used, broadcast permission if broadcast messages are used, and community ID if the sending restrictions feature is used. Review the field descriptions for the `subscriber : local` form to determine which features available on your system can be set individually upon subscriber request (refer to the appropriate forms reference manual for your system).

- Text service machine and login ID — You can change a subscriber's text service machine and login ID on that machine.

CHANGE THE AUDIX EXTENSION LENGTH

This procedure, while rarely required, can save you from having to delete and re-enter all subscribers if your switch numbering plan changes. Changing the number plan requires that switches and their corresponding AUDIX machines are updated with the new extension numbers.

To change the AUDIX system extension length:

1. Change the extension length on the `system : translation : machine : audix/amis/call delivery` form to the new length and also change the start and end extensions to match the new length.

2. Restart the system using the `startup` form.

3. Change the system covering extension on the `system : appearance` form to the new number.

4. Change the AUDIX port extensions on the `system : translation : voice port` form to the new numbers.

5. List automated attendants with the `list : attendant` form and then use the `system : attendant` form for each attendant to change extensions to the new numbers.

6. Change subscriber extensions using the `change : extensions` form to add or delete the leading digit in compliance with the new switch numbering system. This form can also be used to change personal covering extensions.

7. If the outcalling feature is used but is limited to extensions that are on the switch, change the `maximum number digits` field on the `system : outcalling` form to the new extension length.

8. *If your AUDIX system is connected to the switch other than by a DCIU-SCI data link,* display the appropriate `system : translation : switch connection` form for your switch connection type and make any appropriate extension changes. For a switch connection type of `smsi`, `bri-api`, `sll`, or `stand-alone`, enter the new extension numbers (if needed) for the timeout treatment extension fields, automated attendant extension fields, and update the extensions in the `address ranges` fields (if needed).

9. Restart the system using the `startup` form.

10. Alert subscribers to this change since they will have to use more or fewer digits when logging in, addressing voice mail, and calling other extensions. They should also check their outcalling number; if it is an extension in the switch numbering system, they will have to re-enter it.

RESPOND TO SUBSCRIBER ISSUES

Subscribers occasionally need help with problems or answers to questions (they are not getting their messages and don't know why, for example). They may report problems with AUDIX service, or make simple requests (such as wanting name addressing instead of extension addressing).

In either case, it is up to you to resolve issues that arise. As you become familiar with the system, you will become more adept at relating the sometimes inexact or hazy descriptions of problems brought to you by subscribers with the correct diagnoses and solutions. Suppose a subscriber comes to you, for example, saying that he or she is trying to send a message to another subscriber but the AUDIX system has indicated that the message is undeliverable. Because you know the system so well, you might conclude that the recipient's mailbox is full. The solution is for the recipient to delete any unnecessary messages.

This simple example illustrates the kind of situation you might experience. To simplify dealing with subscribers, you should get in the habit of using the Activity Log to research subscriber-reported problems. For instructions on using the Activity Log, see Chapter 8, *Alarms, Logs, and Audits*.

Subscriber Communication Channels

You should develop a method by which subscribers may communicate with you. The two obvious possibilities are in writing and by phone. While the phone may be more convenient, asking subscribers to write things down allows you to keep a record of the communication.

A sample *change-request* form is shown in Appendix A, *Communicating with Subscribers*. You might wish to use a similar form within your company. Such a form has two functions:

- It allows subscribers to request (in writing) changes they would like made in their service attributes.
- It allows subscribers to report complaints and problems.

The other avenue for communication might be by telephone via the AUDIX system. You could set up a special mailbox for yourself specifically for AUDIX system issues. Subscribers could then call this number any time to express an opinion, idea, or issue about the AUDIX system. You will have to interact with subscribers on a regular basis. Therefore, choose a method for handling their issues that suits you as well as meets their needs.

Subscriber-Reported Problems

Occasionally subscribers experience genuine problems with the AUDIX system, such as noisy or garbled messages. Encourage subscribers to save AUDIX messages which might indicate a switch or system problem. You can then instruct them how to forward bad messages to a special services mailbox to assist with problem diagnosis (see the *Your Responsibility as an Administrator* section in Chapter 5 for more information on working with AT&T services personnel).

7. Ongoing Filesystem Administration

This chapter describes filesystem administration that is performed on an ''as required'' basis during normal AUDIX system operation. Information is organized as follows:

OVERVIEW

Ongoing filesystem administration includes activities that you perform as a part of your daily or weekly routine and other activities that you need to perform only when circumstances dictate action on your part. For example, increases in the number of subscribers and system usage will require that you regularly check the available free space within the filesystems and increase them as necessary.

HOW AUDIX FILESYSTEMS ARE ORGANIZED

AUDIX software is organized into filesystems that contain the system software, subscriber information, system announcements, and voice messages that compose the AUDIX system. Filesystems are stored on your AUDIX machine's hard disks. Many of these filesystems will need to be expanded in size as you add subscribers and as people start to use the AUDIX system. Maintaining a sufficient amount of free space for AUDIX filesystems is one of your primary responsibilities as an AUDIX system administrator.

In order to properly administer your AUDIX machine and keep it running efficiently, you must understand three basic concepts about filesystem organization:

- Volumes — The physical disks upon which information is stored

- Filesystems — Organized collections of information (files) on the volumes

- Files — Information stored within each filesystem

To understand these concepts, think of a filing cabinet, its drawers, and the files within each drawer as shown in Figure 7-1, *Example of Volume, Filesystems and Files*. In this analogy, the filing cabinet represents an AUDIX system volume. It is divided into drawers (or filesystems), each of which contains different kinds of information. Filing cabinet drawers perform the same organizational function in the filing cabinet as filesystems perform within a volume. Finally, each drawer in the cabinet contains files. These files hold data of a similar topic and function in the same way as software files within the filesystems.
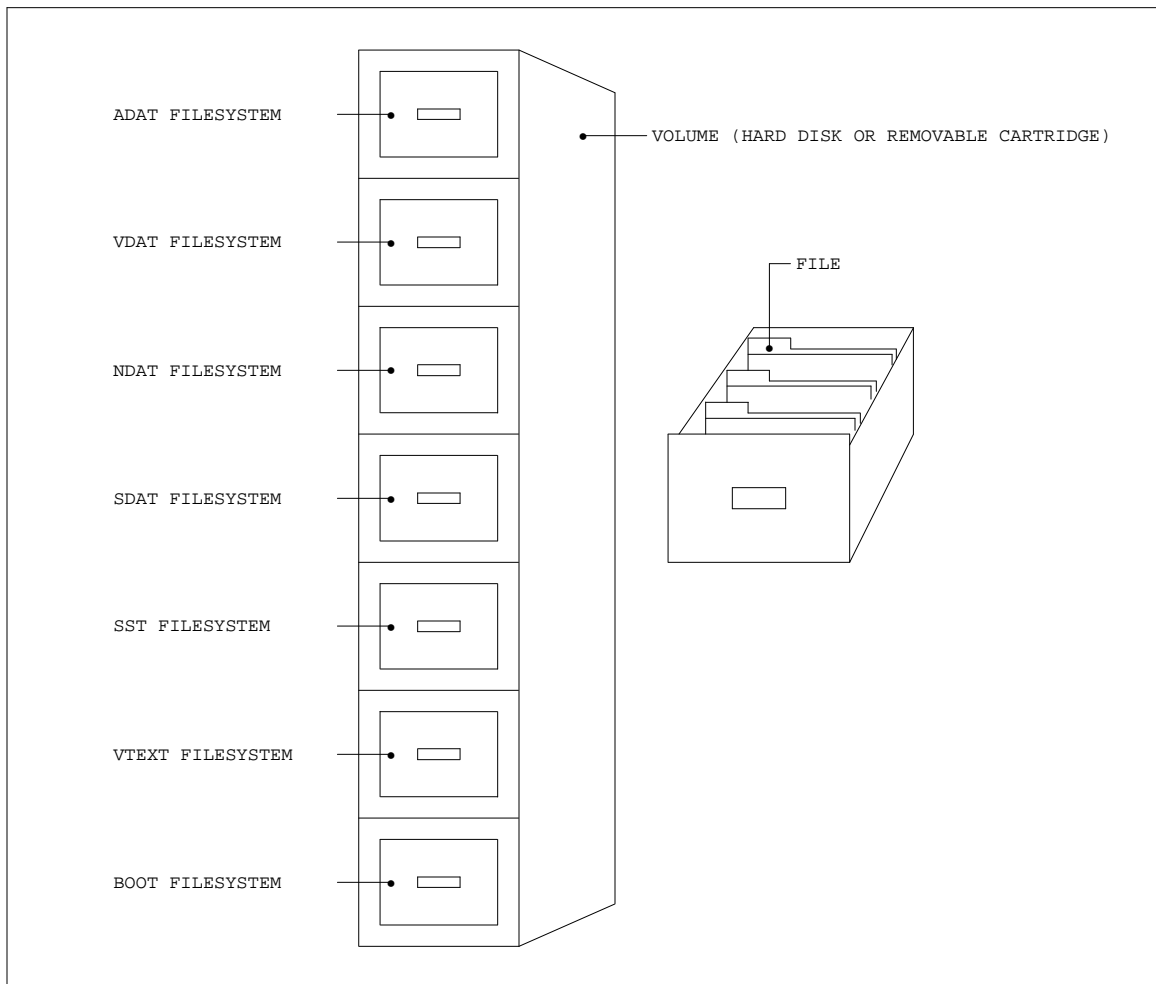
Figure 7-1. Example of Volume, Filesystems, and Files

Volumes

Volume is the software term for a disk. There are two kinds of disks in the AUDIX system — hard (or fixed) and removable. A hard disk is a permanent disk that is used to store AUDIX filesystems. A removable disk is a cartridge which can be removed from the disk drive, used for backing up filesystems and installing new software on the AUDIX system.

Volumes are identified by assigned names which must be from one to seven alphanumeric characters in length. Naming conventions are based on the controller number and device number associated with each disk as a result of its specific hardware location and wiring. A controller is a printed circuit board that controls the reading and writing of disks. Device is another name for the disk.

In AUDIX Large systems, there are two controllers, each of which can support up to four devices. AUDIX-L systems require a hard disk in the controller 0, device 0 location and one removable cartridge in the controller 0, device 1 location. Up to six additional hard disks (for a total of seven) can be configured as required in controller 0, device locations 2 and 3, and in controller 1, device locations 0 through 3.

AUDIX one- and two-cabinet systems have a single controller that can support up to seven devices. These systems require a hard disk in the controller 0, device 0 location and a removable cartridge in the controller 0, device 1 location. AUDIX one-cabinet systems can support two additional hard disks configured in controller 0, device locations 2 and 3. AUDIX two-cabinet systems can support three additional hard disks in the upper cabinet in controller 0, device locations 4, 5, and 6.

Following are some examples of the conventions used in naming AUDIX system volumes (disks). Notice that the name disk00 is used because its location is controller 0, device 0. Likewise, a disk at controller location 1, device location 2 is named disk12. All of the disks mentioned throughout this document are named according to these conventions. For example, disk00 is controller number 0, device number 0; disk01 is controller number 0, device number 1; and disk10 is controller number 1, device number 0.

References to controller 1 locations (for example, disk10) apply only to AUDIX-L systems. AUDIX one- and two-cabinet systems have only one disk controller at controller location 0; disks may be named disk00 to disk06.

Removable cartridges named as follows:

- The naming convention for the removable cartridge that you receive from the factory is based on the release level and the version of the software contained on the volume.

- The naming convention for backup volumes is determined by you: names for backup cartridges could follow a numbering sequence (for example, back01, back02) or use the date of the backup (such as b010192, b020192).

Filesystems

Each volume can hold one or more *filesystems*. A filesystem is a collection of files and their associated directories. Many AUDIX system administrative activities involve filesystems. For instance, filesystem information may be backed up, recovered, and resized during the course of AUDIX system administration. Filesystems can also grow to the limits of the allocated disk space or can be administered incorrectly to be larger than they need to be, wasting disk space and decreasing overall system efficiency. Therefore, it is important to understand filesystems.

Each filesystem has a name assigned which must be from 1 to 10 characters in length. Filesystem names are based on the *volume name.filesystem name* format. For example, the software cartridge delivered from the factory contains a boot filesystem named *r:v.boot_f*. The r:v is the release level and version of the cartridge (the volume name) and boot_f is the boot filesystem name.

Each filesystem has a *type* which indicates its function and/or its file organization. There are seven filesystem types in the AUDIX system as described in Table 7-1, *Filesystem Types*.

Table 7-1. Filesystem Types

Filesystem Type	Description
adat	The announcement data filesystem contains the system announcements. You may want a second copy of this filesystem if you intend to customize your system announcements.
vdat	The voice data filesystem contains voice data such as subscriber mailboxes and delivery records.
ndat	The names data filesystem contains all subscriber names. If the AUDIX machine is part of a network of AUDIX machines, names of remote subscribers and remote machines are also included.
sdat	The system data filesystem contains subscriber profiles, message headers, and the subscriber directory.
sst	The system status filesystem contains system status information such as traffic and call detail recording (CDR) data, alarm log, error log, and administration log.
vtext	The voice text filesystems hold files containing voice text or the recorded voice messages. There can be up to 10 voice text filesystems among all the volumes.
boot	The boot filesystem holds the system software, the administration and maintenance forms, and the system configuration.

Table 7-2, *Sample Filesystem Names*, lists some examples of the ways in which these filesystem types are named in a typical AUDIX system.

Table 7-2. Sample Filesystem Names

Filesystem Name	Type	Purpose
disk00.boot_f	boot	boot filesystem
disk02.boot_e	boot	backup boot filesystem
disk00.sd	sdat	system data filesystem
disk00.vd	vdat	voice data filesystem
disk00.ss	sst	system status filesystem
disk00.vm0	vtext	first voice filesystem
disk02.vm1	vtext	second voice filesystem
...	...	...
disk06.vm9	vtext	tenth voice filesystem
disk00.ana (or anp)	adat	primary announcements
disk02.ans	adat	secondary announcements
disk00.nm	ndat	subscriber and machine names
disk02.nm2	ndat	backup names filesystem

Notice that the `vtext` filesystems are stored on many volumes, while the active and backup filesystems such as `boot,` `adat` (if you have any customized announcements), and `ndat` are on different volumes. Filesystems should be distributed across different disks according to the number of hard disks in your system; refer to *AUDIX System Description* (585-305-201) for more information.

To access the contents of a filesystem, you must first mount it. In our file cabinet analogy, this corresponds to unlocking one of the cabinet drawers. To mount a filesystem, you must assign a mount point — a name associated with a particular filesystem which becomes the first name in the path to the files within that filesystem. When referencing a particular file, the mount point must preface the file name and both names must be preceded by a / (slash). For example, you must enter **/vd/mb** to access a file named *mb* in the voice data filesystem whose mount point is *vd*.

Mount points are used by the system software to access files. Since you might move a filesystem from one volume to another volume, the mount points allow the software to reference the files without having to specify the volume name. So, if a filesystem is always mounted on the /sd mount point (for example), the software can access the location of /sd/file without knowing on which volume the filesystem resides.

Table 7-3, *Filesystem Naming Conventions*, shows the naming conventions used for each of the standard AUDIX filesystems and their software mount points. Notice that the filesystem name includes the volume name (for example, *disk00*.sd), while the mount point typically includes part of the filesystem name (such as /boot).

Table 7-3. Filesystem Naming Conventions

Filesystem Name	Mount Point
disk00.sd	/sd
disk00.ss	/ss
disk00.vd	/vd
disk00.boot_f	/boot
disk00.vm0	/vm0
diskXY.vm1	/vm1
diskXY.vm2	/vm2
...	...
diskXY.vm9	/vm9
disk00.ana *or*	/anp
disk00.anc *or*	/anp
disk00.anp	/anp
disk00.ans	/ans
disk00.nm	/nm

Active System Filesystems

Active system filesystems are those filesystems currently in use by the AUDIX system. You can see which filesystems are active by displaying the `system : filesystems` and `system : announcement : filesystems` forms. Each field lists the name of the associated active filesystem (in a *volume.filesystem* format). Because the filesystem types are implicit in the filesystem names, they are not listed on this form. Each field is preceded by the kind of filesystem (for example, system data) and the associated mount point (for example, /sd).

Announcement Filesystems

Announcements are voiced (spoken) prompts and messages that subscribers hear while using the AUDIX system. Each of these announcements is identified by a number. Announcements are made up of a maximum of nine *fragments*. A fragment can consist of a word, phrase, or sentence. Fragments are used either individually or collectively in composing announcements. They are also identified by number, but usually not the same numbers as those associated with the announcements.

An *announcement set* is a filesystem that contains all the announcements (prompts and other system messages) that may be encountered by the user. The *active* announcement set is the one that is heard by anyone who accesses the AUDIX system. Unless you wish to customize your system announcements, you typically have only one announcement filesystem on your system.

Customizing Announcements

If you want to change (customize) any of your system announcements, you must first make a copy of the active announcements and designate the ''working'' copy as the *administrative* announcement filesystem (you cannot make changes to the active announcement set). The two announcements you will most likely want to change are the default Call Answer greeting and the default Voice Mail greeting.

- *Default Call Answer Greeting:* When someone calls a subscriber who is unavailable and the call is redirected to the AUDIX system, the caller hears the subscriber's personal greeting if one has been recorded. However, if a personal greeting was not recorded or is not active, the caller hears the default system greeting. This greeting begins with announcement 36, which contains only fragment number 43, ''*Your call is being answered by AUDIX*''. To customize this announcement (for example, with your company name), you would just re-record fragment number 43.

- *Default Voice Mail Greeting:* When a subscriber calls the AUDIX system directly, the subscriber is greeted by fragment number 287, *Welcome to AUDIX*. To customize this announcement (for example, with your company name), you would just re-record fragment number 287.

Many system announcements and fragments changed for the R1V8 software release; however, the fragments listed above are the same from release to release. If you already customized these fragments before you upgraded to R1V8 software, you should be able to copy fragments 43 and/or 287 into the new R1V8 announcement set using the `system : announcement : detail` form without causing any unintended effects.

Other system announcements and fragments may have changed between releases. The procedures for customizing system announcements and re-recording fragments are covered in the appropriate announcement customization guide for your system:

- *AUDIX Announcement Customization — R1V2 through R1V7* (585-305-531)

- *AUDIX Announcement Customization — Standard User Interface* (585-305-532) (R1V8)

- *AUDIX Announcement Customization — Traditional User Interface* (585-305-533) (R1V8)

WARNING

If you decide to customize your system announcements, you must be extremely careful and precise. If you make a mistake, the resulting announcements could be erroneous, and straightening out mistakes can be frustrating and time-consuming. It is strongly recommended that you do not attempt to modify any announcements without the help of an AT&T representative (you may be charged for this service).

Announcement Sets and Names

The announcement filesystems changed for the R1V8 software release. This section lists the names of the new announcement sets and summarizes the differences between releases and versions.

R1V8: Two versions of the AUDIX system announcements are available with R1V8 software:

- *Standard* — The default version of system announcements on R1V8 systems, used to provide the Streamlined User Interface. This version is typically named `disk00.ana` on a new system or `ana.adat` on a generic program cartridge. The standard announcements are slightly more concise than the traditional set and are consistent with the standard announcement set available with the DEFINITY AUDIX voice mail system.

- *Traditional* — The traditional (abbreviated) version of system announcements designed to make upgrades to the R1V8 software release as transparent as possible for subscribers accustomed to using an earlier AUDIX software release. This version is named `disk00.anc` on a new system or `anc.adat` on a generic program cartridge. However, if an AUDIX system is upgraded to R1V8 software from an earlier release, the announcement filesystem will use the same name and disk location as the previous announcement set (for example, `disk02.anp`).

  The announcements in the traditional announcement set are designed to imitate (as closely as possible) the announcements that were available with earlier AUDIX systems. The only differences between this and the *abbreviated* (or terse) version of AUDIX R1V2 through R1V7 system announcements are those necessitated by changes to the dial plan (the keystrokes users must press).

The easiest way to tell which version of R1V8 announcements is installed on your system is to record any AUDIX message and listen to the prompt. If it tells you to press (#) to approve the message, the standard announcement set is installed. If it tells you to press (*) (#), the traditional announcement set is installed.

R1V2 through R1V7: Two versions of the AUDIX system announcement sets were available prior to the R1V8 software release:

- *Abbreviated* — The ''terse'' version of system announcements. This was the default announcement set shipped with R1V2 through R1V7 systems. It was typically named `disk00.ana` on a new system or `ana.adat` on a generic program cartridge.

- *Verbose* — The ''long'' version of system announcements. This announcement set was optionally available for R1V2 through R1V7 systems. It was typically named `disk00.anp` on a new system or `anp.adat` on a generic program cartridge.

The abbreviated announcement set contains the same announcements as the verbose version, but individual announcements use fewer words to convey the same message. For example, announcement a258 accesses fragment 30. The verbose version of this fragment is, *''To change this message before it's delivered, press one.''* The abbreviated version is simply, *''To change, press one.''*

No matter what version of AUDIX system announcements are installed, you will work with the three filesystems listed in Table 7-4, *Announcement and Name Filesystems*, to record announcement or name fragments.

Table 7-4. Announcement and Name Filesystems

Filesystem	Function
`names`	Contains all voiced names, normally the names of all subscribers. If your system is a part of a network of AUDIX machines, this filesystem also contains names of both local and remote subscribers and networked machines. There may be up to 32,000 subscriber names and 101 machine names. A backup copy of this filesystem should be made periodically, or is made automatically each Sunday if administered.
`active announcements`	Contains the active announcements (those that are heard by anyone who accesses the AUDIX system).
`administrative announcements`	Contains the administrative announcements. (You only need an administrative copy if you plan to customize your system announcements.)

Filesystem Interactions

During normal operation, AUDIX filesystems work independently of each other under the direction of a set of software managers. These managers, in tandem with hardware and firmware managers, allow the files, filesystems, and system hardware to work smoothly together. However, because filesystems are handled separately, it is possible for different filesystems to contain conflicting information. For example, if a subscriber is removed from the AUDIX system, other filesystems may contain messages addressed to that subscriber, or mailing lists may include the deleted subscriber's name.

To reconcile possible conflicts among filesystems, software programs called audits run each night to check for inconsistencies and where possible update information in filesystems to correct problems. For example, audits remove all references to a deleted subscriber, including deleting the subscriber's name from mailing lists and canceling message deliveries to that subscriber. System audits are described in Chapter 8, *Alarms, Logs, and Audits*.

MAINTAIN FILESYSTEM SIZES

Since most system filesystems will be required to store more data as you add subscribers and they start using the system, you must monitor these filesystems to ensure that sufficient free space is available. Filesystems to monitor are described in Table 7-5, *Filesystems to Monitor for Size*.

Table 7-5. Filesystems to Monitor for Size

Filesystem Type	Maintenance Requirements
vdat	As subscribers create, send, listen to and delete messages, the data in this filesystem may increase and you may need to increase the filesystem size.
ndat	As you record machine and subscriber name fragments, the amount of data in this filesystem may increase and you may need to increase the filesystem size.
sdat	As you add subscribers and as messages are created, the data in this filesystem may increase and you may need to increase the filesystem size.
sst	As you add subscribers, as system logs grow, and as traffic and call detail recording (CDR) data collection occur, the data in this filesystem may increase and you may need to increase the filesystem size.
vtext	As messages are created and stored, the data in these filesystems may increase and you may need to increase the filesystem sizes or create additional voice text filesystems.

During ongoing administration, you will need to routinely evaluate the ways in which your system message space (the voice text filesystems) and system filesystem space (voice data, system data, names data, and system status filesystems) are being used.

- When the STATUS line indicates a system filesystem running low on space, you should increase the size of that filesystem.

- When the STATUS line indicates voice text filesystems running low on space, you may either increase the size of the existing filesystems or you may create additional filesystems (up to a maximum of 10).

Perform the following tasks to monitor filesystem sizes and identify problems. These tasks show how to evaluate filesystem space, determine when a threshold exception has occurred, determine which filesystem has caused the exception, and take appropriate action to correct the problem.

Task 1: Check for Threshold Exceptions

Monitor the `thresholds` field on the STATUS line at the top of the administrative forms. This field displays the word `none` if no exceptions exist. It may take up to 30 minutes for a threshold exception to be reported or for the exception to clear if sufficient space is freed up in the filesystem. When a threshold exception occurs, the `thresholds` field displays one of the messages described in Table 7-6, *Filesystem Threshold Exceptions*.

Task 2: Display Threshold Exceptions

If the `filesystem` message is displayed in the `thresholds` field on the AUDIX STATUS line, you must determine which filesystem has reached its limit and then take corrective action. Use the `system :` `thresholds` form to display AUDIX system thresholds and to determine which filesystem has reached its threshold limit.

If the `cdr` message is displayed in the `thresholds` field, use the `system : cdr` form to display CDR thresholds.

The messages `lower`, `middle`, and `upper` refer to voice text (vtext) filesystem space. Refer to the following table for resolution procedures.

Table 7-6. Filesystem Threshold Exceptions

Message	Description
`lower`	This indicates that a lower message space threshold has been exceeded within the total message space available across all voice text filesystems. If you are using the default lower threshold that was delivered on the `system : thresholds` form, this means that 75% of the message space available has been used. Ask subscribers to delete all unnecessary messages from their mailboxes.
`middle`	This indicates that a middle message space threshold has been exceeded within the total message space available across all voice text filesystems. If you are using the default middle threshold that was delivered on the `system : thresholds` form, this means that 85% of the message space available has been used. Ask subscribers to delete all unnecessary messages from their mailboxes.
`upper`	This indicates that an upper message space threshold has been exceeded within the total message space available across all voice text filesystems. If you are using the default upper threshold that was delivered on the `system : thresholds` form, this means that 95% of the message space available has been used. You should have already asked subscribers to delete unnecessary messages when each of the other two thresholds were reached. Therefore, it is probably useless to ask subscribers to delete additional messages again. Instead, you should increase the size of all existing voice text filesystems or add a new voice text filesystem. You also might consider decreasing the retention times on the `cos` forms to allow the system to automatically delete messages sooner.
`filesystem`	This indicates that more than 85% of the space available within at least one system filesystem has been used: If the `filesystem` message is displayed alone, one of the system filesystems has exceeded its threshold limit. In this case, you must determine which filesystem (system data, voice data, names, system status) has reached its threshold limit and increase that filesystem's size accordingly. Use the `system : thresholds` form to determine which filesystem is causing the threshold report. If the `filesystem` message is displayed with one of the voice text threshold exception messages (lower, middle, or upper), the voice text filesystems *and* one of the other system filesystems have exceeded their thresholds. In this case, increase the system filesystem's size, then respond to the voice text threshold exception message as described above.
`cdr`	This indicates that more than 75% of the maximum number of records specified on the `system : cdr` form have been used. You need to offload collected CDR data to the CDR PC. If this is a chronic problem, you may need to gather data more often from the PC, or increase the maximum records allowed and possibly increase the size of the system status `sst` filesystem.

INCREASE FILESYSTEM SIZES

The AUDIX system filesystems are shipped on the AUDIX hard disk(s) with their sizes already adjusted for a typical system's needs. Normally these initial sizes are adequate for most customer configurations. However, you should recalculate your filesystem sizes after you administer your initial subscriber base in case your system configuration is *not* typical. For example, if you have many subscribers or voiced-in names, you may need to increase the size of some of your filesystems as described in this section.

In addition, after the system has been in use for a while, the system status line may report a threshold exception. If you have determined that a filesystem has reached its threshold, you can increase its size as described below. If voice text filesystems have exceeded their threshold limits, you can increase their sizes as described below or add another voice text filesystem to correct the problem.

NOTE	If you increase voice text filesystems, remember that all voice text filesystems should be the same size. Refer to the *Add New Voice Text Filesystems* section for more information about when to increase voice text filesystem sizes and when to add new voice text filesystems.

Perform the following steps to increase filesystem sizes:

1. Before you can increase the filesystem sizes, you must determine what the new sizes should be. This is done by updating AUDIX system limits information to reflect your actual operating requirements. Based on your updated information about how the system is used, the AUDIX system recalculates the recommended filesystem sizes for you. Use the `system : limits` form to recalculate recommended filesystem sizes.

    You should verify that current values accurately represent your system's characteristics and change any values that are no longer accurate. Consider reasons why the threshold exception may have occurred and make changes in your calculations based upon these possible reasons. For example, if you have just added 200 new subscribers to the system and a filesystem threshold exception occurs, the probable reason for the exception is that one or more of the active filesystems could not accommodate the new subscribers. Keep in mind that one inaccurate value could affect the resulting filesystem size recommendations.

2. Use the `system : filesystems` form to determine on which volume a filesystem resides. Use the `list : volume names` form to check the amount of available free space on that volume to ensure that the resized filesystem will still fit on that disk. If there is insufficient space on the volume, you will have to make sure that the amount you increase the filesystem size does not exceed the available free space on the volume.

    If this does not seem adequate to meet the filesystem size recommendations, check the free space on another volume. If there is another volume with substantial free space, copy one or more filesystems from the more full volume to the less full volume as described in the *Move Filesystems to a Different Volume* section. If no volume has sufficient space for storing the filesystems at their recommended sizes, talk to your management and your AT&T representative about adding more disk storage to your AUDIX system.

3. As with most filesystem-related administrative activities, the system must be shut down before you can increase filesystem sizes. Use the `shutdown` form to perform a camp-on administrative shutdown of the system.

You should provide subscribers with some notification prior to the time you shut the system down. You might establish and then publish a schedule of regular shutdowns, for example, or you may send out a broadcast message, login announcement, or desk-to-desk notification prior to each shutdown.

4. Once you have calculated the recommended sizes for the filesystems and have shut the system down, you can increase filesystem size for the appropriate filesystems using the `filesystem : detail` form. Have on hand the recommended sizes and the available free space on the volume before beginning this part of the procedure.

> **NOTE** If the file redundancy feature is used, the redundant filesystem is automatically increased when a filesystem size is increased.

5. Use the `startup` form to restart the AUDIX system.

    After the system is restarted, the `thresholds` field on the `AUDIX STATUS` line should display the word `none`, indicating that filesystem sizes are now adequate to meet your needs. If one of the message space threshold exception messages is displayed instead, you may need to add another voice text filesystem to clear the message space threshold exception. If this is required, see the following *Add New Voice Text Filesystems* section.

ADD NEW VOICE TEXT FILESYSTEMS

As subscribers begin to use the AUDIX system, the voice text (vtext) filesystems (those containing the subscribers' messages) begin to fill up. This is especially true when subscribers fail to delete old or unnecessary messages from their mailboxes. Asking subscribers to delete messages should be your first plan of action in dealing with full vtext filesystems. If this fails, however, you may increase the vtext filesystems (see the *Increase Filesystem Sizes* section) or add a new vtext filesystem. You could also decrease retention times on the `cos` forms to allow the system to automatically delete messages sooner if that is acceptable to your user population.

You may have up to 10 vtext filesystems. Because adding filesystems does not require a system shutdown, it is relatively easy to add another vtext filesystem when one becomes full. Voice text filesystems may be stored on any of your volumes and should be spread out among all of your available volumes. This safety measure insures against losing all vtext messages should a problem occur on one of the hard disks.

For maximum efficiency, vtext filesystems should not exceed 2000 blocks on the smaller disk drives or 3500 blocks on 40-hour (or greater) disk drives. Access time is greatly slowed if filesystems exceed these limits. When a vtext filesystem approaches 2000 or 3500 blocks (depending on your disk drive size), create another 2000- or 3500-block vtext filesystem instead of expanding the size of existing vtext system(s). The AUDIX system delivers messages to the filesystem that has the most space available at the time.

While you can add new voice text filesystems, you cannot delete them (except by replacing one with a new empty filesystem). In addition, it is better to have up to 10 small vtext filesystems rather than a few large ones. Five vtext filesystems of 3500 blocks, for example, is preferable to one vtext filesystem of 10,000 blocks. This is because if one vtext filesystem is damaged or corrupted, you will not lose *all* the voice messages. If you have 10 voice text filesystems of 3000 blocks that become full, increase all 10 if necessary, but keep them the same size. This helps minimize the voice text information that is lost should

you experience a problem with one of the vtext filesystems.

Perform the following steps to add a new voice text filesystem:

1. Use the `filesystem : detail` form to create a new voice text filesystem. The new voice text filesystem should be the same size as your existing voice text filesystems.

2. Activate the new voice text filesystem using the `system : filesystems` form. This makes it available for message storage. Messages will then be directed to this voice text filesystem because it has the most free space.

3. The changes you made in the previous tasks are automatically written to the configuration file in your active boot filesystem, `disk00.boot_f`. These updates must also be made to your backup boot filesystem, to ensure that both boot filesystems are current. Use the `filesystem : update configuration` form to update the backup boot filesystem (normally `disk02.boot_e`) from the contents of your active boot filesystem (`disk00.boot_f`).

MOVE FILESYSTEMS TO A DIFFERENT VOLUME

When space on one volume fills up, it may be necessary to move one or more filesystems to a volume with more available free space. This procedure will not be required often, if at all. However, if you have a substantial number of subscribers that use the AUDIX system heavily, this procedure may be necessary. Also, access time is reduced if frequently accessed filesystems are spread evenly across the available volumes. Refer to *AUDIX System Description* (585-305-201) for more information about recommended filesystem distribution.

Perform the following steps to move filesystems to another volume:

1. As with most filesystem-related administrative activities, the system must be shut down before you can copy most filesystems. Use the `shutdown` form to perform a camp-on administrative shutdown of the system.

   You should provide subscribers with some notification prior to the time you shut the system down. You might establish and then publish a schedule of regular shutdowns, for example, or you may send out a broadcast message, login announcement, or desk-to-desk notification prior to each shutdown.

2. Copying a filesystem to another volume is the same as backing up a filesystem. However, filesystems are usually backed up on a removable cartridge and in this procedure the filesystem will be copied to another hard disk (one that has a substantial amount of free space).

   Use the `system : filesystems` form to list active filesystems and the volume where each resides. Use the `filesystem : copy` form to copy filesystems from one volume to another.

3. Use the `system : filesystems` form to activate the new filesystem. This replaces the currently active filesystem with the copy.

4. The changes you made are automatically written to the configuration file in your active boot filesystem, `disk00.boot_f`. These updates must also be made to your other boot filesystem (normally `disk02.boot_e`) to ensure that both boot filesystems are current. Use the `filesystem : update configuration` form to update the backup boot filesystem from the contents of your active boot filesystem (`disk00.boot_f`).

5. Now that the new copy of the filesystem is activated, the original filesystem should be deleted to allow its current storage space to be reused. Use the `filesystem : detail` form to delete the old filesystem.

6. Use the `startup` form to restart the AUDIX system.

    When the AUDIX system has restarted, check your changes on the `system : filesystems` form, which lists active filesystems and the volume where each resides.

BACK UP FILESYSTEMS

If you use the filesystem redundancy feature, you have an exact duplicate of your filesystems at all times and do not need backup copies of your filesystems on removable cartridges. Even without file redundancy, key filesystems are normally backed up on removable cartridges automatically by the AUDIX system on a regular basis, so you rarely need to manually back up your filesystems.

However, there are circumstances where you may need to manually back up pertinent filesystems, such as after making major system changes, after entering large numbers of new subscribers, when you are experiencing machine problems and do not want to risk losing information that was entered since the last automatic backup.

Because of the types of data stored in the different filesystems, not all system filesystems are normally backed up. All that is required to recover from a disk crash or other major problem is a current copy of the system data filesystem, current version of the announcement data filesystem (only necessary if you customize announcements), and a copy of the names filesystem. With these filesystem backups, you can recover all the necessary filesystem data except the messages in the voice text filesystems. Backup requirements for individual filesystems are summarized in Table 7-7, *Filesystem Backup Requirements*.

Two or more removable cartridges should have arrived with your AUDIX system: one or two containing system programs, and one or two blank cartridges (the number of cartridges depends on the size of your removable-cartridge drive). The removable cartridge(s) containing the system programs should be stored safely in case any system files on the hard disk drive(s) are erased or damaged.

A blank, removable cartridge should be installed at all times in the removable-cartridge drive (controller 0, drive 1) for backing up the system data (`sdat`) filesystem; this backup runs automatically each night. You may also use this removable cartridge to manually back up filesystems (if there is enough room on it for your filesystem backups) or you use another blank cartridge for backups. More than one removable cartridge is recommended, especially if you make additional backups. If you do have more than one backup cartridge, rotate these cartridges regularly to help keep them from wearing out.

Table 7-7. Filesystem Backup Requirements

Filesystem Type	Backup Requirements
adat	The announcement data filesystem does not require a backup unless you have customized announcements. If so, copy this filesystem to a removable cartridge after you make changes. If you do not have customized announcements, you already have a backup on the original factory disk.
vdat	The voice data filesystem does not require a backup because this filesystem is constructed automatically from information in the system data filesystem.
ndat	The names data filesystem contains subscriber name fragments and is **backed up automatically each week** if administered to do so on the system : announcement : filesystems form. After you record a large number of subscriber names, you may want to back this filesystem up immediately on either a different hard disk or on a removable cartridge.
sdat	The system data filesystem contains information that must be recovered should you lose filesystem information. Because of the importance of this data, the system data filesystem is **backed up automatically each night** at 10:00 p.m. by the AUDIX system. Thus, you do not need to manually back up this filesystem unless your system is experiencing problems and you want to ensure that a current copy is stored on a removable cartridge.
sst	The system status filesystem does not require a backup. If you need a history of AUDIX system traffic information, use the AUDIX Administration and Data Acquisition Package (ADAP) to capture this data on a periodic basis.
vtext	The voice text announcement filesystems are not normally backed up because of their size and the transient nature of their contents.

Back Up System Filesystems

Use the following procedure for backing up the system data, voice data, and system status filesystems. Do *not* use this procedure for backing up the announcement data filesystem or the names data filesystem (instructions for backing up those filesystems are described later in this section).

Perform the following steps to back up system filesystems:

1. Locate the filesystem to copy. Use the system : filesystems form to identify the volume containing the active system filesystems.

2. Install a removable cartridge.

   See the *Install a Removable Cartridge* section for instructions on performing this step. Note that separate instructions are provided for AUDIX-L systems and for AUDIX one- and two-cabinet systems. Follow the appropriate procedure for your system.

3. Equip the removable cartridge using the maintenance : dbp : equip form.

4.   When the cartridge is equipped, you must shut the system down before you can back up the filesystems. Use the `shutdown` form to perform a camp-on administrative shutdown of the system.

5.   The filesystem backup is performed by simply copying the target filesystem to the removable cartridge using the `filesystem : copy` form.

6.   Next, list the filesystem names on the backup disk using the `filesystem : list` form. Verify that the new filesystem name is included in the list of filesystems.

7.   Use the `startup` form to restart the AUDIX system.

Back Up the Announcement Data Filesystem

Back up procedures for the announcement data filesystem are similar to the procedures for the other filesystems, but you do not have to shut the system down to back up the announcement data filesystem. You normally back up your announcements only if you have customized them since the generic program cartridge already has a copy of the regular system announcements.

You should back up your announcement data filesystem each time sufficient changes are made to the filesystem that would be difficult and time-consuming to repeat. To back up the announcement data filesystem, do the following steps.

1.   Use the `system : announcement : filesystems` form to display the active and administrative versions of the announcement data filesystems. If you followed the procedures in the announcement customization guide for your version of system software, both versions should be identical. Write down the name of the administrative announcement filesystem (this is the one you will copy).

2.   Install a removable cartridge.

     See the *Install a Removable Cartridge* section for instructions on performing this step. Note that separate instructions are provided for AUDIX-L systems and for AUDIX one- and two-cabinet systems. Follow the appropriate procedure for your system.

3.   Use the `maintenance : dbp : equip` form to equip the removable cartridge.

4.   The filesystem backup is performed by simply copying the target filesystem (the administrative announcement set) to the removable cartridge using the `filesystem : copy` form.

5.   Next, list the filesystem names on the backup disk using the `filesystem : list` form. Verify that the new filesystem name is included in the list of filesystems.

Back Up the Names Data Filesystem

The names data filesystem is backed up automatically each Sunday. If you have recorded a large number of names between backups, you may want to back up this filesystem manually using the `system : announcement : filesystems` form.

INSTALL A REMOVABLE CARTRIDGE

The procedure for installing a removable cartridge is different for an AUDIX one- or two-cabinet systems than for an AUDIX-L system. Follow the appropriate procedure for your system.

AUDIX One- and Two-Cabinet Systems

Two types of removable cartridge drives (RCDs) are used on AUDIX one- and two-cabinet systems. Early systems use a 20-Mbyte drive, identified by its flip-down lid and lid latch. Newer systems use a 50-Mbyte drive; this drive has a button to push for simpler cartridge handling. Follow the steps that apply to the RCD in your system.

1. If there is an equipped cartridge in the drive, use the `maintenance : dbp : unequip` form to unequip it (take it out of service). Specify *disk device number* = 1 and press ⌈CHANGE⌉. This form should cause the RCD to spin down.

2. Remove the AUDIX cabinet front cover if needed. On a two-cabinet system, the RCD is always in the lower cabinet.

3. Locate the removable cartridge drive (on the far right, protruding through the metal screen). If the green light is blinking, it indicates the cartridge is still spinning down.

4. *For a 50-Mbyte drive:*

    a. If the green LED is steadily lit, press the start/stop button (the left-hand button) to spin down the drive.

    b. Once the green LED goes out, press the eject button (the right-hand button) to eject the cartridge. Go to step 6.

5. *For a 20-Mbyte drive:*

    a. When the green LED goes out (all RCD LEDs are off), move the lever on the left of the faceplate down 90 degrees to unlatch the door.
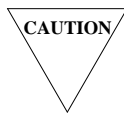
    > ⚠ **CAUTION** **DO NOT** *move the latch if the green LED is on or flashing, or if power to the system is OFF. This will damage the drive.*

    b. Grasp the front of the RCD and pull the drive forward out of the lower cover housing. The drive will click when it is about 6 inches out.

    c. When the drive clicks into place, rotate the front lid (the top of the faceplate) forward and down. The cartridge should pop up. Go to the next step.

6. Remove the cartridge. *Before setting it down,* make sure the cartridge is clearly labeled with the volume name and contents. Place the cartridge in its protective cover.

7. *For a 50-Mbyte drive:*

    a. Check the cartridge you are going to insert and verify that the red tab on the underside of the cartridge is set to the W/R position (for write/read).

b. Position the cartridge so that the arrow is on top and pointing toward the slot. Slide in the cartridge.

c. Press the start/stop button to spin it up. The green LED will blink and then stay on. (This takes about 20 seconds). Go to step 9.

8. *For a 20-Mbyte drive:*

a. Position the new cartridge so the label faces forward and the write-enable tab is at the bottom right (this covers the write-protect notch). The head-access panel at the rear of the cartridge should be shut. (You cannot write to a write-protected disk or RCD, so you cannot initialize a system without a write-enable tab over the notch.)

b. Insert the cartridge and push down firmly on the housing so it snaps into place.

c. Lift the front lid back into place, and return the front lever to the latched (upright) position. Push the RCD drive back into place (the drive will not slide back in unless the latch is up).

d. Press the start/stop button to spin up the drive. When the green LED remains steady, the cartridge is ready for use. Go to the next step.

NOTE	If the green LED blinks more than 2 to 3 minutes, open the RCD again starting with step 4 or 5. Make sure the cartridge is correctly inserted and seated. If the green LED does *not* blink, push on the front of the RCD to make sure it is back in place, then press the start/stop button to spin up the drive again.

9. Replace the cover on the AUDIX cabinet and return to the administrator's terminal.

10. Use the `maintenance : dbp : equip` form to equip the RCD (identify it to software). Specify *circuit pack code* = SCSI and *disk device number* = 1. Press ⌈ CHANGE ⌉.

If this cartridge has already been used, the volume name appears when you press ⌈ CHANGE ⌉. See the appropriate forms reference manual for details on using this form and its various options.

AUDIX-L System

To replace the cartridge on an AUDIX-L system:

1. If there is an equipped cartridge in the drive, use the `maintenance : dbp : unequip` form to unequip the removable cartridge. When the message `operation confirmed` is displayed, the removable cartridge in the drive is unequipped and can be removed.

2. Open the small ''pizza oven'' door to access the disk drives.

3. Locate the drive with the handle on the door (it is marked with a **1** on the right hand side of the drive just above the START button) and if the green light is lit, press the START button (the small black button on the right of the drive) to spin down the cartridge. The green light will begin blinking, indicating that the cartridge is spinning down. When the green light quits blinking (or if it was not lit), open the drive door and remove the cartridge.

4. Hold the cartridge you want to install so that the arrows (located in the upper square corner) point in the positions indicated, then insert it into the drive.

5. Close the door on the drive and press the START button. The cartridge will begin spinning up (indicated by the blinking green light located on the START button). When the green light becomes steady green, the drive is ready.

> | NOTE | If the green light continues to blink for more than two or three minutes, there may be a problem. Press the START button to cause the disk to spin down and stop. Wait for the green light to stop blinking (when the disk stops spinning) and press the START button to start the disk spinning up again.

6. Close the door on the cabinet, and return to the administrator's terminal. Remember that you must re-equip the removable cartridge before it can be used by using the `maintenance : dbp : equip` form.

RECOVER BACKED-UP FILESYSTEM INFORMATION

Occasionally, system hardware problems may occur causing all or part of the information on one or more of your volumes to be destroyed. You will be notified of filesystem or volume problems by an alarm indication on the `STATUS` line of your terminal. When an alarm is indicated, check the alarm log to determine the type of problem.

The alarm log will display a fault code indicating file trouble and a unit code indicating the filesystem that is corrupt (damaged in some way). These codes are listed in the AUDIX system maintenance documents (see *Related Resources* in the *About This Document* section of this document). You will need to report this information to the service technician.

The service technician must determine the cause of the problem and perform a recovery of the filesystems that are corrupt. The recovery is made from the backup copies of these filesystems. For this reason it is extremely important to ensure the nightly backups of the system data filesystem are made and to check the removable cartridge onto which the filesystems are backed up to ensure no current data is lost. See the *Back Up System Filesystems* section for details.

In general, the filesystem recovery procedure is as follows:

1. If a filesystem or disk suffers a problem, an alarm message appears on the terminal screen. The alarm log should be checked for a fault code that identifies the problem filesystem.

2. If a filesystem is damaged, it must be unmounted and deleted using the `filesystem : unmount` and `filesystem : detail` forms.

3. The system must be shut down using the `shutdown` form and the most recent backup cartridge must be installed using the `maintenance : dbp : equip` form.

4. The equivalent filesystem from the backup cartridge is copied in place of the deleted filesystem using the `filesystem : copy` form. If a volume is physically damaged, the backup filesystem should be copied to a different volume.

5. The new filesystem is activated using the `system : filesystems` form and the system is restarted using the `startup` form.

6. Appropriate audits are run to update the older restored filesystem with appropriate information from other filesystems using the `maintenance : audits : fp` and `maintenance : audits : vsp` forms.

Although you are not required to perform the recovery, observe the procedures performed by the service technician to become more familiar with the maintenance phase of the AUDIX system.

NOTE	If your files become corrupt or a disk crashes, check any recorded automated attendant messages to be certain they are intact. You might want to keep a copy of the text of automated attendant messages so that you can re-record them precisely if necessary.

INSTALL A NEW ANNOUNCEMENT VERSION

New releases of the AUDIX software may be delivered with a new set of announcements, or you may optionally order a different set of AUDIX announcements than the one your system originally shipped with. If you receive a new set of announcements, you should install the new announcements just before you install the new boot filesystem. This is because the existing announcement set may not play out correctly after the new boot filesystem is installed, and the new announcements may not play with the existing system software prior to installing the new boot filesystem.

The announcements you normally receive with a new system depend on the version of AUDIX software you are running. Refer to the *Announcement Filesystems* section for more information on the various AUDIX announcement sets.

To install a new announcement version:

1. Install the cartridge containing the new announcement set. Refer to the *Install a Removable Cartridge* section for instructions if needed.

2. Equip the new cartridge using the `maintenance : dbp : equip` form.

3. Copy the new announcement data filesystem from the removable cartridge to the hard disk using the `filesystem : copy` form.

4. If you had any customized announcements in the old active announcement version, you *may* be able to copy the customized announcements into the new version depending on the announcement set you just installed.

    • On an R1V5 through R1V7 system, if you exchanged an *abbreviated* announcement set for a *verbose* announcement set or vice versa, you can copy your customized announcements into either version as long as the wording and contexts are similar (refer to the announcement customization guide for your system to check your cross-references). Use the `system : announcement : detail` form to copy customized fragments from your old announcement version to the new version.

    • If you upgraded to an R1V8 *standard* or *traditional* announcement set, you may be able to copy some of your customized announcements into the new version (such as the default call answer and voice mail greeting fragments 43 and 287). Refer to the appropriate announcement customization guide for your system for details on handling upgrades (see the *Announcement*

Filesystems section for details).

- If you exchanged an R1V8 *standard* announcement set for a *traditional* announcement set or vice versa, you should be able to copy your customized announcements into either version as long as the wording and contexts are similar (refer to the appropriate announcement customization guide for your system to check your cross-references). Use the `system : announcement : detail` form to copy customized fragments from your old announcement version to the new version.

5. Make the new announcement set the new active version using the `system : announcement : filesystems` form.

6. Choose one of the following:

    - If you do not have customized announcements, delete any old announcement versions on your system except the one that is currently active (in use by subscribers). Deleting all old announcement set versions will eliminate confusion over which versions are most current. You may then make copies of your new announcement set to replace those you deleted.

      Use the `filesystem : list` form to list all the announcement versions on your system. Use the `filesystem : detail` form to delete old announcement filesystems.

    - If you have customized announcements, retain the old version until you are sure that all customizations were incorporated in the new version correctly. You may then delete the old version(s) as described in the previous step.

8. Alarms, Logs, and Audits

This chapter describes alarms and error logs that are generated by AUDIX system background tests, system administration and activity logs that are used to correct or diagnose possible problems, and the various audits that are performed automatically or manually as required to update and synchronize filesystems and identify and correct problems in the system. Information is organized as follows:

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Error and Alarm Handling	8-2
Error and Alarm Logs	8-2
The System Administration Log	8-3
The Activity Log	8-4
Audits	8-10

OVERVIEW

AUDIX software monitors system activity through continuously-running background self-tests. Errors are recorded in logs that are stored as disk files on the hard disk. Many errors are corrected automatically by system audits that run automatically each night to update and synchronize AUDIX filesystems. Significant errors, designated as faults, are flagged as alarms on the STATUS line of the terminal screen and may require administration by you or maintenance by service personnel.

ERROR AND ALARM HANDLING

AUDIX maintenance software collects error reports from the system self-tests, sorts them by type, puts them in the error log, and monitors their frequency against a threshold number. If an error is sufficiently severe or if enough similar errors occur to violate the error threshold, the system automatically runs maintenance checks and may then send a fault to the alarm log.

Alarms are noted on the STATUS line of the terminal screen as follows:

- alarms: M — Major alarms indicating problems that may affect key system components. Major alarms are sent automatically to the remote maintenance service center by your AUDIX machine if you have a maintenance service contract. Remote service center personnel take the appropriate actions to correct these problems.

- alarms: m — Minor alarms indicating problems that are not critical to system operation but could possibly affect full service. Minor alarms may be corrected automatically by system audits, or by remote maintenance service personnel if you have a maintenance service contract.

- alarms: w — Warning alarms indicating problems that may have a potential affect on system service. Warning alarms are usually corrected automatically by system audits.

- alarms: A — Administration alarms indicating subscriber, filesystem, or networking problems. Administration alarms must be corrected by you, the AUDIX system administrator. See the following *The System Administration Log* section for more information.

ERROR AND ALARM LOGS

Errors found by the system's self-tests are recorded in the maintenance error log. The system attempts to diagnose and isolate problems that are recorded in the error log, and may send a fault to the alarm log if the error cannot be corrected internally. When a fault is sent to the alarm log, it simultaneously triggers an alarm that appears on the terminal screen's STATUS line as described above. Faults that have been corrected either automatically or through a service procedure are recorded in the resolved alarm log. The logs are typically used as follows:

- The error log, accessed with the maintenance : error : specification and maintenance : error : display forms, is typically used by services personnel as a part of problem diagnosis if the alarm log does not provide sufficient information to correct the problem.

- The alarm log, accessed with the `maintenance : active alarm : specification` and `maintenance : active alarm : display` forms, is the starting point for service personnel diagnosing problems. The most severe problems are always listed first in the alarm log since these are most often the cause of the problem.

- The resolved alarm log, accessed with the `maintenance : resolved alarm : specification` and `maintenance : resolved alarm : display` forms, is used by service personnel to check that alarms are cleared after service procedures are performed, and also for troubleshooting intermittent problems that resolve themselves and then recur.

THE SYSTEM ADMINISTRATION LOG

Errors that require the attention of the AUDIX system administrator appear in the system log, also known as the administration log. These administration errors (including notification of full mailboxes, break-in attempts to subscriber mailboxes, nondeliverable messages, extensions without recorded names, AUDIX networking problems) should be corrected to optimize AUDIX system operation or security.

An alarm message (`alarms: A`) is displayed on the AUDIX status line when administration errors have been logged. Use the `system : log : specification` and `system : log: display` forms to select and display administration errors from the system log.

The system log should be checked by the AUDIX system administrator each morning as a part of the ongoing preventive maintenance routine that was described in Chapter 5, *Ongoing Preventive Maintenance*. You can correct subscriber problems identified on the system log using regular administrative procedures (such as recording a name, increasing a filesystem's size, or notifying a subscriber of a delayed delivery, undeliverable message, or apparent break-in attempts).

Note that the administration alarm on the `STATUS` line is cleared when you access the system log, even if you do not correct the problem.

THE ACTIVITY LOG

The Activity Log is an administrative tool useful for investigating subscriber-reported problems with message delivery. It maintains a history of subscriber activity in the AUDIX system. Since you can use the log to track activity by subscriber extension and by specific time, you will often be able to resolve reported problems by observing the Activity Log before filing a trouble report with AT&T.

Activity Log Operation

Once you have enabled the Activity Log, it records the following specific activities for each subscriber's mailbox:

- Subscriber log-in/log-off. These entries include new, unopened, and old message counts.

- Scheduled delivery of a message.

- Receipt of a new message. These entries include new, unopened, and old message counts.

- Canceled delivery of a scheduled message.

- Status change of a message. A message can change category status (that is, from new to unopened, new to old, or from unopened to old) or be deleted.

A *scheduled* entry is made in the Activity Log each time a message is scheduled for delivery. A single scheduled entry will be made for a message regardless of the number of recipients (for instance if the message is sent to everyone on a mailing list). The message may be one of the following:

- Broadcast voice mail message

- Call Answer — Because Call Answer messages are scheduled for immediate delivery at the time they are created, the scheduled delivery time is not repeated on the display. In addition:

  — If both the calling party and the called party are local subscribers, the display will show that the calling party scheduled the message for the called party.

  — If the calling party is not a local subscriber, the activity log will show a call answer message scheduled for delivery by an outside caller or guest.

- Leave Word Calling (LWC)

- Login announcement

- Priority voice mail

- Voice mail

A *received* entry is made in the Activity Log each time a message is delivered into a subscriber's mailbox. Note that a message with multiple recipients will generate a *received* entry for each recipient. The message may be one of the following:

- AMIS analog networking message or reply

- Broadcast voice mail message (for the broadcast mailbox only)

- Call Answer

- Leave Word Calling (LWC)

- Login announcement

- Priority voice mail

- Undeliverable message notification

- Voice mail

Activity Log Activation

It is recommended that you enable the Activity Log so that you can investigate problems when they are reported. The Activity Log will help you diagnose user-perceived problems, MWI delays, delayed deliveries due to full mailboxes, and the like. To activate and use the Activity Log:

1. Before using the Activity Log, you must set the maximum number of entries you want kept in the log using the `system : limits` form. The default is 1000 but, if there is sufficient space in the system status (`sst`) filesystem (mount point `/ss`), this should be set to 99,999 entries. Use the `filesystem : detail` form to monitor available disk space.

NOTE	To determine how many entries the `/ss` filesystem can hold, multiply the number of available blocks by 150. For example, if you have 355 available blocks in the `/ss` filesystem (as shown on the `filesystem : detail` form), you should set the maximum number of Activity Log entries to 53,250 (355 multiplied by 150).

    To hold 99,999 entries in the Activity Log, you must have 600 available blocks. If you want to increase the size of the `/ss` filesystem, see Chapter 7, *Ongoing Filesystem Administration*.

2. Once you have allocated space for the Activity Log, you can activate the log using the `system: activity log : specification` form.

3. After the AUDIX system has collected data in the Activity Log, you can specify the subscriber's extension (mailbox ID) and the start and end of a period of time for which you want to display activity. Use the `system: activity log : specification` form to specify selection criteria for Activity Log records.

4. After you have specified the selection criteria, you can display the Activity Log entries using the `system : activity log : display` form.

    The Activity Log will then display activity information for the selected subscriber. The events are listed in chronological order (oldest first) beginning with the specified date and time. Press ⟮ENTER⟯ (F8) to display the remaining entries.

Activity Log Interpretation

This section describes how the Activity Log can be used to investigate problems. Each example is divided into three parts. The first part shows the report as provided by the subscriber. The second part shows the data that would be viewed in the Activity Log. The third part shows the conclusion of what the problem was.

NOTE	The Activity Log must be activated *prior* to the receipt of a specific problem report in order to be of value. If a problem is reported but the Activity Log has not been previously activated, the needed data will not be available. You can always activate the Activity Log following a problem report so you will be able to track the *next* occurrence of a problem.

Example 1: Delayed Delivery

The subscriber at extension 2345 says that on 10/1/90 he had a delayed delivery.

Subscriber Report: The subscriber called into AUDIX at 4:30 p.m. on 10/1/90 and listened to all of his messages. He then left the office for the evening. When he arrived at 7:30 a.m. on 10/2/90, he had a message that was left prior to his departure on 10/1.

Activity Log Data:

```
100190  15:31    Call answer message scheduled by an outside caller or guest
                 to 2345 at 10/01/90 15:31.
100190  15:31    Call answer message delivered to 2345 from outside caller or
                 guest. Category totals: new  1, unopened 0, old  0.
100190  16:19    Voice mail login by 2345. Category totals:
                 new  1, unopened  0, old  0.
100190  16:20    Message to 2345 delivered at 10/01/90 15:31 deleted.
100190  16:21    Voice mail logout by 2345. Category totals:
                 new  0, unopened  0, old  0.
100190  16:40    Call answer message scheduled by an outside caller or guest
                 to 2345 at 10/01/90 16:40.
100190  16:40    Call answer message delivered to 2345 from outside caller or
                 guest. Category totals: new  1, unopened 0, old  0.
100290  07:20    Voice mail login by 2345. Category totals:
                 new  1, unopened  0, old  0.
100290  07:20    Message to 2345 delivered at 10/01/90 16:40 deleted
100290  07:21    Voice mail logout by 2345. Category totals:
                 new  0, unopened  0, old  0.
```

Conclusion: The time stamp of the last login indicates that the subscriber actually logged in at 4:19 p.m. rather that 4:30 p.m. If he then left the office, he would have been gone at the time the next call answer message came in at 4:40 p.m. This leads to the conclusion that this problem was a user perception error.

Example 2: Delayed Delivery

The subscriber at extension 3456 says that on 10/10/90 she had a delayed delivery.

Subscriber Report: The subscriber called in to AUDIX at 1:00 p.m. on 10/10/90 and listened to all of her messages. She was out of the office for approximately one hour. When she returned to the office her Message Waiting Lamp (MWL) was not on. At 2:20 p.m. her lamp went on, but the telephone did not ring.

Activity Log Data:

101090	11:17	Call answer message delivered to 3456 from 2211. Category totals: new 1, unopened 0, old 0.
101090	12:01	Call answer message scheduled by an outside caller or guest to 3456 at 10/10/90 12:01.
101090	12:01	Call answer message delivered to 3456 from outside caller or guest. Category totals: new 2, unopened 0, old 0.
101090	13:02	Voice mail login by 3456. Category totals: new 2, unopened 0, old 0.
101090	13:04	Message to 3456 delivered at 10/10/90 11:17 deleted.
101090	13:04	Message to 3456 delivered at 10/10/90 12:01 moved to old.
101090	13:05	Voice mail logout by 3456. Category totals: new 0, unopened 0, old 1.
101090	13:19	Call answer message delivered to 3456 from 1313. Category totals: new 1, unopened 0, old 1.
101090	14:25	Voice mail login by 3456. Category totals: new 1, unopened 0, old 1.
101090	14:26	Message to 3456 delivered at 10/10/90 13:19 deleted.
101090	14:26	Voice mail logout by 3456. Category totals: new 0, unopened 0, old 1.

Conclusion: The data in the Activity Log indicates that the message was available to the subscriber at 1:19 p.m. When the subscriber returned to her office at 2:00 p.m., the MWL was not on. The conclusion is that this was a Message Waiting Lamp delay. The AUDIX system sent a message to the switch to turn on the MWL, but the switch did not do so in a timely manner.

Example 3: Delayed Message

Subscriber at extension 5432 reports that she had a delayed message.

Subscriber Report: Another subscriber at extension 5544 said that she had left a message for subscriber at extension 5432 at 10:00 a.m. on 10/11/90. Subscriber at extension 5432 claims that she did not receive the message until 2:30 p.m. on 10/12/90.

Activity Log Data:

DISPLAY OF ACTIVITY LOG FOR EXTENSION 5544

101090	10:01	Voice mail login by 5544. Category totals: new 0, unopened 0, old 0.
101090	10:04	Voice mail message scheduled by 5544 to 5432 at 10/10/90 10:04.
101090	10:05	Voice mail logout by 5544. Category totals: new 0, unopened 0, old 0.

DISPLAY OF ACTIVITY LOG FOR EXTENSION 5432

101090	11:12	Voice mail login by 5432. Category totals: new 1, unopened 3, old 15.
101090	11:14	Message to 5432 delivered at 10/10/90 07:46 moved to old.
101090	11:14	Voice mail logout by 5432. Category totals: new 0, unopened 3, old 16.

... other events deleted ...

101190	13:12	Voice mail login by 5432. Category totals: new 0, unopened 0, old 16.
101090	13:14	Message to 5432 delivered at 10/05/90 08:42 deleted.
101090	13:15	Message to 5432 delivered at 10/05/90 19:13 deleted.
101090	13:15	Message to 5432 delivered at 10/06/90 13:17 deleted.
101090	13:17	Message to 5432 delivered at 10/06/90 14:12 deleted.
101090	13:18	Message to 5432 delivered at 10/08/90 09:12 deleted.
101090	13:19	Voice mail logout by 5432. Category totals: new 0, unopened 0, old 11.
101190	14:30	Voice mail message delivered to 5432 from 5544. Category totals: new 1, unopened 0, old 11.

Conclusion: In this example, the incoming mailbox for extension 5432 was full at the time the message from 5544 was sent. It was not until the subscriber at 5432 deleted some old messages that the message from 5544 could actually be delivered. The `system : log : display` form would also be useful in identifying and verifying that this was actually the problem (full mailbox errors would be logged against 5432).

Example 4: Incorrect Message Count

An R1V5 subscriber at extension 3245 says that on 10/5/90 he had an incorrect message count when he logged into AUDIX.

Subscriber Report: The subscriber called into AUDIX at 4:00 p.m. on 10/5/90 and AUDIX told him that he had one message. He listened to that message and deleted it, but his Message Waiting Lamp stayed on. He logged back into AUDIX and found he had another (call answer) message.

Activity Log Data:

100590	11:31	Call answer message scheduled by an outside caller or guest to 3245 at 10/05/90 11:31.
100590	11:31	Call answer message delivered to 3245 from outside caller or guest. Category totals: new 1, unopened 0, old 0.
100590	13:19	Priority message delivered to 3245 from 3455. Category totals: new 2, unopened 0, old 0.
100590	16:01	Voice mail login by 3245. Category totals: new 2, unopened 0, old 0.
100590	16:01	Message to 3245 delivered at 10/05/90 13:19 deleted.
100590	16:02	Voice mail logout by 3245. Category totals: new 1, unopened 0, old 0.
100590	16:05	Voice mail login by 3245. Category totals: new 1, unopened 0, old 0.
100290	16:05	Message to 3245 delivered at 10/05/90 11:31 deleted
100290	16:06	Voice mail logout by 3245. Category totals: new 0, unopened 0, old 0.

Conclusion: The subscriber at 3245 logged in at approximately 4:00 p.m. and heard, ''John Smith. You have one new...'' and immediately pressed 2 and 0 to listen to the message. If he had listened to the entire message summary, he would have heard, ''John Smith. You have one new priority, and one other new voice mail message.'' Additionally, if he had listened to the message header after pressing 2, he would have heard, ''New Message Summary, Priority message from Dick Jones delivered 1:19 p.m. Tuesday October 5 ...'' Because this subscriber was in a hurry, he did not listen to the header information and consequently did not know he really had two messages.

NOTE	In R1V6 software, the AUDIX prompt was changed to state, ''John Smith. You have *two* new voice mail messages, *including* one new priority message.'' The only way R1V6 or later subscribers could perceive that they had an incorrect message count was if one or more new messages arrived *while* they were reviewing their incoming messages. However, the new message count at the time they logged in would have been accurate.

AUDITS

Audits are software programs designed to update internal AUDIX filesystems and synchronize them with each other, and to recognize and resolve problems that may occur within filesystems. Some audits run automatically each night, others run once each week, and still others are only run on demand (typically by remote maintenance service center personnel during a remote operation as part of a recovery procedure or in response to a specific problem while troubleshooting the system). The AUDIX system may also run audits automatically in response to system faults that cause alarms.

Automatic audits run each night starting at 7 p.m. so as not to compete for system time with call processing. For systems with fewer than 500 subscribers, the audits complete in several hours. On large systems (up to 4000 subscribers) and networked systems (up to 28,000 administered remote subscribers), audits may take more than one night to complete. In this case, the system terminates the audits at 6 a.m. so they do not compete for system time with call processing. In this case, audits that do not run or do not complete one night are continued where they left off the next night, ensuring that the entire audit cycle completes every three to seven nights regardless of the system's size.

There are two major types of audits: Feature Processor (FP) audits and Voice Session Processor (VSP) audits. These audits are described on the following pages.

FP Audits

The Feature Processor (FP) audits may run automatically each night or once a week. You may also use the `maintenance : audits : fp` form to start, stop, or display status for FP audits. Feature processor audits are:

`Alarm Log Audit`	This audit runs automatically each night. It compares the active alarm log stored on a hard disk to the alarm log stored in AUDIX memory to verify consistency. If one of the logs contains an error record not in the other log, the record will be copied to the other log (for example, if an error record exists in the memory log but not in the hard disk log, the hard disk log will be updated). If the hard disk and the memory have the same information except for minor variations, the hard disk log is used to update the memory alarm log.
`Announcement Structure Audit`	This audit runs automatically each night. It verifies that each announcement contains at least one fragment and that no announcement contains invalid fragments.
`DBP Administrator Audit`	This audit does *not* run automatically and should *only* be run when there is no traffic or when traffic is very light. It checks for a /boot/dbpa file (the file that contains the system's configuration) and creates an empty one if one does not already exist. This audit also synchronizes internal tables with volume labels, directory locations or mount points, free space in voice text filesystems, and filesystem names.

Mailing List and Personal Directory Audit	This audit runs automatically each night. It validates entries in all delivery lists. This audit should also be run after a delivery file (in the voice data filesystem) is restored from a previous version.
Message Data Audit	This audit runs automatically each night. You should also run this audit whenever you add or delete a voice text filesystem. It verifies that a message body exists for each message header, checks for new message service types, and checks for new undeliverable reasons contained in the message status field. If a body does not exist, this audit causes a special message to play following the header informing the subscriber that there is no message to play back. In the cases of the personal greetings or file cabinet messages, this audit deletes the message header if no message body exists.
Message-Waiting Lamp Audit	This audit does *not* run automatically. It compares the status of the Message Waiting Lamp (MWL) information kept in AUDIX memory with the status kept on a hard disk. The memory status is corrected from the status kept on disk in the event there is some discrepancy.
Network Data Audit	This audit runs automatically each night. It checks the transmission queues to remote machines.
Service Dispatcher Audit	This audit is run automatically each night. It compares the memory and hard disk copies of the service dispatcher data. If there is a discrepancy, the number stored in memory is corrected from the number stored on disk. This audit allows for the reset of the Outcalling Services File if the Outcalling feature has been deactivated. This gives the system administrator the ability to correct the Outcalling Service files if corruption has been discovered.
Subscriber Data Audit	This audit runs automatically each Friday night. It verifies that information from the subscriber : local form (such as name, extension, class of service, and list entries) is complete and correct within the various internal files of the system data filesystem. If any of the field data is missing or incorrect, this audit corrects the data in that field.

NOTE	In R1V7 7:2 or later software, the subscriber data audit has been enhanced to delete corrupted subscriber profiles. If a corrupted (bad) subscriber profile is entered on the `subscriber : local` form (for example, if a nonvalid extension number is assigned to an existing subscriber), the `list : subscriber` form shows either a blank or incomplete subscriber name and/or extension number, and the `list : extension : local` form displays `program error encountered` to notify the administrator of a problem.

To delete the corrupt profile(s), run the `Subscriber Data` audit on the `maintenance : audits : fp` form manually, or wait until the subscriber data audit runs automatically on Friday night. (Because the subscriber data audit takes a long time to complete, you may not want to run it manually unless 10 or more corrupt subscriber profiles are causing the system to crash.) Error code 14 (subscriber file is corrupt) appears on the `maintenance : error : display` form indicating that the corrupt subscriber profiles have been deleted.

Subscriber ID Audit	This audit runs automatically each night. It performs the necessary functions to clear the system of references to deleted subscribers (such as removing them from mailing lists) and frees up subscriber IDs for reissue to new subscribers.
Subscriber Mailbox Audit	This audit runs automatically each night. It ensures that files within the system data and voice data filesystems are synchronized. Primarily, this audit ensures that each subscriber has a mailbox and that the contents of each mailbox is validated (each message has a header and a body, for example). This audit also checks to ensure that when a subscriber is informed by the AUDIX system of new mail arrivals that there actually is new mail. If there is no new mail, this audit will turn off the internal flag indicating that new mail has arrived. This audit also deletes messages and headers that have been saved beyond the retention time allocated for each category of messages. This audit also deletes expired broadcast messages and login announcements.
Subscriber Name Data Audit	This audit runs automatically each night or each Friday night, depending on the size of the system. It verifies that, for each subscriber, both a readable name fragment and a valid extension exist in the names filesystem. If a subscriber is found with a valid extension but no readable name fragment, an entry is made in the system log.
Voice Data Rebuild Audit	This audit runs automatically each Thursday night. It performs the same functions as running the mailing list, the subscriber data, and the subscriber mailbox audits together and restores every message header to a subscriber mailbox. This audit should also be run during the filesystem restoration procedure after recovering a voice data or system data filesystem.
Voice Files Audit	This audit runs automatically each Saturday night. It ensures that every message body has a corresponding message header. If a message header does not exist for a voice file (message body), this audit deletes the message body. This audit should also be run after restoring, adding, or deleting a voice text filesystem.

VSP Audits

Voice Session Processor (VSP) audits run automatically each night. You may also use the `maintenance : audits : vsp` form to start, stop, or display status for VSP audits. The VSP audits are:

`Control Channel Manager Internal Data Audit`	This audit ensures integrity and robustness of the software which communicates with the hardware on the time-division bus.
`Hardware Configuration File Audit`	This audit verifies that identical data about message transmission hardware is stored both in AUDIX memory and on a hard disk (in the system data filesystem). If such information does not match, this audit corrects the information stored in memory to match the copy stored on the hard disk.
`Resource Allocation Status Audit`	This audit ensures that the logical connections between the voice buffers and the database processor (DBP) for play and record commands from subscribers are released when subscribers have finished using the AUDIX system.
`VM-VB-DBP Channel Audit`	This audit retrieves the channel status from the voice buffer and compares it with the status maintained by the voice manager. If the information is incorrect, it is corrected according to the voice manager. This audit also compares the status of the play, record, and announcement channels between the DBP and the voice manager. Any invalid connections will be dropped.

Matching Audits and Filesystems

Table 8-1, *Filesystem Audits*, shows which audits are used with each of the six AUDIX filesystem types. Some of these audits must be run immediately after filesystem recovery or after adding or deleting filesystems, others will be run automatically each night. The person responsible for performing the filesystem recovery will also be responsible for manually starting the audits which must be run immediately. See the individual audit descriptions to verify when each audit should be run.

NOTE	If the backup sdat filesystem is restored, the voice data rebuild audit and the voice file audit are the only ones that *need* to be run before restoring AUDIX service.

Table 8-1. Filesystem Audits

Filesystem	Audits	Type
Boot	DBP administrator	FP
System data (`sdat`)	MWL	FP
	Service dispatcher	FP
	Subscriber update	FP
	Message data	FP
	Subscriber data	FP
	Subscriber ID	FP
	Subscriber mailbox	FP
	Mailing lists/personal directory	FP
	Voice data rebuild	FP
	Network data	FP
	Resource allocation status	VSP
	Hardware configuration file	VSP
System status (`sst`)	Alarm log	FP
Announcement (`adat`)	Announcement structures	FP
Names (`ndat`)	Announcement structures	FP
	Subscriber name data	FP
Voice data (`vdat`)	Voice data rebuild	FP
	Subscriber mailbox	FP
Voice text (`vm0 - vm9`)	Voice files	FP

9. Traffic Reports

This chapter describes how to produce and interpret the AUDIX traffic reports. Information is organized as follows:

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OVERVIEW

The AUDIX system collects traffic information that depicts how the system is being used, including data about features, subscribers, communities, data port loads, network data port loads, and remote message traffic. This information is displayed on reports that are produced using the AUDIX traffic forms.

AUDIX traffic reports serve several purposes:

- They help you determine if your AUDIX system is performing at peak efficiency by providing actual usage information that you can compare with the type of usage that was initially forecast for your system.

- They help you troubleshoot administration problems that can occur with subscribers and equipment as system usage grows in your company and requirements change.

- They help you to predict your future requirements for additional disks, ports, and possibly remote machines as your AUDIX system usage increases and your requirements change.

- If your AUDIX system is part of a digital AUDIX network, they provide information about network port, subscriber, and feature traffic that helps you evaluate network efficiency and troubleshoot problems or potential problems between your AUDIX machine and remote machines in the network.

- If you are using the AMIS analog networking feature and/or the message delivery feature, they provide information about outcalling port, subscriber, and feature traffic that help you evaluate system efficiency. AMIS analog messages and message delivery messages will be included in the following statistics on traffic reports: voice mail sessions, total messages, average storage time/mailbox space used, remote messages sent/received, port usage, outcalling port usage, undeliverable notifications, and community usage.

Additionally, if you run and print AUDIX traffic reports on a regular basis and file them sequentially by date, they can provide an ongoing paper audit and historical reference of your AUDIX system that may be useful for analyzing trends and tracking system performance over a period of time. Since traffic records collected for a specific day, hour, or month are only retained for a limited number of days, hours, or months, it is imperative that you run the reports on a regular schedule to insure completeness and consistency from one reporting period to the next.

Two of the most important uses for AUDIX traffic reports are determining the grade of service (GOS) provided subscribers during the busy hour at your site and determining the port usage on the AUDIX system in daily or hourly periods. Refer to Chapter 12, *AUDIX Capacity Planning*, for details on how to calculate the GOS for your system.

TRAFFIC REPORT SUMMARY

Individual AUDIX traffic reports and their contents are listed in Table 9-1, *Traffic Report Summary*. Guidelines for interpreting these reports follow in this chapter. Instructions for producing the individual reports and field-by-field descriptions are in the appropriate forms reference manual for your system (see the *Related Resources* section in the preface).

Table 9-1. Traffic Report Summary (*Page 1 of 3)*

Traffic Report	Contents
community	The `traffic : community : day` and `traffic : community : hour` reports list information about the sending restrictions by community feature for any day or hour in the past 32 days or 192 hours, including the number of messages sent and received by each community and the number of messages not sent and not received by each community due to sending restrictions
feature	The `traffic : feature : day` and `traffic : feature : hour` reports each display two separate reports listing session or message traffic information for any of the past 32 days or 192 hours. The `traffic type, session` report lists: • The average number of ports in use during the busiest hour • The number of local, remote, and non-administered remote subscribers administered on the AUDIX machine at the end of the period • The voice mail session usage time and the number of successful and unsuccessful login attempts by internal and external callers • The call answer session usage time and the number of completed and abandoned calls by internal and external callers The `traffic type, message` report lists: • The number of voice mail messages sent and currently residing on the AUDIX machine, including broadcast messages, log-in announcements, priority messages, and private messages • The number of call answer messages sent and currently residing on the AUDIX machine • The average length of time voice mail and call answer messages were stored for the reporting period, and the average length of each call
load	The `traffic : load : day` and `traffic : load : hour` reports list port usage and related information for any of the past 32 days or hourly for the past 192 hours, including the following: • The number of seconds each port handled calls and the number of calls that were handled • The amount of voice text filesystem space used and the amount available • The number of subscriber mailbox threshold exceptions and the number of message deliveries that required rescheduling

TABLE 9-1. Traffic Report Summary (*Page 2 of 3*)

Traffic Report	Contents
`network load`	The `traffic : network load : day` and `traffic : network load : hour` reports list network port usage and related information for any of the past 32 days or hourly for the past 192 hours including the following: • The maximum number of network data ports that were active at one time, the number of seconds each port handled incoming and outgoing calls, and the number of incoming and outgoing calls that were handled by each port • The number of incoming calls that were unanswered, the number of message transmission threshold exceptions, and the number of limit exceptions that caused the transmission to cease • The number of remote messages that were not deliverable to the remote machine and the number of remote messages that were rescheduled for delivery
`remote messages`	The `traffic : remote messages : day` and `traffic : remote messages : month` reports list remote message traffic information about a specific remote machine, or range of machines, for each of the past eight days or by month for each of the past 13 months. It shows statistics for remote systems connected to the local system via digital networking and AMIS analog networking, and telephones connected to the local system via the message delivery feature, including the following: • The number of message transfer sessions between the local AUDIX system and remote machine, the total and average times for these sessions, and the number of unsuccessful call attempts from the local AUDIX system to the remote machine • The number of messages that were sent by the local AUDIX system to the remote machine, the number of messages that were scheduled for delivery from the local AUDIX system to the remote machine but rejected as undeliverable, and the number of messages that were sent by the remote machine to the local AUDIX system
`special features`	The `traffic : special features : day` and `traffic : special features : hour` reports list information about usage of AUDIX port-dependent features for the past 32 days or hourly for the past 192 hours, including the following: • The highest hourly average number of ports assigned to call answer, voice mail, and automated attendant, and the highest number of ports with a call in progress at the same time for call answer, voice mail, and automated attendant features • The highest number of simultaneous outcalls, outgoing AMIS analog messages, and message delivery messages. It also shows the number of outcalls attempted, completed, and rescheduled.

TABLE 9-1. Traffic Report Summary (*Page 3 of 3*)

Traffic Report	Contents
subscriber	Displays three separate reports listing session, messages received, and messages created information about any individual subscriber for any of the past eight days or by month for any of the past 13 months. The traffic type, session report lists: • The subscriber's community id, total mailbox space used and allowed, the maximum message space in use during the reporting period, and the minimum amount of message space guaranteed for the subscriber's mailbox • The number of times during prime and non-prime hours that call answer callers were directed to the AUDIX system on behalf of the subscriber and the number of times the subscriber logged into the AUDIX system The traffic type, messages received report lists: • The number of voice mail messages received by the subscriber from local and remote users (on systems connected via Networking or via AMIS analog networking) during prime and non-prime hours • The number of undeliverable voice mail notifications received by the subscriber during prime and non-prime hours indicating that messages scheduled for delivery by the subscriber were rejected as undeliverable • The number of new call answer messages accumulated in the subscriber's mailbox during prime and non-prime hours The traffic type, messages created report lists: • The number of voice mail messages, broadcast messages, log-in announcements, priority messages, and private messages created by the subscriber during prime and non-prime hours • The number of voice mail messages that were sent by the subscriber to local and remote users (on systems connected via Networking, AMIS analog networking, or message delivery) during prime and non-prime hours

OTHER AUDIX DATA COLLECTION TOOLS

In addition to the AUDIX traffic reports listed above, there are two additional AUDIX data collection and reporting tools you should be aware of — the AUDIX Administration and Data Acquisition Package (ADAP) and the AUDIX Call Detail Recording (CDR) program.

ADAP

The AUDIX Administration and Data Acquisition Package (ADAP) provides a vehicle for downloading subscriber, traffic, and billing data directly from the AUDIX database files to a personal computer for further processing using a set of standard reports that run under dBASE III Plus or using customized dBASE III Plus reports developed by you or your programming staff. Output from the standard reports and from your customized reports can be optionally displayed in a graphic format using the Stella Business Graphics program on the PC.

NOTE	The Stella Business Graphics program is no longer available, but you may have purchased it with a previous version of ADAP. AT&T is researching the use of an alternative graphics package which should be available in the near future.

ADAP is described in *AUDIX Administration and Data Acquisition Package* (585-302-502).

CDR

The Call Detail Recording (CDR) feature provides customers, which may include service bureaus or departments within a company, with accurate billing information such as subscriber system usage, subscriber connection time, and call information for all calls originated in the AUDIX system.

For CDR recording, the AUDIX system logs specified events to an ASCII disk file. These events may include (depending on administration) voice session records, outgoing voice call records, and system activities that may impact CDR. The ASCII disk file can be downloaded using ADAP to a personal computer administered as the CDR-PC for the AUDIX machine.

The CDR feature does not provide built-in reporting capabilities. It simply collects the requested data in a disk file and provides the interface for downloading it to a PC. From the PC, you can use the information in reports that you or your programming staff develop or you can upload the information to a mainframe for reporting or billing purposes.

The CDR feature is described in *AUDIX Call Detail Recording Package* (585-305-506).

ACTIVATING TRAFFIC COLLECTION

Traffic collection must be turned on before the AUDIX system can produce traffic reports. Since reports can be produced for the current day or hour, you can start running traffic reports almost as soon as traffic collection is activated. However, data for the full range of reporting periods (such as 192 hours, eight days, or 13 months, depending on the report) are not available until that many hours, days, or months worth of traffic data has been collected.

Use the `system : appearance` form to activate traffic collection on a systemwide basis and to define the prime time hours for collection.

DATA RETENTION REQUIREMENTS

When traffic collection is activated, the AUDIX system stores the present collection record and the consecutive previous collection period records. How long each record is retained depends on the report it is collected for:

- Traffic records containing daily information for the feature, load, community, and network load reports are stored for 32 consecutive days.

  An example of how 32 daily records are stored is, if it is January 1, the present record is the traffic collected so far today and the previous daily records that are stored are the 31 previous consecutive records starting at December 31 (yesterday) and going back to December 1.

- Traffic records containing daily information for the remote messages and subscriber reports are stored for eight consecutive days.

  An example of how eight daily records are stored is, if it is Monday, the present record is the traffic collected so far today and the previous daily records that are stored are the seven previous consecutive records starting at Sunday (yesterday) and going back to the previous Monday.

- Traffic records containing hourly information for the community, feature, load, network load, and special features reports are stored for 192 consecutive hours, which is eight days of hourly information.

  An example of how hourly records are stored is, if it is 8:15 a.m., the present record is the traffic collected this hour since 8:00 a.m. and the previous hourly records that are stored are the 191 previous consecutive records starting at the hour counting back from 8:00 a.m.

- Traffic records containing monthly information for the remote messages and subscriber reports are stored for 13 consecutive months.

  An example of how monthly records are stored is, if it is January, the present record is the traffic collected so far this month. The previous monthly records that are stored are the 12 records for the previous year starting at December (last month) and going back to the previous January.

As each new traffic record is collected, the oldest record is deleted. For example, if eight consecutive daily records are stored, today is the current record and a week ago today is the oldest record. The record for the day before this oldest record was deleted when collection began for today.

What this means is that you must produce traffic reports on a regular and timely basis or lose the information they make available to you. This is especially true if you retain the reports for historical purposes as an AUDIX system performance audit to use for comparative analysis.

USING AUDIX TRAFFIC REPORTS

To run the traffic reports, you enter the command path to the form you want to display on the AUDIX PATH line, the start date or month (and for some forms the starting hour or traffic type), and in a few seconds the report for the starting day, month, or hour is displayed on your terminal screen. Subsequent days, months, or hours can be displayed in ascending sequence by pressing (F8) (ENTER). The current day, month, or hour is displayed if no start date is given.

Refer to the appropriate forms reference manual for your system for instructions on running individual traffic reports (see the *Related Resources* section in the preface).

INTERPRETING THE COMMUNITY REPORTS

The traffic : community : day and traffic : community : hour reports provide information about the sending restrictions by community feature for up to 32 consecutive days or 192 consecutive hours. For each of the 15 possible communities of interest, the reports show the number of calls sent and received and the number of incoming and outgoing calls that were blocked because of sending restrictions.

NOTE	If you have assigned communities on a system basis (rather than a subscriber basis), this report will show traffic between systems. Remember, remote systems are those connected to the local system via Networking, AMIS analog networking, or message delivery.

```
      starting date (mmddyy): 101090  ending time (hhmm): 09:15
                      (PRESS ENTER TO DISPLAY TRAFFIC)
                    Number of Voice Mail Messages
      community ID    sent by     received by    not sent by    not received by
           1          320669       317332          960             0
           2            2394         5731            0             960
           3               0            0            0               0
           4               0            0            0               0
           5               0            0            0               0
           6               0            0            0               0
           7               0            0            0               0
           8               0            0            0               0
           9               0            0            0               0
          10               0            0            0               0
          11               0            0            0               0
          12               0            0            0               0
          13               0            0            0               0
          14               0            0            0               0
          15               0            0            0               0
```

Figure 9-1. Sample traffic : community : day Report

If you use the sending restrictions feature, use these reports to monitor the feature's effectiveness and to insure that only the appropriate communities in your organization are restricted. For example, if a community has a large number of calls being blocked by sending restrictions, you may want to investigate further to determine if there is an administration problem (are the right communities being allowed or denied access?) or a subscriber problem (do subscribers know they are restricted and is the restriction appropriate?). Also, depending on how you use the feature, these reports can provide security information if you are monitoring call activity involving sensitive communities.

INTERPRETING THE FEATURE REPORTS

The `traffic : feature : day` and `traffic : feature : hour` reports each display two separate reports listing session traffic or message traffic information for up to 32 consecutive days or 192 consecutive hours.

```
    starting date (mmddyy): 100190     ending time (hhmm): 09:16


    traffic type, session: x  message: _

    max average number of ports in use: 12.4
    subscribers, local: 1126    remote: 6684  non-administered remote: 40

                            VOICE MAIL
    successful logins, external: 39              internal: 692
    failed logins,     external: 23              internal: 27
    session usage, (seconds) : 66990

                            CALL ANSWER
    completed calls,    external: 350            internal: 542
    abandoned calls,    external: 110            internal: 95
    session usage (seconds)    : 38272
```

Figure 9-2. Sample traffic : feature : day Session Report

```
    starting date (mmddyy): 100190     ending time (hhmm): 09:16


    traffic type, session: _  message: x

                            VOICE MAIL
    total messages,       sent: 2725        current: 2691
    broadcast messages,   sent: 0           current: 0
    log-in announcements, sent: 0           current: 0
    priority messages,    sent: 0           current: 0
    private messages,     sent: 0           current: 0


    average storage time: 2061   average connect time: 35

                            CALL ANSWER
    total messages, sent: 1020               current: 1091
    average storage time: 5172   average connect time: 87
```

Figure 9-3. Sample traffic : feature : day Message Report

These reports play an important role in determining the grade of service (GOS) the AUDIX system provides subscribers during the average busiest hour at your site and in determining the average number of ports in use during that period. This information provides insight into how efficiently your AUDIX system is performing during its ''worst case'' period and can be measured precisely enough to help you calculate what additional equipment you need to reach a desired grade of service. Refer to Chapter 12, *AUDIX Capacity Planning*, for details on how to calculate the GOS for your system and determine if additional voice ports are needed.

In addition to helping determine GOS and port usage, the `traffic : feature` reports provide statistical information that is useful for spotting potential problems and for evaluating how your AUDIX system is actually used by callers and subscribers. This information includes the number of subscribers administered on the AUDIX machine, the total call answer and voice session usage time, the number of login attempts and abandoned calls, the number of voice mail, call answer, broadcast, log-in, priority, and private messages sent, and the average length of voice mail and call answer calls.

Note that voice mail statistics in these reports include subscribers who call the AUDIX system to get messages but do not include broadcast messages.

INTERPRETING THE LOAD REPORTS

The `traffic : load : day` and `traffic : load : hour` reports display information about the number of calls handled by each active port for up to 32 consecutive days or 192 consecutive hours.

```
       starting date (mmddyy): 091090    ending time: 09:16

       total subscriber threshold exceptions
           lists: 0     list space: 0     message space, lower: 8    upper: 3
           total subscribers over threshold: 0
       deliveries rescheduled: 0           maximum simultaneous ports: 25
       maximum voice text used: 19949    voice text free space: 30051

       port usage data (seconds)
            1-8:  3171  2921  3485  3378  3692  3748  3489  3114
            9-16: 3277  3923  3147  4662  3107  3464  3324  2779
           17-24: 3014  3028  3512  2961  2714  3415  3397  3597
           25-32: 3003  2621  2972  3844  4179  3272  3514  2313

       port peg count data (number of calls)
            1-8:  66    65    61    61    57    57    60    63
            9-16: 63    59    59    61    58    58    59    60
           17-24: 59    60    64    63    65    57    62    57
           25-32: 60    64    63    56    49    49    50    43
```

Figure 9-4. Sample traffic : load : day Report

Notice the average number and duration of the calls that are made to the AUDIX system during the period that is being reported. These numbers are important in terms of ports and disk storage support. As described in Chapter 12, *AUDIX Capacity Planning*, this information may warrant additional hardware purchases. It may also indicate a problem at the switch with either port coverage or distribution if one port is overloaded and other ports are underloaded.

Threshold exceptions indicate that subscribers have used more message or list space than is available and that warnings have been issued. These exceptions may be the first indication that you need to change certain information contained within other forms.

Should you notice that a large number of threshold exceptions for lists are being reported, it may mean that you initially miscalculated the maximum number of lists per subscriber. Subscribers may actually need more lists than you thought they would. You may increase the number of lists assigned each subscriber through both the `system : limits` and `cos` forms but you should do so with care, paying attention to the `recommended filesystem sizes` field at the bottom of the `system : limits` form. The recommended sizes may increase when you increase the number of lists allowed each subscriber. In this case, you must increase filesystem sizes according to the procedure shown in Chapter 7, *Ongoing Filesystem Administration*. An alternative to increasing filesystem sizes is asking subscribers to delete old or unnecessary lists.

Lower and upper subscriber message space thresholds are shown on the form in the `message space` fields. There are a number of things you may do if upper and lower message space thresholds are consistently exceeded. First, you may decrease message retention times on both the `subscriber : local` and `cos` forms. This will limit the length of time that the AUDIX system retains messages within subscribers mailboxes and will cause messages to be automatically thrown away more frequently. Second, you might issue a notice to subscribers asking them to delete messages immediately after listening to them or that they regularly clean both their incoming and outgoing mailboxes. Finally, you may interpret a large number of threshold exceptions as an indication that the thresholds were originally set too low. If you find this to be the case, you may raise the thresholds through the `system : thresholds` form, or give subscribers larger mailboxes.

INTERPRETING THE NETWORK LOAD REPORTS

The `traffic : network load : day` and `traffic : network load : hour` reports
provide information about the number and duration of calls on the network data ports for up to 32
consecutive days or 192 consecutive hours.

```
date (mmddyy): 091090                         ending time: 09:37

total message transmission threshold exceptions: 0
total message transmission limit exceptions   : 0
remote deliveries rescheduled                 : 0
maximum simultaneous ports                    : 3
total incoming calls unanswered               : 0
total remote undeliverable messages           : 1

data  port    data port usage (seconds)       peg count (number of calls)
port  type    incoming   outgoing   total      incoming   outgoing   total
1     dcp     630        0          630        45         0          45
2     dcp     14         0          14         2          0          2
3     dcp     0          125        125        0          6          6
4     dcp     0          614        614        0          42         42
5     rs232   0          0          0          0          0          0
6     rs232   0          0          0          0          0          0
```

Figure 9-5. Sample traffic : network load : day Report

Port usage data is useful for determining the average amount of time a network connection is active (divide
port usage by port peg count) and whether or not the port has actually been identified to the switch, in
which case, a port you thought was available may never be used.

If you notice many transmission threshold or limit exceptions, the transmission schedule set between your
machine and a remote machine may be inadequate for the traffic volume between the machines. You may
need to increase the hours of transmission or the frequency of transmissions during those hours. Check the
`traffic : remote messages` forms to determine which remote machines are experiencing these
problems. Then increase the transmission time on the `system : translation : machine :
audix/amis/call delivery` form or the `system : translation : machine :
adjunct` form.

INTERPRETING THE REMOTE MESSAGES REPORTS

The `traffic : remote messages : day` and `traffic : remote messages : month`
forms provide information about message traffic between the local AUDIX system and each remote system
connected to the local system via digital networking or AMIS analog networking, for a range of systems
connected via the AMIS analog networking, or for an individual telephone number or a range of telephone
numbers administered for the message delivery feature. They show data for up to eight consecutive days or
13 consecutive months. This is the primary form to be used for measuring remote networking, CDR, Text
Service Interface, AMIS analog networking, and message delivery transmissions.

<table>
<tr><td>NOTE</td><td>If you are using the AMIS analog networking feature or the message delivery feature, the usage will be greater on the sending system than on the receiving system. This is because the sending system counts the protocol transmission overhead in its usage.</td></tr>
</table>

```
    machine name: aud2                          machine type: audix
    date (mmddyy): 100990                        ending time: 09:39

                     LOCAL   ORIGINATION    REMOTE   ORIGINATION
                     prime    non-prime     prime    non-prime
    transfer sessions: 22      4            23        5
    usage (seconds) :  441     113          421       89
    average usage   :  20      28           18        17
    messages sent   :  17      4            19        3
    messages rejected: 1       0            0         0
    status sent     :  20      2            0         0
    status received :  0       0            29        2

    headers sent    :

    message transmission threshold exceptions: 0
    session failures
      far end "No Answer"     0
```

Figure 9-6. Sample traffic : remote messages : day Report

If the message transmission threshold is being exceeded often, you should check the transmission schedule
for this remote machine. Increase the number of transmissions using the `system : translation :
machine : audix/amis/call delivery` form or `system : translation : machine
: adjunct` form.

If there are many session failures, check your hardware and that of the remote machine. Also, check the
`data port group number` field on the `system : translation : machine :
audix/amis/call delivery` form to ensure it is the correct number.

INTERPRETING THE SPECIAL FEATURES REPORTS

The `traffic : special features : day` and `traffic : special features : hour` reports display standalone and outcalling traffic information for up to 32 consecutive days or 192 consecutive hours.

```
      date (mmddyy): 101090      ending time: 10:00

        port type        average number of      maximum simultaneous
                           ports in use            ports assigned

        call answer   :      0.0                        0
        voice mail    :      0.0                        0
        auto attendant :     0.0                        0

    maximum simultaneous outcalls:  4
    outcalls attempted  :  92
    outcalls completed  :  4
    outcalls rescheduled:  0

    calls answered without connect: 0
```

Figure 9-7. Sample traffic : special features : day Report

In a Standalone AUDIX system, each voice port is dedicated to handling either voice mail calls, call answer calls, or automated attendant calls. Standalone information displayed on these reports is listed below. These fields are always 0 except for standalone configurations.

- The maximum average number of ports in use for each of the three types of calls (voice mail, call answer, and automated attendant)

- The maximum number of ports simultaneously in use for each of the three types of calls (voice mail, call answer, and automated attendant)

Outcalling information is also displayed; it includes:

- The maximum number of ports with an outcall, outgoing AMIS analog message, or outgoing message delivery message in progress at any one time

- The number of outcalls that were attempted

- The number of outcalls that were completed

- The number of outcalls that were rescheduled because all available ports were busy

For machines connected to 1AESS or 5ESS switches, this form displays the number of times calls had to be covered without a connect message coming over the data link. A high number here could indicate a problem with the switch or with the connection to the switch. If this is a recurring problem, you may need to verify your switch translations.

If the average number of ports is close to the maximum simultaneous ports for call answer, voice mail, or automated attendant, it is likely that some calls are not being answered. You may have to reassign the ports or buy more ports.

INTERPRETING THE SUBSCRIBER REPORTS

The `traffic : subscriber : day` and `traffic : subscriber : month` reports provide session traffic, messages received, and messages created information for individual subscribers for up to eight consecutive days or 13 consecutive months.

```
  name: Doe, John                        ext: 82345
  starting date (mmddyy): 101090   ending time (hh:mm): 10:01

  traffic type, session: x  messages received: _  messages created: _

  community id: 1
  mailbox space used (seconds): 152         space allowed    (seconds):
  1200
  maximum space used (seconds): 520         space guaranteed (seconds): 0

                           CALL ANSWER                 VOICE MAIL
                      Prime      Non-Prime         Prime      Non-
  Prime
  sessions          : 2          0                 2          0
  session usage     : 190        0                 806        0
   (seconds)

  text service
  headers created   : 0          0                 0          0
```

Figure 9-8. Sample traffic : subscriber : day Session Report

```
   name: Doe, John                        ext: 82345
   starting date (mmddyy): 101090    ending time (hh:mm): 10:12

   traffic type, session: _  messages received: x  messages created: _

                             VOICE MAIL MESSAGES RECEIVED
                             Prime            Non-Prime
   local voice mail messages    :   15               0
   remote voice mail messages   :   4                0
   undeliverable notifications  :   0                0

                             CALL ANSWER MESSAGES RECEIVED
                             Prime            Non-Prime
       messages received     :   12               3
```

Figure 9-9. Sample traffic : subscriber : day Messages Received Report

```
name: Doe, John                      ext: 82345
starting date (mmddyy): 101090    ending time (hh:mm): 10:15

traffic type, session: _  messages received: _  messages created: x

                              VOICE MAIL MESSAGES CREATED
                              Prime              Non-Prime
 total voice mail messages:   25                 10
 broadcast messages      :    0                  0
 log-in announcements    :    0                  0
 priority messages       :    0                  0
 private messages        :    0                  0

                              VOICE MAIL MESSAGES SENT
 local voice mail messages :  5                  0
 remote voice mail messages:  0                  0
```

Figure 9-10. Sample traffic : subscriber : day Messages Created Report

These reports provide information that is useful as a first step in analyzing performance problems reported by individual subscribers:

• Use session traffic information to determine a subscriber's call answer and voice mail usage patterns and also to determine if the subscriber has enough mailbox space.

• Use messages received information to determine the number of voice mail and call answer messages sent to the subscriber and the number of undeliverable messages the subscriber has attempted to send (shown as the number of undeliverable message notifications the subscriber received).

• Use messages created information to determine the total number of voice mail messages created by the subscriber (including separate tallies for broadcast messages, log-in announcements, priority messages, and private messages) and also to determine the number of local and remote messages the subscriber sent. Remote messages include those sent to digitally networked systems, remote AMIS analog systems, and telephones administered for message delivery.

10. R1V8 Transition Guidelines
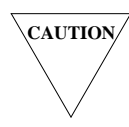
This chapter describes the prompt (system announcement) and dial plan (keystroke) differences between the R1V8 software release and previous versions. This chapter summarizes the changes administrators should be aware of and information they should pass on to the subscriber population if their AUDIX system is upgraded to run R1V8 software and the streamlined user interface.

OVERVIEW

The AUDIX subscriber interface has been enhanced in the R1V8 software release, allowing subscribers to enter fewer keystrokes to perform the same operations they did on earlier releases of AUDIX software. This enhancement is sometimes called the *streamlined user interface*, particularly when the standard announcement set is installed.

This chapter summarizes the R1V8 user interface enhancements. It also details the dial plan (keystroke) changes that both administrators and subscribers need to be aware of when their system has been upgraded from an earlier release of AUDIX software to R1V8.

> ⚠ **CAUTION**   *Failure to distribute this information to the subscriber population prior to an R1V8 upgrade could lead to substantial subscriber confusion and numerous phone calls to you (the system administrator). Please follow the steps in this chapter to help make the transition as smooth as possible.*

SUMMARY OF R1V8 CHANGES

While most of the commands and subscriber operations work identically between R1V8 and earlier releases, some prompt and keystroke changes were introduced in the R1V8 software release that affect both administrators and the subscriber population. These changes include:

- There are several instances where the keys subscribers must press to do a certain AUDIX function (such as make a message private) differ between the R1V8 release and earlier software versions. These key-press sequences, called the *dial plan*, are the greatest potential source of subscriber confusion when you upgrade to an R1V8 software load. All keystroke changes are listed individually in the following *Subscriber Interface Enhancements* section.

  > ⚠ **CAUTION**   *It is **crucial** to distribute information about keystroke changes to the subscriber population prior to the R1V8 upgrade to prevent subscriber frustration and numerous phone calls to you. The **Steps to Inform Subscribers** section at the end of this chapter contains a checklist of steps you can use to make sure subscribers are informed about the R1V8 upgrade.*

- There are two new announcement sets for R1V8 software: standard and traditional. Unlike previous versions of AUDIX software, only one announcement set is shipped with each R1V8 system; you cannot later activate the other announcement set without expressly ordering it.

  — The *standard* announcement set takes maximum advantage of the reduced-keystroke sequences offered in R1V8 (for example, it prompts users to press $\boxed{\#}$ instead of $\boxed{*}$ $\boxed{\#}$ to approve messages). It is designed to be compatible with the DEFINITY AUDIX standard announcement set; this is particularly useful to customers whose voice-mail network includes AUDIX and DEFINITY AUDIX machines.

— The *traditional* announcement set contains prompts and announcements that imitate (as closely as possible) the announcements that were available in the R1V7 *abbreviated* (or terse) version of AUDIX system announcements (for example, it continues to prompt users to press ⸨*⸩ ⸨#⸩ to approve messages). The only announcement differences are those necessitated by changes to the dial plan (the keystrokes users must press).

The traditional announcement set is offered for those customers who wish to make the upgrade to R1V8 software as transparent to their users as possible. Although the ⸨#⸩ command will work on a traditional system everywhere it works on a standard system, the ⸨*⸩ ⸨#⸩ prompt has been retained specifically so subscribers who are upgraded to the new R1V8 announcement set will hear familiar prompts for keystrokes they are already accustomed to entering.

Refer to the *Announcement Sets* section in Chapter 7, *Ongoing Filesystem Administration*, for more information on R1V8 and earlier announcement sets.

- In R1V8 software, the ⸨*⸩ ⸨M⸩ (Menu) command is no longer used to access the options menu for making messages private or priority. In R1V8 software, subscribers are automatically placed in the options menu as soon as they approve message addressing. The R1V8 options menu has been expanded to include entries for filing a copy of a message in the filing cabinet, or scheduling a message for future delivery. These options are detailed in the following *Subscriber Interface Enhancements* section.

NOTE	The system administrator may optionally access a secondary options menu in R1V8 software when creating or editing broadcast messages or login announcements. Refer to the *Broadcast Messages* or *Login Announcement* section in Chapter 3, *Feature Administration*, for complete information on using these features on R1V8 or earlier systems.

SUBSCRIBER INTERFACE ENHANCEMENTS

Enhancements to the user interface in R1V8 are summarized in this section. Refer to the subscriber documentation for your version of R1V8 (standard or traditional) for additional diagrams of subscriber options and documents you may wish to distribute to the subscriber population.

NOTE	Although the announcements (prompts) differ slightly between the standard and traditional announcement sets, the options and keystroke sequences (dial plan) are identical between the two R1V8 announcement sets. The enhancements described in the following sections therefore apply to both standard and traditional AUDIX upgrades.

General Enhancements

Subscribers (or other callers) on both standard and traditional AUDIX R1V8 systems will experience the following improvements in AUDIX prompts, announcements, and keystroke sequences:

- Most [*][#] functions can be replaced with simply [#]. The only exceptions are those cases where [#] and [*][#] have different meanings:

  — When scanning the incoming or outgoing mailboxes, the [#] command skips to the next message or header, while the [*][#] command skips to the next category.

  — When reviewing mailing list entries, the [#] command skips to the next entry, while the [*][#] command ends the list review.

  — When responding to an AUDIX outcall, you must press [*][#] to cancel further outcalling notifications for this message (the [#] is interpreted as an attempt to enter your extension number).

  In all other cases, [#] and [*][#] are interchangeable. However, on traditional systems, the system continues to prompt for [*][#] specifically so subscribers who are already accustomed to entering [*] [#] will hear familiar prompts for commands, even though the [#] command will work.

- The error prompt has been shortened and the error tone moved to the beginning of the message. Subscribers on R1V8 systems can dial through the error message following the warble tone without having to wait for the entire error message to play.

- The deletion message for a partial string of digits has been shortened in R1V8. If a subscriber enters a few digits, then presses [*][D] (Delete), the system confirms the command by simply stating ''*Partial entry deleted*'' without listing the digits entered.

Call Answer Enhancement

Most callers who reach a subscriber's mailbox through the call answer feature simply leave a message and hang up. This operation is identical between the R1V8 release and previous software versions.

However, subscribers or other callers familiar with AUDIX commands knew they could access the options menu by pressing $\boxed{*}$ $\boxed{M}$ to make their call answer message private. Callers would then exit the options menu by pressing $\boxed{*}$ $\boxed{#}$ before either hanging up or using the $\boxed{*}$ $\boxed{#}$ command again to approve the message. This optional call-answer command sequence is shown in Figure 10-1, *R1V5 through R1V7 Call Answer Options*.
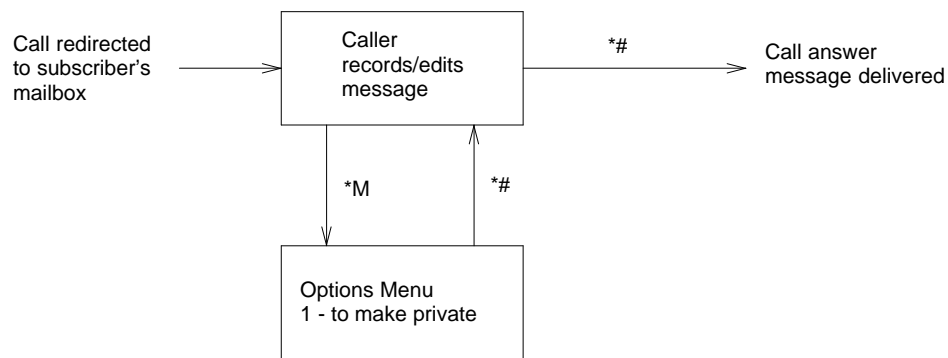
Figure 10-1. R1V5 through R1V7 Call Answer Options

In R1V8 software, the $\boxed{*}$ $\boxed{M}$ (Menu) command is no longer needed to access the options menu (refer to Figure 10-2, *R1V8 Call Answer Options*). Instead, callers should use the following steps in R1V8 to make a call answer message private:

- Record their call answer message as usual, then press $\boxed{#}$ or $\boxed{*}$ $\boxed{#}$ to approve the message.

- Press $\boxed{1}$ to make the message private.

- Press $\boxed{#}$ or $\boxed{*}$ $\boxed{#}$ again to deliver the message, or simply hang up.

Callers who approve their call answer message instead of simply hanging up are then free to enter other AUDIX commands, such as $\boxed{*}$ $\boxed{T}$ to transfer to another extension (if available), or $\boxed{*}$ $\boxed{R}$ (Restart) to log in to their own AUDIX mailbox.
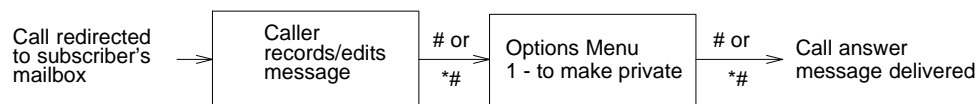
Figure 10-2. R1V8 Call Answer Options

Message Creation Enhancements

Subscribers on both standard and traditional AUDIX R1V8 systems will experience the following improvements in AUDIX prompts and keystrokes when creating or addressing AUDIX messages:

- Subscribers are placed in an options menu automatically when they approve the message address list. They can skip the menu simply by pressing (#) or (*)(#) to schedule their message for immediate delivery without options. Because subscribers are not forced to answer prompts for options they may not use (such as filing a copy of the message), the entire *required* message-delivery sequence takes fewer keystrokes to complete.

- Subscribers can select as many options from the options menu as they wish, or cancel them by pressing the same option number again. For example, pressing (1) the first time makes a message private, while pressing (1) again removes the *private* designation. Options include:

    — Pressing (1) to make a message private (non-forwardable), or (2) to make a message priority (positioned before other messages in the recipient's mailbox). Subscribers no longer have to press (*)(M) if they wish to send private or priority messages.

    — Pressing (3) to schedule message delivery, or pressing (4) to file a copy of the message in their outgoing mailbox. Filed messages can be retrieved later and modified; delivery options can also be altered through the outgoing mailbox if desired.

- Subscribers who pause more than five seconds during message addressing hear a prompt reminding them to enter more addresses or approve the address list.

- Subscribers can re-record or change the delivery options on messages through their outgoing mailbox. For example, they can make an *undelivered* message *private* by modifying the undelivered copy in the outgoing mailbox and scheduling it for delivery again.

The former dial plan (keystroke sequence) is shown in Figure 10-3, *R1V5 through R1V7 Message Creation/Delivery Options*. The new options and reduced-keystroke sequence for R1V8 software is shown in Figure 10-4, *R1V8 Message Creation/Delivery Options*.
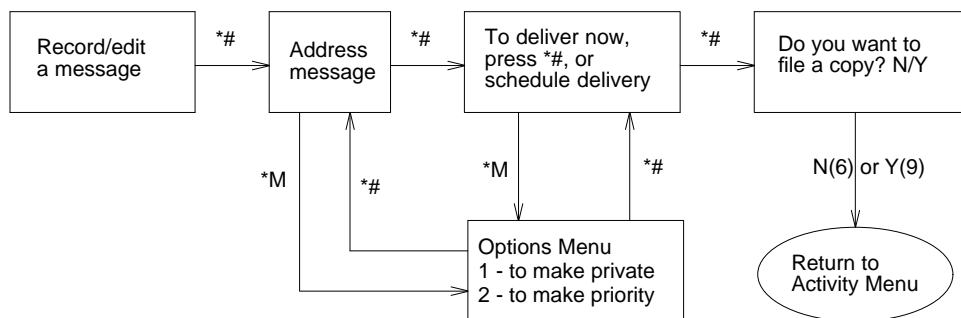
Figure 10-3. R1V5 through R1V7 Message Creation/Delivery Options
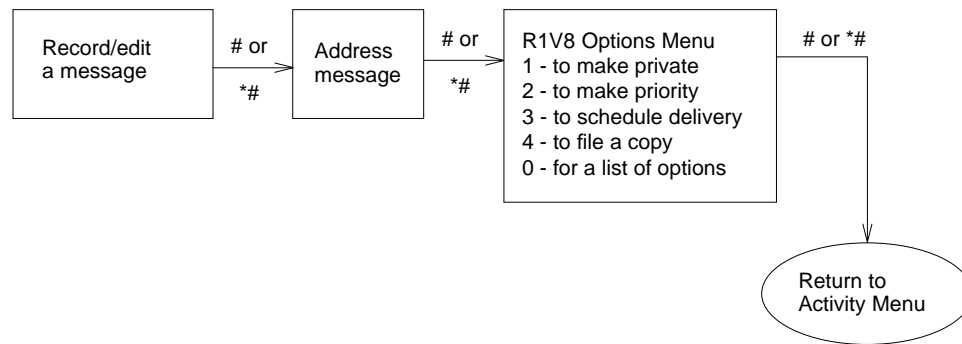
Figure 10-4. R1V8 Message Creation/Delivery Options

Message Scanning Enhancements

Subscribers on both standard and traditional AUDIX R1V8 systems will experience the following improvements in AUDIX announcements and options when listening to incoming AUDIX messages:

- Message headers in R1V8 software now include the length of the message. Short message lengths are described in tens of seconds, and longer messages in minutes. The length of the entire message header has been shortened.

- On all AUDIX systems, subscribers may respond to a message by pressing the ⎡1⎤ key after hearing a message. R1V8 subscribers have the option of simply pressing ⎡#⎤ or ⎡*⎤⎡#⎤ to return to getting incoming messages if they find themselves in a situation where they cannot (or choose not) to respond to an incoming message. This new Respond Loop Escape option is shown in the R1V8 subscriber quick-reference documents.

  Prior to R1V8, if subscribers attempted to respond using automatic addressing (the reply to sender feature) when automatic addressing was not available (for example, if they attempted to respond to an outside call), the system did not provide a graceful exit from the respond feature. Subscribers had to press ⎡*⎤⎡R⎤ (Restart) and re-enter the message-scanning activity if they decided to not (or could not) respond to a message.

STEPS TO INFORM SUBSCRIBERS

Subscribers must be notified about changes to the R1V8 user interface *before* the upgrade occurs. The more knowledgeable your subscribers are, the more likely it is they use many AUDIX options — making it even more essential to inform them of the upcoming changes well in advance. Experienced subscribers may have to break some old habits when taking advantage of the streamlined user interface.

Dial-Ahead and Dial-Through Feature Cautions

Subscribers who are already familiar with the AUDIX system often use the *dial-ahead* and *dial-through* features to enter several AUDIX commands in rapid sequence. These veteran subscribers are the ones who are most likely to encounter an error message or experience confusion when the dial plan (keystroke sequence) changes following an R1V8 upgrade.

For example, subscribers may be accustomed to pressing ⟨ * ⟩⟨ # ⟩, ⟨ * ⟩⟨ # ⟩, ⟨ N ⟩ to send a message immediately and *not* file a copy in the file cabinet (see Figure 10-3). In R1V8 software, however, the system has already returned the subscriber to the activity menu after the message is approved and scheduled for delivery; pressing either ⟨ # ⟩⟨ # ⟩ or ⟨ * ⟩⟨ # ⟩, ⟨ * ⟩⟨ # ⟩ is sufficient (see Figure 10-4). If the subscriber then presses the ⟨ 6 ⟩ key for ''no file cabinet copy'', the R1V8 system may interpret the ⟨ N ⟩ command as activity menu option ⟨ 6 ⟩, a request to enter the outcalling activity. A subscriber who has dialed ahead may be surprised to hear a summary of outcalling options.

In other cases, subscribers who dial ahead may simply hear an ''*Invalid entry*'' error message. For example, if a subscriber types ⟨ * ⟩⟨ # ⟩, ⟨ * ⟩⟨ # ⟩, ⟨ Y ⟩ in R1V8 software to send a message immediately *and* file a copy of it, the R1V8 software interprets the ⟨ Y ⟩ as a ⟨ 9 ⟩ at the activity menu. Unless the subscriber has announcement-control permission, he or she will hear a warble error tone, the ''*Invalid entry*'' message, then the first three options of the activity menu. If the subscriber had just typed several commands in sequence (using the dial-ahead and dial-through features), he or she may not know what command the AUDIX system is unable to interpret. Subscribers would have to use the ⟨ * ⟩⟨ H ⟩ (Help) command simply to find out where they were before they could enter an acceptable command or option.

Subscriber Notification Checklist

If you are planning to upgrade your system to standard or traditional R1V8 software, we recommend you use the following steps to inform the subscriber population of the upcoming changes *at least one week before* the upgrade occurs:

1. Create a broadcast message and/or login announcement to notify subscribers of the change. Refer to the *Broadcast Messages* and/or *Login Announcement* sections in Chapter 3, *Feature Administration*, for instructions on sending these messages on R1V8 or earlier systems.

2. Distribute the following transition letter to your subscriber population *before* the upgrade occurs. It is especially important for veteran subscribers to know that the keystroke sequence for several options will change.

3. Create a customized AUDIX tip sheet for your subscriber population using the information in this chapter and the subscriber artwork package (shipped in advance of the AUDIX system upgrade). Distribute your customized information to all subscribers. Refer to the artwork package for additional template letters useful for informing the subscriber population about AUDIX features.

4. Refer to Appendix A, *Communicating with Subscribers*, for additional guidelines for establishing communications channels and managing subscriber feedback.

Subscriber Transition Letter

The following sample letter provides an example of how to inform the subscriber population of enhancements and changes to the dial plan in R1V8 software. It may be reproduced and distributed as is, or you may customize the information before distributing it to your subscriber population. You will also find a ready-to-use copy of this letter in your subscriber artwork package.

Your New AUDIX Voice Messaging System: IT'S DIFFERENT

Your AUDIX voice messaging system is being upgraded to run a new release of software on
_____ at _____ . Although most features will
work the same as they did before, this bulletin covers some changes you need to be aware of.
Don't try dialing ahead using your old AUDIX keystroke sequences without reading this memo first!

Here's What's Different:

Pressing # to Approve, not *#

Instead of pressing *# to approve messages, addresses, or other functions, you can now just
press #. Pressing *# still works, but why push more buttons than you have to?

Sending Voice Mail Messages

When sending voice mail in the previous version of AUDIX software (see Figure 1), you
could select various delivery options in several places. This included using the *M (Menu)
option to make messages private or priority.
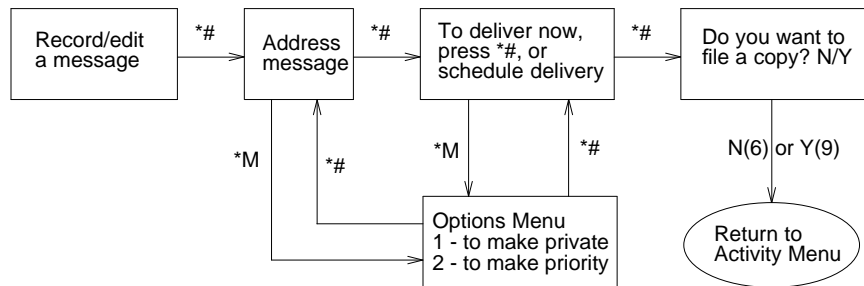
Figure 1: Previous Message Creation and Delivery Sequence

To send voice mail with the new AUDIX software (see Figure 2), the system automatically
places you in a delivery options menu after you approve a message and its address. From
there you can select any or all delivery and filing options, or you can choose to send the
message immediately without options by pressing #.
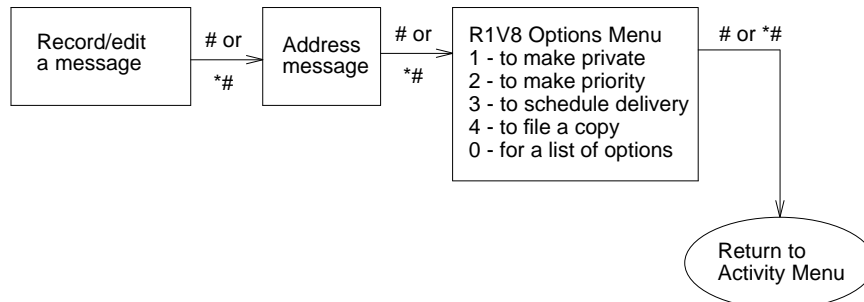
Figure 2: New Message Creation and Delivery Sequence

Leaving Private Call Answer Messages

In the previous version of AUDIX software, when the system redirected you to a subscriber's mailbox, you could make your message private (not forwardable) by using the *M (Menu) option *before* approving the message (see Figure 3).
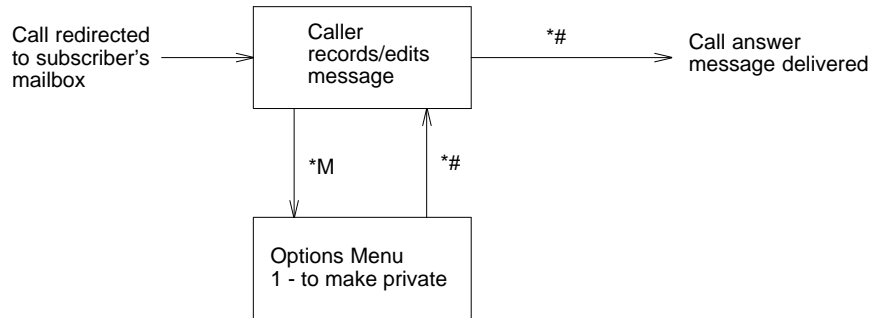
Figure 3: Previous Private Call Answer Sequence

The new AUDIX software lets you make a call answer message private *after* approving your message (see Figure 4). You can press # to "deliver" the message, or simply hang up.
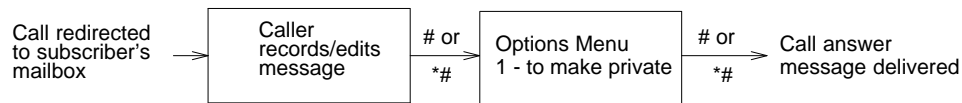
Figure 4: New Private Call Answer Sequence

Dialing through Error Prompts

In the earlier software release, when you pressed an invalid button, you had to listen to the entire error message before you could press another button:

> **"Entry not understood. Try again after the tone** <beep>**."**

In the new software, you hear an error tone immediately after pressing an invalid button. You can then *dial through* (interrupt) the error message without having to listen to it:

> **"**<beep> **Invalid entry. For help, press *H."**

Escaping from the Respond to Incoming Message Option

In the earlier software release, if you pressed **1** to respond to an incoming message, then changed your mind (or discovered you could *not* respond because the call came from outside the system), you had to return to the Activity Menu by pressing *R (Restart), then re-enter the *Get Messages* activity by pressing **2**.

In the new software, you can "escape" from the Respond to Sender option by pressing **#**. This backs you up one step and returns you to getting messages.

11. Automated Attendant

This chapter describes how to define and administer automated attendants and provides examples you can modify to fit your particular requirements. Information is organized as follows:

OVERVIEW

The automated attendant feature allows you to set up automatic answering services that provide callers with a voice menu of options for transferring calls to other extensions. This section summarizes automated attendant applications and prerequisites for use.

Main and Nested Automated Attendants

An automated attendant can be used to answer your company's phone and prompt callers to dial extensions directly (if they know the number), transfer to a subscriber's mailbox using name addressing, or press the appropriate key on their touch-tone phones in response to a voice prompt to have the system transfer the call for them. The automated attendant can have as many as 10 menu options, corresponding to the buttons 0 through 9 on a touch-tone telephone. This *main* or *first-level* attendant might provide the following options:

```
Thank you for calling Smith and Jones.
To transfer to a specific extension, enter that extension.
To reach the sales department, press 1.
To reach the accounting department, press 2.
To reach the personnel department, press 3.
To get further assistance, press 0 or wait.
```

Switch administration determines the circumstances for routing calls to the attendant's extension. For example, the switch could be administered to route all incoming calls to this extension instead of to a receptionist, or to only route calls to this extension after normal business hours or during busy periods when the volume of incoming traffic overwhelms your call-answering resources.

A main attendant can also be set up to answer extensions for departments within your company. For example, a caller who dials the accounting department's extension could hear the following options from that department's automated attendant:

```
This is the Accounting department.
To reach Accounts Payable, press 1.
To reach Accounts Receivable, press 2.
To reach Payroll, press 3.
To transfer to a specific extension, enter that extension.
To get further assistance, press 0 or wait.
```

If your AUDIX system is connected to a switch via a data link, you can set up any number of main attendants. An extension must be administered on the switch for each automated attendant that may be directly accessed by callers. If you have a standalone AUDIX system, you are limited to one main attendant. This is because the main attendant requires dedicated ports for a standalone AUDIX system. If you have an integrated data link to an SL-1 switch, you are limited to three main attendants.

Automated attendants may also be *nested* behind a main attendant so that selection of an option on the main attendant's menu invokes a secondary automated attendant. For example, when an external caller selects option 2 in the first example above, he or she could next hear the accounting department's automated attendant shown in the second example.

Transfers from an automated attendant to a nested automated attendant remain in the AUDIX system and are not transferred through the switch. This means there is no delay between the action selected at the first attendant and the beginning of the selected attendant's voice prompt. It also means you can set up any number of levels of nested attendants, even with a standalone AUDIX system, because attendants that are accessed only by other attendants can be associated with extensions in the AUDIX system that are not administered at the switch.

Automated Attendant Applications

As described in the previous section, you can administer automated attendants to transfer calls directly into an AUDIX mailbox without going back through the switch as in a normal call transfer to another telephone number. This provides a mechanism for using automated attendants to accommodate unusual situations such as collecting messages for individuals who share an extension or for non-resident subscribers who do not have an extension administered on the switch.

For example, if the payroll department shares a single extension, a caller who selected option 3 to reach the payroll department in the previous example could get the following options from an automated attendant if the telephone is not answered or the extension is busy:

```
This is Payroll.  No one is available right now.
To leave a message for Bill Smith, press 1.
To leave a message for Mary Jones, press 2.
To leave a message for John Doe, press 3.
To get further assistance, press 0 or wait.
```

Each of the extension's users would be administered as an AUDIX user and each would be associated with a different AUDIX extension that is not administered on the switch. Callers who press the button associated with an individual are then transferred directly to that individual's AUDIX mailbox by the automated attendant. Depending on administration, the caller could hear the AUDIX system's guest greeting or the non-resident subscriber's call answer greeting.

Similarly, an automated attendant could be used for non-resident subscribers such as outside sales personnel who do not have extensions on the switch but need to have clients leave messages. In this case, the non-resident subscribers would be administered as AUDIX subscribers on extensions that do not exist on the switch as in the previous example. Callers could then call the automated attendant's extension, enter the subscriber's mailbox number (the non-resident subscriber extension), and transfer directly to that mailbox to leave a message. Depending on administration, the caller could hear the AUDIX system's guest greeting or the non-resident subscriber's call answer greeting.

Automated attendants can also serve as bulletin board directories, allowing you to use non-resident subscriber extensions for information service bulletin boards and have just one extension — the automated attendant — administered on the switch to answer bulletin board calls and route callers to specific bulletin boards.

You can also use the multiple personal greetings feature to customize an automated attendant's spoken menu (which is actually the extension's personal greeting) for different call types, such as for out-of-hours calls and internal/external or busy/no-answer calls. This customization could be cosmetic, such as a formal or informal personal greeting depending on whether the call is external or internal, or it could voice a different set of options, such as offering a restricted menu of choices to out-of-hours callers.

These are just a few of the useful applications for the automated attendant feature that are described in this chapter. As you will see, this feature is limited only by your imagination and your requirements for having calls transferred without human intervention.

Prerequisites

For the automated attendant feature to work with full functionality, the call transfer out of AUDIX feature must be activated on the `system : appearance` form. You must indicate a `y` for yes in the `call transfer out of AUDIX feature` field; if `n` is entered instead, you cannot use the `t` treatment type on the `system : attendant` form. For security purposes, the enhanced call transfer feature is strongly recommended (refer to the *Transfer Out of AUDIX* section in Chapter 3, *Feature Administration,* for more information).

When the AUDIX system is integrated with the switch, the automated attendant extension must be redirected to the AUDIX extension using either the Call Coverage or Call Forwarding features. Calls are then sent to the attendant mailbox where the menu of options is heard. For standalone AUDIX systems, any call (direct or redirected) to one of the AUDIX a-type ports is sent to a single attendant mailbox (identified on the `system : translation : switch connection` form). Also, depending on your switch model and software version, there may be some additional switch administration requirements.

AUTOMATED ATTENDANT ADMINISTRATION

Automated attendants are set up as AUDIX subscribers on the `subscriber : local` form and appear the same as regular subscribers except they are identified as an automated attendant in the `permissions, type` field. If you wish the automated attendant to use name or extension addressing, you would specify that on the `subscriber : local` form as well. Generally, administering an automated attendant requires the following steps:

1. Define the automated attendant as a subscriber on the `subscriber : local` form (set `permission, type` to be `a` to establish the subscriber as an automated attendant).

2. Administer the attendant using the `system : attendant` form.

3. Record the attendant menu using your touch-tone telephone.

If the automated attendant extension is to be called directly, the attendant's extension must be administered at the switch. If the attendant will be reached only by other automated attendants, it can be an extension administered in the AUDIX system but not on the switch. In this case, the `switch number` on the `subscriber : local` form is set to `0` and the extension is considered a ''phantom'' extension.

The menu options that are voiced by the automated attendant are actually the automated attendant extension's personal greeting that you record. This is convenient because you can easily change the text of the message just as you would any personal greeting, and you can also use the multiple personal greetings feature to provide different menus and options for different types of callers.

The actions each attendant performs when specific buttons are pressed are specified on the `system : attendant` form. Buttons are assigned to extensions as appropriate and assigned a treatment code to determine if the AUDIX system should transfer the call through the switch to an extension's telephone (the usual case) or directly into the extension's mailbox to leave a message.

If the call is transferred directly to a mailbox, the treatment code also specifies whether the system guest greeting or the subscriber's call answer greeting is played. The system guest greeting is played if the treatment is `g`. If the treatment is `ca`, the attendant's menu is played out (if no menu is recorded, an error message plays).

Task 1: Define the Attendant

Define the automated attendant in the same manner that you would set up a new local subscriber on the `subscriber : local` form. Be sure to identify the attendant as such in the `permissions, type` field (set type to `a`).

Select the default addressing format by entering an `e` for extension addressing or an `n` for name addressing in the `addressing format` field. If you select transfers by name, callers can still transfer by extension if they press *T and enter an extension number and pound sign.

> **NOTE**
>
> If you plan to use a number of automated attendants, you might want to set up a class of service with the `permissions, type` field already set to `a` (attendant) for use with automated attendants. If so, be sure that existing subscribers are not already assigned to that class of service. Also, you must run the `subscriber : data` audit before class of service changes will be effective for automated attendants.

Task 2: Administer the Attendant Menu

Use the `system : attendant` form to administer automated attendant menu options. Be prepared to supply the following information for the attendant:

- The attendant's name

- The attendant's extension

- The number of seconds to wait for time-out when a caller does not respond to a prompt

- If *T transfers out of this attendant are allowed

  The *T (Transfer) command allows callers to transfer from the automated attendant to a specified extension, after pressing #. Because *T takes more keystrokes than regular automated attendant transfers, *T is typically included in the attendant's list of menu options only when the attendant's options require use of all the buttons. The call transfer out of AUDIX feature must be turned on before you can use *T.

For each button (0 through 9) that is active for the attendant, you need to know:

- The extension to which to transfer the call when each button is pressed. What you enter in the `extension` field varies depending on whether you have administered the automated attendant to transfer by name or extension on the `subscriber : local` form:

  — If the automated attendant is administered to use extension addressing, callers can dial an extension of their choice directly from the automated attendant simply by entering the extension number. For this option to work, you must designate as `e` the button whose number corresponds to the first digit of the extension numbers on your switch. More than one button can be assigned as `e` if necessary.

    For example, if internal extensions begin with 5, you would assign that button as extension `e` to allow direct transfers to another internal extension from this attendant. You *cannot* also use button 5 *in this same attendant* for a separate menu selection if you want the extension transfer option to work (for example, "*To reach accounting, press 5.*") However, if you *don't* want to use the `e` option, you can assign button 5 to transfer calls to any valid extension you wish; you can also use the `e` option on some attendants and not on others.

  — If you want an attendant to transfer calls to other extensions by callers entering names instead of extensions, *all* buttons from 2 through 9 must be designated as `e`. This allows callers to spell out the name of the person to whom they wish to transfer. An example of an automated attendant administered for name transfers appears in the following *Automated Attendant Examples* section.

  > **NOTE**
  >
  > Pay particular attention to the switch dial plan when assigning the *e* option. Consider that some extensions within the group may not exist, may not be assigned, may be assigned to special features like hunt groups or vectors, may be assigned to the attendant console, may be assigned to a DCS node, or may be assigned to the AUDIX voice ports. Any of these situations may cause problems when a caller attempts to dial one of them.

- A transfer treatment code to specify whether the call is to transfer to the extension's telephone (`t`) or directly to the extension's mailbox to play the subscriber's call answer greeting (`ca`) or the system guest greeting (`g`). If the treatment is `ca`, the attendant's menu is played out (if no menu is recorded, an error message plays).

- The length of time-out allowed before the caller is automatically transferred out of the automated attendant to a different extension, the extension to transfer the call to in this circumstance, and the treatment code for the timed-out calls. If the call is transferred, it appears as a direct call to the extension it transfers to and follows that extension's coverage path.

- A brief comment describing the button's function. This is your only record of the attendant's button functions and associated extension numbers, so spelling it out now in the `comment` field may save you some time later if you have to modify the attendant's functions.

Task 3: Record the Attendant Menu

Use your touch-tone telephone to record the automated attendant menu that will be spoken to callers. This menu is actually the personal greeting for the attendant's extension. In the menu, you may want to include the following:

- A greeting followed by the menu choices available to the caller

- An instruction on using name addressing (if the attendant is administered to transfer by name) — for example, ''*Enter the name of the person to whom you wish to transfer, last name first*''

- An instruction on pressing ***T** to transfer to a specific extension, followed by **#** (if *T is active for the attendant)

- An instruction to wait if a time-out extension is administered

- An instruction on pressing ***H** to repeat the menu

Decide if you will use a single message to describe all parts of the menu or if you will use the multiple personal greetings feature to record a variety of messages to be played for the various call types. The recording of an attendant menu is done in the same way as recording a personal greeting. It is a good idea to write down the menus and greeting numbers and keep them in this document so that you will have them if you need to re-record them at a later time.

To record an automated attendant menu if the multiple personal greetings feature is *not* activated:

1. Log in to the AUDIX voice mail system as the automated attendant using the extension and password you assigned on the `subscriber : local` form.

2. At the activity menu, press **3** to administer (record) the attendant menu greeting(s).

3. Press **1** to record the attendant menu.

4. At the tone, speak the menu and then press **1** to stop the recording.

5. Press **2** or **3** if you want to listen to the menu.

6. Press ***D** to delete and re-record the menu, or press ***#** or **#** to approve it.

To record an automated attendant menu if the multiple personal greetings feature is activated, refer to the multiple personal greetings feature in *AUDIX Feature Descriptions* (585-305-203) and enter the menu options the same as for a subscriber entering personal greetings. Refer to the *Using Multiple Greetings for Automated Attendants* later in this chapter for more information on this feature.

NOTE	If your system should lose any voice messages, perhaps due to a disk crash, you must check each of the automated attendant menus to ensure that they were not lost. It would be a good idea to write down the text of the menus and keep them together as a precaution. If an automated attendant menu is lost, simply re-record it. If an automated attendant menu is lost or was never recorded, the AUDIX system will make an entry in the administrative system log each time a caller calls the automated attendant extension. You can view these logs by accessing the `system : log : display` form.

Task 4: For Standalone AUDIX Systems, Define Options

This step is to be done only if your AUDIX system is in a Standalone configuration.

Use the `system : translation: switch connection` form to define standalone options. Be sure to designate the port call type as `a` and identify the extension number assigned to the automated attendant for calls that come in on the a-type ports.

NOTE	If you want to have a main automated attendant, a separate hunt group must be set up on the switch for those calls. Check with the switch administrator to ensure that this has been done. Detailed switch information for AUDIX systems can be found in *AUDIX Installation* (585-305-105).

Task 5: List Automated Attendants

After you have administered an automated attendant, list your system's automated attendants to confirm your entry. Use the `list : attendant` form to list automated attendants. Automated attendants are listed sequentially by ascending extension on the form. To start at a particular extension, type the extension number in the `extension` field.

AUTOMATED ATTENDANT EXAMPLES

The examples on the following pages describe some of the applications for the automated attendant feature. Use these examples as models when defining your own automated attendants.

Setting Up a Main Attendant

A main attendant is an attendant that can be reached directly by callers who dial its extension number. This attendant can answer your company's main phone, or it can answer a department's main phone. It must be associated with an extension that is administered on the switch.

Figure 11-1, *Sample Main Automated Attendant*, shows an automated attendant set up to answer the company's main phone. The menu offers callers the option of transferring to the sales, accounting, or personnel departments by pressing a number or dialing any internal extension that begins with 5, or transferring to a receptionist. If the caller does not respond within five seconds, the call is transferred automatically to the receptionist. If the caller chooses to transfer to accounting, they will immediately hear the call answer greeting active for the mailbox associated with extension 5600 rather than transferring through the switch (because of the ca treatment).

```
AUDIX STATUS:  alarms: none,  logins: 1,  thresholds: none
 ┌──────────────────────────────────────────────────────────────┐
 │  PATH:  system : attendant                                     │
 └──────────────────────────────────────────────────────────────┘
name: main attendant                  automated attendant extension: 5000
(PRESS ENTER TO DISPLAY SERVICE OPTIONS)
allow *T (call transfer) y/n? n

 button    extension    treatment          comment
   1:        5500          t_            transfer to sales_____
   2:        5600          ca            accounting_____
   3:        5700          t_            transfer to personnel_____
   4:        ____          __            _____
   5:        e___          t_            transfer to ext 5xxx as requested____
   6:        ____          __            _____
   7:        ____          __            _____
   8:        ____          __            _____
   9:        ____          __            _____
   0:        5001          t_            transfer to receptionist_____
 time-out:   5001          t_            for time-out, transfer to receptionist

length of time-out on initial entry (sec): 5

 ┌──────────────────────────────────────────────────────────────┐
 │                                                                │
 └──────────────────────────────────────────────────────────────┘
Error and confirmation messages appear here.

 ┌─────────┬───────┬────────┐  ┌──────┬───────┐  ┌───────┬──────┬───────┐
 │ CHANGE  │ ADD   │ DELETE │  │ HELP │ FIELD │  │ CLEAR │ EXIT │ ENTER │
 │ or RUN  │       │        │  │      │ HELP  │  │ FORM  │      │       │
 └─────────┴───────┴────────┘  └──────┴───────┘  └───────┴──────┴───────┘
```

Figure 11-1. Sample Main Automated Attendant

Switch administration determines the circumstances for routing calls to the main attendant's extension. For example, the switch could be administered to route all incoming calls to this extension instead of to a receptionist, or to only route calls to this extension after normal business hours or during busy periods when the volume of incoming traffic overwhelms your call-answering resources.

Setting Up Nested Attendants

A nested attendant is an attendant that is invoked by another attendant. The nested attendant may also be a main attendant; that is, the extension can be reached directly by internal and external callers who dial the extension number directly.

For example, callers who dial the accounting department's extension directly could hear voice options from a main attendant for that department, as could callers who transferred to the accounting department by pressing 2 at the main menu in the previous example. The accounting department's attendant is said to be *nested* beneath the company's main menu. Additional menus could be nested beneath the accounting department's attendant, such as for transferring to the payroll desk or accounts receivable desk. A simple example of this application is shown by the following table. In this example, pressing 2 at the main menu plays out the accounting department's attendant; pressing 3 at that attendant transfers the call to the payroll department's extension.

Attendant	Button	Extension	Treatment	Comment
main	2	5600	ca	accounting attendant
accounting	3	5605	t	transfer to payroll extension

To the caller, this nesting is transparent because the nested attendant is invoked immediately by the AUDIX system without transferring the caller through the switch. The caller in this example would hear the main attendant options, then either press 2 and immediately hear the accounting department attendant options, or press 3 to transfer to the payroll extension through the switch.

Setting Up Shared Extensions

Several subscribers sharing a single phone (shared extensions) require that the AUDIX system provide a simple method for the calling party to leave a message for the called extension (any of the users) or for a specific individual. An automated attendant can handle this task by providing callers with options to leave a message for the extension or any of the individuals who share it. The attendant extension is administered at the switch, while non-resident subscriber extensions in the AUDIX system (not administered at the switch) are used for each of the sharing subscribers. The automated attendant can move callers directly to these mailboxes to leave messages.

NOTE	Because message waiting lamps are associated with individual telephone sets and not with AUDIX mailboxes, the lamp for a shared extension will be activated when a new message is in the mailbox for the extension number that is shared, but not when new messages are in the mailboxes of the sharing users.

Figure 11-2, *Sample Shared Extensions Attendant Setup*, illustrates this feature. In this example, assume that the company has set up an information desk with a single telephone to provide callers with any necessary information or assistance. Two people answer the telephone during the day. They do not have individual phones and can only be reached through the information desk. They are administered as AUDIX

subscribers and are associated with extensions in the AUDIX system that are not administered on the switch.

```
AUDIX STATUS:  alarms: none,  logins: 1,  thresholds: none
 PATH:   system : attendant

name: info desk                          automated attendant extension: 5555
(PRESS ENTER TO DISPLAY SERVICE OPTIONS)
allow *T (call transfer) y/n? y

 button    extension    treatment          comment
   1:        5555          g_         leave message for info desk (guest)___
   2:        9001          ca         leave message for George Smith_____
   3:        9002          ca         leave message for Jane Doe_____
   4:        ____          __         _____
   5:        ____          __         _____
   6:        ____          __         _____
   7:        ____          __         _____
   8:        ____          __         _____
   9:        ____          __         _____
   0:        5001          t_         transfer to receptionist_____
 time-out:   5555          g_         on time-out, voice guest greeting_____

length of time-out on initial entry (sec): 5

_____

Error and confirmation messages appear here.

┌─────────┬───────┬────────┐   ┌──────┬───────┐   ┌────────┬──────┬───────┐
│ CHANGE  │  ADD  │ DELETE │   │ HELP │ FIELD │   │ CLEAR  │ EXIT │ ENTER │
│ or RUN  │       │        │   │      │ HELP  │   │ FORM   │      │       │
└─────────┴───────┴────────┘   └──────┴───────┘   └────────┴──────┴───────┘
```

Figure 11-2. Sample Shared Extensions Attendant Setup

If someone calls the information desk and the telephone is not answered or is busy, the call is routed to the AUDIX system automated attendant. The automated attendant in this example prompts callers to leave a message for the information desk or for one of the individuals who staff the desk.

If the caller selects an individual (button 2 or 3 in this example), the caller is moved directly to the subscriber's AUDIX mailbox to hear the individual's call answer greeting and then leave a message. If the caller does not respond to the automated attendant prompt within five seconds, the AUDIX system will prompt with the system guest password greeting (''*Please leave a message for <name>*''). The voiced name in this example would be whatever name had been recorded for the subscriber with extension 5555, probably *information desk* since that is the name of the extension.

A message left in the mailbox of the information desk extension will light the extension's message waiting lamp in this example, a message left in the mailbox of one of the sharing individuals will not. These individuals must call into the AUDIX system to check for messages or use the Outcalling feature.

This example illustrates a recursive use of the automated attendant extension 5555, where a time-out returns to the attendant extension. The g treatment code is the only allowable treatment when the condition is recursive. (If the treatment were ca for a recursive extension, the caller would merely hear a repeat of the attendant menu when making that selection. If the treatment were t, the caller would be transferred back through the switch to the same automated attendant and then hear the same menu repeated again. If these conditions were allowed, a caller could call extension 5555, set the handset down, and tie up the port forever in a loop.)

Setting Up Non-Resident Subscriber Extensions

Non-resident subscribers are by definition AUDIX subscribers who do not have an extension on a switch that is served by the AUDIX machine. Mailbox numbers in the AUDIX system for these subscribers correspond to AUDIX extensions that are not administered on the switch. (The subscribers with extensions 9001 and 9002 in the previous example are non-resident subscribers.)

Another example of a non-resident subscriber is an outside sales representative who needs to receive messages from clients. To accommodate this type of user, an automated attendant can be set up to transfer callers directly to non-resident subscriber mailboxes. The caller would need to know only the number of the automated attendant and the non-resident subscriber's mailbox number to leave a message. Once in the non-resident subscriber's mailbox, the caller would hear either the system guest greeting or the non-resident subscriber's call answer greeting, depending on the transfer treatment that is specified on the `system :
attendant` form.

Figure 11-3, *Sample Non-Resident Subscriber Attendant Setup*, shows an example where the extension number for each non-resident subscriber is a five-digit number beginning with 2, and the extension number for the automated attendant is 20000. The non-resident subscriber would give clients the number of the automated attendant to call and their own mailbox number. Clients would dial 20000, listen to the automated attendant menu, enter the non-resident subscriber's mailbox number, listen to the subscriber's personal greeting, and leave a message. If the caller does not begin entering the mailbox number within five seconds, the call would be transferred to a sales clerk.

If the treatment for calls transferred directly to mailboxes was `g` instead of `ca`, callers would hear the system guest greeting (''*Please leave a message for <name>*'') instead of the non-resident subscriber's personal greeting.

```
AUDIX STATUS:  alarms: none,  logins: 1,  thresholds: none
  PATH:   system : attendant

name: sales desk                      automated attendant extension: 20000
(PRESS ENTER TO DISPLAY SERVICE OPTIONS)
allow *T (call transfer) y/n? n

 button    extension    treatment          comment
   1:       _____         __       _____
   2:       _____         __       _____
   3:       _____         __       _____
   4:       _____         __       _____
   5:       _____         __       _____
   6:       _____         __       _____
   7:       _____         __       _____
   8:       _____         __       _____
   9:       e____         ca       leave message for sales rep_____
   0:       20002         t_       transfer to receptionist_____
 time-out:  21234         t_       for time-out, transfer to sales clerk___

length of time-out on initial entry (sec): 5

[_____]

Error and confirmation messages appear here.

┌─────────┬─────┬────────┐   ┌──────┬───────┐   ┌───────┬──────┬───────┐
│ CHANGE  │ ADD │ DELETE │   │ HELP │ FIELD │   │ CLEAR │ EXIT │ ENTER │
│ or RUN  │     │        │   │      │ HELP  │   │ FORM  │      │       │
└─────────┴─────┴────────┘   └──────┴───────┘   └───────┴──────┴───────┘
```

Figure 11-3. Sample Non-Resident Subscriber Attendant Setup

Setting Up Attendant Transfers by Name

If an automated attendant is administered to transfer by name on the subscriber : local form, you must administer *all* buttons from 2 through 9 as extension e. This allows callers to spell out the name of the person to whom they wish to transfer.

Figure 11-4, *Sample Transfer-by-Name Attendant Setup*, shows an example of an automated attendant administered for name transfers. As with other e or transfer options, the call transfer out of AUDIX feature must be activated on the system : appearance form for this feature to work.

The voiced menu for an automated attendant should indicate that the caller should dial the name of the person to whom they wish to transfer, last name first. Because they will only use the numbers 2 through 9 to ''spell'' a name, you can code buttons 1 and 0 to transfer them directly to another destination (such as the operator or secretary in this example). The menu can also instruct callers how to transfer by extension if they wish (for example, ''*To transfer to an extension, type* ***T** *followed by a four-digit extension number, and pound sign*'').

```
AUDIX STATUS:  alarms: none,  logins: 1,  thresholds: none
 PATH:  system : attendant

name: nametransfer                   automated attendant extension: 4222
(PRESS ENTER TO DISPLAY SERVICE OPTIONS)
allow *T (call transfer) y/n? y

 button    extension    treatment          comment
    1:       4111          t_       transfer to company operator_____
    2:        e           t_       abc_____
    3:        e           t_       def_____
    4:        e           t_       ghi_____
    5:        e           t_       jkl_____
    6:        e           t_       mno_____
    7:        e           t_       pqrs_____
    8:        e           t_       tuv_____
    9:        e           t_       wxyz_____
    0:       4333          t_       transfer to dept. secretary_____
time-out:    4111          t_       transfer to company operator_____

length of time-out on initial entry (sec): 3


Error and confirmation messages appear here.

CHANGE    ADD    DELETE         HELP    FIELD          CLEAR    EXIT    ENTER
or RUN                                  HELP           FORM
```

Figure 11-4. Sample Transfer-by-Name Attendant Setup

The transfer-by-name feature offers the following additional features:

- Callers do not have to end their entry with a # sign (as they would if they were using *T to transfer). After a brief time-out, the system transfers the call.

- If callers specify enough characters to uniquely identify a subscriber, the call is transferred immediately. If not, the system will prompt them for additional characters as follows:

  — If the system can narrow down the choice of subscriber to three or less, it will prompt them to press 1 for subscriber A, 2 for subscriber B, or 3 for subscriber C. Callers then select the correct number and are transferred immediately.

  — If the system cannot narrow down the choice of subscriber to three or less, it will prompt them to enter more characters. Callers will be prompted to continue entering characters until the system can uniquely identify a subscriber, or present them with a list of three choices.

- If the caller makes no additional entries following the system prompt for more characters, the system will wait a few seconds, then prompt them again to enter more digits for a name. If the caller still enters no characters, the system will either transfer the call to the extension specified in the time-out field (if one is administered), or repeat the main menu of instructions or options (if the time-out field is blank). Calls are not simply abandoned or dropped.

Setting Up Bulletin Board Directories

An automated attendant may present multiple choices for listening to bulletin board messages that are set up with the information service bulletin board feature. Use the `ca` treatment on the `system :  attendant` form for bulletin board extensions to route callers directly into the selected bulletin board's mailbox. For example, you could set up an automated attendant with the options shown in Figure 11-5, *Sample Bulletin Board Attendant Setup*.

```
AUDIX STATUS:  alarms: none,  logins: 1,  thresholds: none
  PATH:  system : attendant

name: bbdirectory                    automated attendant extension: 8000
(PRESS ENTER TO DISPLAY SERVICE OPTIONS)
allow *T (call transfer) y/n? n

 button    extension    treatment         comment
   1:        9050          ca      general info bulletin boards_____
   2:        9051          ca      benefits bulletin board_____
   3:        9052          ca      activities bulletin board_____
   4:        ____          __      _____
   5:        ____          __      _____
   6:        ____          __      _____
   7:        ____          __      _____
   8:        ____          __      _____
   9:        ____          __      _____
   0:        ____          __      _____
 time-out:   8000          g_      for time-out, use guest greeting_____

length of time-out on initial entry (sec): 5

[                                                                       ]
Error and confirmation messages appear here.

 CHANGE  | ADD | DELETE  |  HELP  | FIELD |  CLEAR | EXIT | ENTER
 or RUN  |     |         |        | HELP  |  FORM  |      |
```

Figure 11-5. Sample Bulletin Board Attendant Setup

In this example, the automated attendant would prompt the caller to press the appropriate button to hear a bulletin board message. Callers are not allowed to use *T call transfer from this attendant since it is disallowed on `system : attendant` form.

Bulletin board extensions in this example are AUDIX extensions that are not administered at the switch. These extensions can only be reached by dialing this automated attendant. Callers who select one of these extensions are moved directly to the extension's mailbox to hear the message.

Using Multiple Greetings for Automated Attendants

The automated attendant feature can be quite flexible when used with the multiple personal greetings feature. Since the voiced options menu is the personal greeting for the automated attendant's extension, administering personal greetings is the same as for any subscriber.

The multiple personal greetings feature allows you to specify as many as nine unique personal greetings for the extension, and to specify circumstances for using different greetings, such as for internal and external calls, busy and no-answer calls, and out-of-hours calls. Use the `system : appearance` form to define the out-of-hours period; calls made outside of prime time as defined on that form are considered out-of-hours. If an out-of-hours greeting is selected, it will override internal/external and busy/no-answer identification for all calls received during the designated out-of hours. Note that multiple greetings can be set up for *either* internal/external or busy/no-answer, but *not for both* internal/external and busy/no-answer at the same time.

When used for an automated attendant, multiple personal greetings allow you to provide not only different greetings, but to voice different options for selected types of callers. For example, you could define the following greetings for the automated attendant:

1. For all external calls, the greeting is:

        Thank you for calling Smith and Jones.
        To transfer to a specific extension, enter that extension.
        To reach the sales department, press 1.
        To reach the accounting department, press 2.
        To reach the personnel department, press 3.
        To get further assistance, press 0 or wait.

2. For all internal calls, the greeting is:

        To reach a specific person, enter the extension.
        To reach sales, press 1.
        To reach accounting, press 2.
        To reach personnel, press 3.
        To reach Security, press 8
        To access employee bulletin board information, press 9.

3. For all out-of-hours callers, the greeting is:

        Thank you for calling Smith and Jones.
        Our normal office hours are 8 a.m. to 5 p.m.
        Monday through Friday.
        To leave a message for a specific person, enter
        the extension using your touch-tone telephone.
        If this is an emergency, please press 8.

This example allows the automated attendant to voice specific information for different types of callers and to exclude or include options depending on caller type. Note that all options listed on the `system :`
`attendant` form are still available to all callers, they are just not listed as options in the greeting.

12. AUDIX Capacity Planning

This chapter describes how to plan for future growth in your AUDIX system and measure your current configuration's performance efficiency. Information is organized as follows:

OVERVIEW

In addition to the regular preventive maintenance tasks described in Chapter 5, *Ongoing Preventive Maintenance*, you should measure your AUDIX port and disk capacity requirements on a regular basis to determine if your AUDIX system is performing efficiently and to determine how much additional capacity you may need in the future as you add more subscribers or additional capabilities.

To perform efficiently, your AUDIX port and disk configuration must be in line with your actual usage requirements. Your initial configuration was based on assumptions about how much time users will spend accessing the AUDIX system and how much space will be needed to store messages. If these assumptions were incorrect or you have since outgrown the initial configuration, AUDIX system performance may be less than optimal.

MEASURING AUDIX PORT CAPACITY REQUIREMENTS

AUDIX voice port requirements are based on the use of ports for all applications, including call answer, voice mail, automated attendant, and outcalling. Ideally, enough ports should be provided so a port is always available. However, this is not necessary since calls are queued in an ACD or hunt group until a port is available.

A valuable yardstick of system efficiency is the grade of service (GOS), which is the percentage of calls that are queued longer than 10 percent of the average holding time on the ports. You should calculate your current GOS periodically to determine if your system has enough port capacity to perform as you expect it to and to plan for future growth. To determine the present GOS on an installed AUDIX system:

1. Get the average ports used during the busy hour from the `maximum average ports in use` field on the `traffic : feature : day` form. This value is the average during the busiest hour of the day, which represents the worst possible service period. If the GOS is adequate during the busy hour, it will be even better during hours with less activity.

2. Use the average ports value from the previous step and Table 12-1, *AUDIX Port Capacities and Grades of Service*, to determine your current GOS. This table shows the number of ports available down the left side and the GOS across the top. Find the row with the number of ports on your system. On that row, find the number that is equal to or just larger than the average ports value from the `traffic : feature : day` form. The value at the top of the column where that number appears is the current GOS during the busy hour.

   For example, if your AUDIX system has 10 ports available and your average ports used value is 5.6, your GOS is .05 because the number equal to or just higher than your ports used value is 5.7 in the column for GOS .05 on the row for 10 ports. This means that, with an average holding time on an AUDIX port of 100 seconds, five percent of the calls during the busy hour will experience queuing delays of 10 seconds or more.

A GOS of .05 is recommended, while GOS .03 is desirable. More than .05 means that your AUDIX system doesn't have enough ports to handle the traffic during your busiest periods.

If your GOS is higher than you desire, use Table 12-1 again to determine how many ports you would need to achieve the desired GOS. Using the previous example, find the number just larger than your average

ports used value (5.6) in the desired GOS column (.03). The number is on the row for 11 ports, so adding one port would give you the desired GOS (remember, however, that ports must be added in increments of two). Similarly, if you have 26 ports and your average port usage value is 20, your GOS is .08. Finding 20.1 in the column for GOS .03 tells you that 28 ports are required to achieve GOS .03 with your present traffic load.

You can also use Table 12-1 to project port capacity requirements based on your expectations for future growth. For example, if you expanded to 28 ports in the previous example to achieve GOS .03, but expect to add 100 subscribers to your existing 500 subscribers, expect your average ports usage to expand by 20 percent to 22.1, which would require a total of 32 ports to maintain a GOS of .03.

Table 12-1. AUDIX Port Capacities and Grades of Service

Average Ports in Use at Various GOS							
Ports	**.01**	**.02**	**.03**	**.04**	**.05**	**.06**	**.08**	**.10**
2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5
3	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1
4	0.9	1.1	1.2	1.3	1.4	1.5	1.7	1.8
5	1.4	1.6	1.8	1.9	2.1	2.2	2.3	2.5
6	1.9	2.2	2.4	2.6	2.7	2.9	3.1	3.2
7	2.5	2.9	3.1	3.3	3.4	3.6	3.8	4.0
8	3.1	3.5	3.8	4.0	4.2	4.3	4.6	4.8
9	3.8	4.2	4.5	4.8	4.9	5.1	5.4	5.6
10	4.4	4.9	5.3	5.5	5.7	5.9	6.2	6.4
11	5.1	5.7	6.0	6.3	6.5	6.7	7.0	7.3
12	5.8	6.4	6.8	7.1	7.3	7.5	7.8	8.1
13	6.6	7.2	7.6	7.8	8.1	8.3	8.6	8.9
14	7.3	7.9	8.3	8.6	8.9	9.1	9.5	9.8
15	8.0	8.7	9.1	9.5	9.7	10.0	10.3	10.6
16	8.8	9.5	9.9	10.3	10.6	10.8	11.2	11.5
17	9.6	10.3	10.8	11.1	11.4	11.6	12.1	12.4
18	10.3	11.1	11.6	11.9	12.3	12.5	12.9	13.3
19	11.1	11.9	12.4	12.8	13.1	13.4	13.8	14.2
20	11.9	12.7	13.3	13.6	14.0	14.2	14.7	15.0
21	12.7	13.6	14.0	14.4	14.9	15.1	15.6	16.0
22	13.5	14.4	15.0	15.4	15.7	16.0	16.4	16.8
23	14.3	15.3	15.8	16.3	16.5	16.8	17.4	17.8
24	15.1	16.1	16.7	17.1	17.5	17.8	18.2	18.6
25	16.0	16.9	17.5	17.9	18.3	18.6	19.2	19.6
26	16.8	17.8	18.3	18.9	19.2	19.4	20.0	20.4
27	17.6	18.6	19.2	19.7	20.1	20.4	21.0	21.4
28	18.5	19.4	20.1	20.6	21.0	21.3	21.8	22.2
29	19.3	20.3	21.0	21.5	21.8	22.2	22.8	23.2
30	20.1	21.1	21.8	22.4	22.8	23.1	23.6	24.2
31	21.0	22.1	22.8	23.2	23.6	24.0	24.6	25.0
32	21.8	22.9	23.6	24.2	24.6	24.9	25.4	26.0

MEASURING AUDIX DISK CAPACITY REQUIREMENTS

Disk space on the AUDIX system is used to store system filesystems containing AUDIX programs, the AUDIX database files that contain your subscriber records and traffic information, and the voice text filesystems that contain the actual digitized voice messages stored by the AUDIX system. Of this disk usage, the voice text filesystems take the most space and are the most volatile as the system grows in use and number of subscribers.

Filesystems were originally created on your system's disk drives with a large amount of free or unused space to allow for growth. Typically, the voice text filesystems are populated across more than one disk to maximize efficient use of storage space in your system. It is generally not advisable to use all available space on a disk for several reasons: system read and write operations take longer when the disk is near capacity, and if filesystems become completely full, the AUDIX system will stop taking calls and may crash.

It is not necessary to check the file systems for adequate free space on a regular basis because warnings are generated if low free space thresholds are exceeded. It is, however, a good idea to check on a regular basis the amount of voice text (vtext) space used to determine if you need to reallocate the current use of disk space and also to determine if additional disks may be needed in the future.

Use the `traffic : load : day` form to check the total space used and available for voice text filesystems. This information should be monitored and plotted over a period of time to see any pattern of growth in vtext space used.

For maximum efficiency, vtext filesystems should not exceed 2000 blocks on the smaller disk drives or 3500 blocks on 40-hour (or greater) disk drives. Access time is greatly slowed if filesystems exceed these limits. When a vtext filesystem approaches 2000 or 3500 blocks (depending on your disk drive size), create another 2000- or 3500-block vtext filesystem instead of expanding the size of existing vtext system(s). The AUDIX system delivers messages to the filesystem that has the most space available at the time.

New vtext filesystems can be created on the same disk or on a different disk, depending on available space. Use the `filesystem : list` form to check the free space on each disk drive. Vtext filesystems should all be the same size and can never be decreased in size.

If you expect to add a large number of new subscribers, estimate the expected new sizes for AUDIX filesystems using the `system : limits` form. To determine additional voice text requirements, increase the amount of vtext space used on the `traffic : load : day` form proportional to the number of expected new subscribers plus 25 percent for free space. For example, if you currently have 100 subscribers using 1000 blocks, 50 additional subscribers would require 750 additional blocks (500 blocks plus 250 blocks for free space).

When there is not enough space available on any disk to expand vtext filesystems or create new vtext filesystems and total vtext free space is less than 20 percent of the total allocated for vtext filesystems, you are operating at near-capacity and may need additional disk drives if you expect increased voice text usage in your AUDIX system.

NOTE	Fixed disks may *only* be initialized by AT&T personnel.

RECOMMENDED FILESYSTEM DISTRIBUTION TO DISKS

Access time to filesystems may be reduced somewhat in the system by distributing the filesystems among the disk drives in the system so the percentage of disk accesses are as evenly distributed among the disks as possible. For details about recommended filesystem distribution, see *AUDIX System Description* (585-305-201).

A. Communicating with Subscribers

This appendix contains information you can photocopy and distribute to the subscriber population to inform them of AUDIX features or policies. Information includes:

- A subscriber change-request form that you may copy and distribute to subscribers. They can use this form if they want to request changes on their subscriber profile or report problems with the AUDIX system.

- Information for creating a subscriber information sheet, a means that you, as the AUDIX system administrator, may want to use to send information from you to subscribers — perhaps to answer questions or to let them know about new options or other kinds of information.

- A subscriber survey that you may tailor to your own needs, photocopy, and distribute to subscribers. The survey is intended to provide feedback that would allow you to measure subscriber satisfaction, define and quantify the benefits of the AUDIX system within your particular organization, and gather ideas for improving service.

The subscriber artwork package shipped with your AUDIX system or upgrade software contains additional handouts and tip sheets useful for the subscriber population. Sample templates that you can customize and distribute to your subscribers include:

- Copies of all the subscriber quick-reference cards, including those for the multiple personal greetings and outcalling features.

- A *Voice Messaging Tips and Highlights* sheet you can either distribute as is, or customize for the features offered at your site.

- A sample ''Welcome to the AUDIX System'' letter that can be sent to all new subscribers. We recommend you modify this template to reflect the circumstances at your site and distribute it with the quick-reference cards and other appropriate subscriber documents.

- A letter describing how to use the AMIS Analog Networking and/or Message Delivery features. This letter should only be distributed if these features are activated at your site.

| NOTE | The contents of the artwork package differ depending on the R1V8 announcement set installed at your site. Use the appropriate version for your R1V8 system, either the *AUDIX Voice Messaging Subscriber Artwork Package — Traditional* (585-305-716) or the *AUDIX Voice Messaging Subscriber Artwork Package — Standard* (585-305-718). |

SUBSCRIBER CHANGE-REQUEST FORM

On the following page is a subscriber change-request form that you may copy and distribute to subscribers. They can send you this form if they want to request changes on their subscriber profile or report problems with the AUDIX system.

AUDIX CHANGE REQUEST AND TROUBLE REPORT FORM

Name: Date:

Telephone number:

CHANGE REQUEST

Addressing mode: [_] extension   [_] name

Incoming mailbox (received order)

  Indicate desired order: _____
  (new, unopened, old)

  Scanning order: [_] lifo   [_] fifo
  (lifo = last in, first out   fifo = first in, first out)

Outgoing mailbox (presented order)

  Indicate desired order: _____
  (delivered, accessed, undelivered, not deliverable, file cabinet)

  Scanning order: [_] lifo   [_] fifo

Name: old name: _____   new name: _____

TROUBLE REPORT

Time trouble occurred: _____   Date trouble occurred: _____

While using: [_] Voice Mail   [_] Call Answer

Call Type: [_] local   [_] remote

Please describe the problem in as much detail as you can. Include
system prompts you heard (as best you can remember them), and your
touch-tone inputs. (Use the back of this form if necessary.)

Have you noticed this problem before?

SUBSCRIBER INFORMATION SHEET

You may occasionally need/want to communicate with subscribers — perhaps to answer questions, let them know about about new options, or pass on other kinds of information.

Even when subscribers have been well trained, they may at first use the AUDIX system in only a minimal way because it is a new and unfamiliar tool. They may become accustomed to this limited use and forget that the AUDIX system can provide much more. Once they are thoroughly acquainted with the AUDIX system, they may appreciate some reminders about what the AUDIX system can do for them, or tips on more efficient ways of using the system.

The following is a list of a some sample items, two or three of which could be included in an AUDIX subscriber information sheet that could be distributed occasionally as needed. You may want to use them just as they are or change them to fit your organization's needs. Reading through them may suggest other items to you.

- If you wish to pause to think while you are recording an AUDIX message, press **1**. When you are ready to continue, press **1** again.

- When calling the AUDIX system to retrieve messages, you do not need to wait for the AUDIX system voice to finish speaking. Just ''dial through'' the voice prompts.

- When you are listening to messages, press **5** at any point, as many times as needed, to rewind a few seconds at a time to hear a specific part of the message again.

- When you are listening to messages, press **6** at any point, as many times as needed, to advance a few seconds at a time.

- If you are concerned about forgetting an upcoming meeting, send yourself an AUDIX message scheduled for delivery on the morning of the meeting.

- You may want to write down a ''script'' of frequently used personal greetings.

- When instructing a caller to press a certain button to direct the call to another person, it helps to encourage the caller to take the desired action more quickly if you use the word ''now.'' For example: ''If you wish to reach our receptionist for assistance and are calling from a touch-tone phone, press **0** *now*.''

- You can record a personal greeting from home (perhaps to advise callers that you are out sick). Just call the AUDIX system and log in as usual. Press **3** to change your greeting. The AUDIX system will prompt you through the procedure.

- If you want to listen to a message header again, press **23**.

- To increase the volume of a message you are listening to, press **4** as many times as needed.

- To decrease the volume of a message you are listening to, press **7** as many times as needed.

- To speed up a message you are listening to, press **9** as many times as needed.

- To slow down a message you are listening to, press **8** as many times as needed.

- To replay from the beginning a message you are listening to, press **0**.

- If you wake up in the middle of the night with a bright idea that you don't want to forget, call the AUDIX system and leave yourself a message.

- Press **7** from the activity menu for automatic message scan options.

- If you are away from the office and do not have a reliable number at which you can be reached, tell people to call your office number and leave an AUDIX message for you. Then, just call into the AUDIX system from anywhere at any time to retrieve the message.

- If you do not want to listen to the entire personal greeting of another AUDIX system user, press **1** to get the beep tone immediately so you can leave a message for them.

- If you are not happy with a message you are recording, you can delete it by pressing ***D** (*3).

- To find the extension number of another AUDIX subscriber, call the AUDIX system, log in as usual, press ****N** (**6), press the keys representing letters of the subscriber's last name, and press **#**.

SUBSCRIBER SURVEY

A subscriber survey appears at the end of this appendix. You may want to tailor the survey to meet your own needs before sending it to subscribers. It is intended to provide feedback that would allow you as AUDIX system administrator to measure subscriber satisfaction, define and quantify the benefits of the AUDIX system within your particular organization, and gather ideas for improving service.

AUDIX SUBSCRIBER SURVEY

SUBSCRIBER NAME: —————————————   EXTENSION: —————————

(No individual responses to this survey will be reported within your
company. Your name is requested only so that we can contact you if
we have a question or would like to follow up with you on your
recommendations.)

For each section of this questionnaire, please circle the
appropriate answer and provide explanations as requested.
Thank you.

BACKGROUND INFORMATION

1. Your job: ————————————————————————————

2. Do you use AUDIX?

    a) Yes
    b) No. (Any particular reason? ——————————————————)

3. Is your job performed entirely in one office building?

    a) Yes
    b) No

    If you answered "no" to question 3, please complete questions 4 and 5.
    Otherwise skip to the next section.

4. How many days per week are spent OUTSIDE of the office? —————————

5. Where do you work when you are outside of the office? (Circle as many
    as apply and fill in hours per week.)

                                                        HOURS PER WEEK
    a) Home   ——————————
    b) "On the Road"   ——————————
    c) Another office location   ——————————
    d) Other   ——————————
        (Please explain: ————————————————)

FEATURES / ENHANCEMENTS

1. Approximately how many times per day do you perform the following
    functions using AUDIX?

                                             TIMES PER DAY

    a) Leaving messages   _____
    b) Retrieving messages   _____
    c) Recording "Personal Greetings"   _____
    d) Broadcasting a message   _____
        to a group of people

2. How many AUDIX messages do you usually find on a single "retrieval
    session"?

    Minimum: _____
    Maximum: _____
    Average: _____

3. What feature(s) of AUDIX do you like best?

    _____
    _____
    _____
    _____

4. What feature(s) of AUDIX do you like least?

    _____
    _____
    _____
    _____

5. What feature(s) would you like to see added or changed? Please
    explain.

    _____
    _____
    _____
    _____

6. If you could modify AUDIX any way and use it for something else
    that involved recording the human voice, what other uses of AUDIX
    would you propose for your office? (Be creative!)

    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____

CALLER REACTION

1. What kind of feedback have you received from outside callers since
    AUDIX was introduced? (If appropriate, circle more than one
    answer.)

    a) Very positive
    b) No comment either way
    c) Negative

       If you circled more than one answer, please explain.

       _____
       _____
       _____
       _____

2. What specific reactions/comments have you had from the public
    (agents, insureds, claimants, attorneys, etc.)?

       _____
       _____
       _____
       _____

3. Are most people who call you willing to leave messages on AUDIX or
    do they feel uncomfortable "talking to a machine" or insist upon
    speaking to a human being? Explain.

       _____
       _____
       _____
       _____

4. Is there any particular group or type of caller (for example:
    agents, home office personnel, etc.) who likes AUDIX very much? Name
    the group(s) and give the reasons why you feel they like AUDIX.

       _____
       _____
       _____
       _____

5. Is there any particular group or type of caller (for example: agents,
    home office personnel, etc.) who dislikes AUDIX very much? Name the
    group(s) and give the reasons why you feel they dislike AUDIX.

       _____
       _____
       _____
       _____

6. List any suggestions you might have for improving AUDIX so that
    callers may feel more comfortable leaving messages:

       _____
       _____
       _____
       _____

EFFECT ON PRODUCTIVITY / BENEFITS TO YOUR COMPANY

1. Does AUDIX assist you with your job?

    a) Most definitely
    b) Somewhat
    c) Not at all
    d) Interferes with job

    Explain your answer. (How does/doesn't AUDIX assist you with your
    job?)

    _____
    _____
    _____

2. How much has AUDIX affected your productivity?

    a) Big improvement
    b) Some improvement
    c) No change
    d) I'm less productive

    Explain your answer. (In what ways are you more/less productive?)

    _____
    _____
    _____

3. If you feel that AUDIX allows you to be more productive, how much
    time per day would you estimate that AUDIX saves you?

    _____

4. If you feel that AUDIX reduces your productivity, how much time per
    day would you estimate that AUDIX costs you?

    _____

5. How has AUDIX changed (for better, worse, or both) your
    responsiveness to callers?

    _____
    _____

6. List specific benefits or shortcomings of using AUDIX.

    _____
    _____
    _____

7. Please comment on the overall applicability and effectiveness of
    AUDIX to your company's business.

    _____
    _____

Glossary

1A ESS Switch
An AT&T Central Office (CO) switch that supports integrated AUDIX applications in AUDIX R1V4 or later software.

5ESS Switch
An AT&T switch Central Office (CO) that supports integrated AUDIX applications in AUDIX R1V4 or later software.

Abbreviated Announcements
Prior to R1V8, the customer could choose between two types of AUDIX system voice prompts, verbose or abbreviated. Abbreviated announcements are voice prompts that are given in less detail than verbose announcements. The abbreviated announcement set was discontinued in AUDIX R1V8 and replaced with the *traditional* announcement set.

Accessed Message
Voice mail that a recipient has received and scanned (either the entire message or just the header).

Active Filesystems
The filesystems used to run the AUDIX system. These include types adat, boot, sdat, sst, vdat, vtext, and (starting in R1V3) ndat. Most are activated by the `system : filesystems` form.

Activity
An option in the highest-level menu voiced to a AUDIX subscriber after first accessing the AUDIX system. Selecting an activity is the starting point for all user operations.

Activity Log
An administrative tool useful for investigating subscriber-reported problems with message delivery. Administrators can use the log to track activity by subscriber extension and by time.

Activity Menu
The list of main options voiced to subscribers when they access the AUDIX system. To hear the complete menu, press *H. To interrupt an activity and return to the main menu, press *R.

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Address   Subscriber identification indicating to whom the AUDIX system is to deliver a message. An address may include several subscribers or mailing lists. Name or number addressing can be selected with the *A command.

Adjunct   A separate system that is closely integrated with a switch, such as an AUDIX system or an AP.

Administration   The process of setting up a system (such as the switch or the AUDIX system) so that it will function as desired. Options and defaults are normally set up (translated) by the AUDIX system administrator or remote service personnel.

Administrative Shutdown   An option on the `shutdown` form used to bring down the system software for administrative reasons, either gradually as calls are ended (camp-on) or immediately (forced). Filesystems are closed but left mounted.

Alarm Link   A 25-pair cable connection from the back of the AUDIX cabinet to alarm-reporting facilities used for the switch. The link notifies remote service personnel about an AUDIX problem.

Alarm Log   A list of faults, including unit and device numbers, that is stored in a software file on disk. The `maintenance : active alarm : display` form shows alarm log faults in severity order.

Alarms   Hardware, software, or environmental problems detected by maintenance testing that may affect system operation. Alarms (or faults) are classified as major, minor, or warning. They are reported to services personnel through the alarm link and listed in the alarm log on disk.

AMIS Analog Networking   Audio Messaging Interchange Specification. A proposed standard to be used for inter-vendor networking of voice messaging systems.

AMIS Prefix   The number that when entered as a prefix to the destination number indicates that the destination number is an AMIS analog networking number.

Analog   A continuous signal (versus digital, discrete signals).

Analog Networking

A method of transferring a voice mail message from one voice mail system to another whereby the message is played back (voiced) during the transmission from one system to another.

Announcement Fragment

A numbered piece of spoken AUDIX information that makes up a system message or prompt.

Architecture

The composition and functional components of a system.

Asynchronous Transmission

A form of serial communications where each transmitted character is bracketed with a start bit and one or two stop bits. The AUDIX display terminals use an asynchronous link to the Maintenance Interface (MI) board.

Audit

A software program that resolves filesystem incompatibilities and updates restored filesystems to a workable level of service.

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

A software package available with the AUDIX system (R1V2 or later) software. ADAP allows an AUDIX system administrator to transfer AUDIX subscriber, maintenance, or traffic data over the administration port to a compatible 62xx or 63xx Personal Computer (PC) or Work Group System (WGS).

AUDIX Basic (R1V1)

The original AUDIX software including the Voice Mailbox, Call Answer, Information Service, and Leave Word Calling (LWC) features. This version is only available on installed AUDIX-L machines.

AUDIX (R1V2)

Version of AUDIX software with enhanced features including guest passwords, call transfers into and out of the AUDIX system, and the AUDIX Administration and Data Acquisition Package.

AUDIX (R1V3)

Version of AUDIX software that can run on a one-cabinet AUDIX (AUDIX-S), two-cabinet AUDIX, or AUDIX-L. It includes the AUDIX features plus the Automated Attendant, AUDIX Networking, Outcalling, and Standalone features.

AUDIX (R1V4)	Version of AUDIX software that includes all features from previous releases, plus support of integrated 1A ESS Switch and 5ESS Switch interfaces, File Redundancy, Standalone Message Notification, Executive Features summary, administrable login ID length, and the Text Service Interface.
AUDIX (R1V5)	Version of AUDIX software that includes all features from previous releases, plus Broadcast Message/Login, Priority Messages, Priority Outcalling, Multiple Personal Greetings, Personal Directory, Name Record by Subscribers, Automatic Message Scan, Sending Restrictions, Data Base Processing, Full Mailbox Answer, Enhanced Networking, Call Detail Recording, Enhanced Automated Attendant, Enhanced Password Security, and interfaces to SL-1 switches.
AUDIX (R1V6)	Version of AUDIX software that includes all features from previous releases, plus AMIS analog networking, message delivery, and end-of-message warning. In addition, the R1V6 version of AUDIX can (for certain PBXs) support up to six simultaneous network calls. See *AUDIX Networking* (585-300-903) for details.
AUDIX (R1V7)	Version of AUDIX software that includes all features from previous releases, plus Undelete, administration of advance and rewind increment, and certain networking enhancements [see *AUDIX Networking* (585-300-903)] for details.
AUDIX (R1V8)	Version of AUDIX software that includes all features from previous releases, plus the *standard* (streamlined) and *traditional* abbreviated announcement sets, enhanced AMIS analog networking capabilities, and Automated Attendant transfers by name.
AUDIX-L (Large)	AUDIX-L is the original AUDIX model. Its equipment is arranged in two AT&T System 85-type equipment cabinets. AUDIX-L can run any version of AUDIX software.
AUDIX-S (Small)	The AUDIX-S model, now called the *one-cabinet AUDIX*, is the smallest member of the AUDIX family. All AUDIX-S hardware is housed in a single, half-height cabinet. AUDIX-S runs R1V2 or later software.

AUDIX Two-Cabinet Configuration This AUDIX model consists of a one-cabinet (AUDIX-S) base cabinet with an expansion cabinet on top. The two-cabinet AUDIX model offers 32 ports and greater disk storage than an AUDIX-L. It runs R1V3 or later software.

Automated Attendant An R1V3 and later AUDIX feature that allows the customer to set up a main number with a menu of options that route callers to an appropriate department at the touch of a button.

Automatic Message Scan A feature allowing subscribers to scan all message headers and/or messages at the touch of two buttons.

Backup A duplicate copy of a filesystem saved on a removable cartridge or a separate disk than the original. The backup filesystem may be copied back (restored) if the active version is damaged (corrupted) or lost.

Background Testing Testing that runs continuously when the system is not busy doing other tasks.

Basic Call Transfer A switchhook-flash method used on AUDIX Standalone and many switches to send the AUDIX transfer command over analog voice ports.

Baud Rate Transmission signaling speed (see *bps*).

Blank Cartridge One or more spare removable cartridges required to back up system information.

Block Service To prevent use of a port, channel, or entire system as a result of a hardware fault or maintenance procedure.

Body The part of subscriber Voice Mail that contains the actual spoken message. For a LWC message, it is a standard system announcement.

Boot (or Reboot) To bring up the system by loading programs from disk to main memory (part of system initialization).

Boot Filesystem The filesystem selected during system initialization, either automatically or manually, that the system tries to load its initial programs from. The filesystem name is boot_f for the active version and boot_e for the backup copy.

bps (bits per second)	The number of binary units of information (1s or 0s) that can be transmitted per second. Mbps refers to a million bits per second; Kbps refers to a thousand bits per second.
Broadcast Messaging	A feature that enables the system administrator and other designated users to send a voice mail message to all subscribers automatically.
Bulletin Board	(Also called *Information Service*) An AUDIX feature that allows a message to be played to callers who dial the extension. Callers cannot leave a message (it is a listen-only service).
Business Communications Terminal (BCT)	A recommended terminal for AUDIX maintenance or system administration.
Busy-Out/Release	To remove an AUDIX device from service (make it appear *busy* or in use), and later restore it to service (release it). The AUDIX data link, voice ports, or channels may be busied out if they appear faulty or if service personnel are performing maintenance.
Call Answer	An AUDIX feature that allows the AUDIX system to answer a call and record a message when the subscriber is unavailable. Callers may be redirected to the AUDIX system through the call coverage or Call Forwarding switch features. Subscribers may record a personal greeting for these callers.
Call Coverage	A switch feature that defines a preselected path for calls to follow if the first (or second) coverage points are not answered. The AUDIX system may be placed at the end of a coverage path to handle redirected calls through call coverage, Send All Calls, Go To Cover, etc.
Call Detail Recording (CDR)	A record of a telephone call which includes the date and time the call was placed, the length of the call, and the destination number of the call.
Call-Distribution Group	The set of analog port boards on the switch that connects subscribers and users to the AUDIX system by distributing new calls to idle ports. This group (or split) is called Automatic Call Distribution (ACD) on System 85, Generic 2, and Generic 3; Enhanced Uniform Call Distribution (EUCD) on a DIMENSION PBX; and Uniform Call Distribution (UCD) on System 75, Generic 1, and Generic 3.

Camp-On	A 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 hardware that controls AUDIX subsystem operation (data transfer, I/O, and logical instructions) by executing instructions obtained from memory. The Feature Processor (FP), Data Base Processor (DBP), and Voice Session Processor (VSP) CPUs form the major AUDIX subsystems.
Circuit Pack Carrier	The physical box that contains the circuit boards, connects them to a backplane, and provides other system connections.
Class of Service (COS)	The standard set of features given to subscribers when they are first administered (set up with a Voice Mailbox).
Colocated	An AUDIX system installed in the same physical location as the host switch (also called a local installation).
Commands	One- or two-key touch tones that control a Voice Mailbox activity or function.
Configuration	The particular composition and hardware selected for a system, including internal options and peripheral equipment.
Create Message Activity	Activity 1 on the Activity Menu, used by AUDIX subscribers to record or edit a voice mail message.
Data Base	A collection of filesystems and files in disk memory that store the voice and nonvoice (program data) necessary for AUDIX system operation.
Data Base Processor (DBP)	One of the major AUDIX subsystems that interacts with the other subsystems to move voice and nonvoice data to and from disk.

Data Communications Interface Unit (DCIU) The switch device that allows nonvoice (data) communication between a System 85, Generic 2, or DIMENSION PBX and the AUDIX system. Each AUDIX adjunct needs one data link.

Data Link The connection from the AUDIX cabinet to the switch DCIU, PGATE, PI, or SCI interface boards that enables nonvoice (data) messages to pass between the AUDIX system and the switch. This link varies according to the type of AUDIX system and switch used.

Data Terminal Equipment (DTE) Standard type of data interface normally used for the endpoints in a connection. Normally the AUDIX system, most terminals, and the switch data link are DTE devices.

Default A value that is automatically supplied if no other value is specified.

Delivered Message Voice mail that has been successfully transmitted to a recipient's incoming mailbox.

Demand Testing Testing performed on request (usually by service personnel).

Device A replaceable piece of hardware shown on the alarm and error log forms (part of a unit).

Dial-Ahead/Dial-Through The act of interrupting or preceding AUDIX system announcements by typing (buffering) touch-tone commands in the order the system would normally prompt for them.

Digital Discrete data or signals such as 0 and 1.

Digital Communications Protocol (DCP) A 64 Kbps digital data transmission code with a 160 Kbps bipolar bit stream divided into two information (I) channels and one signaling (S) channel.

Digital Networking A method of transferring a voice mail message from one voice mail system to another in which the message is sent in digital form.

Directory	An AUDIX feature allowing you to hear a subscriber's name and extension after typing **N at the Activity Menu. Also, a group of related files accessed by a common name in software, such as the *mount point* on disk where filesystems are located (for example, /ss, /sd, /vd).
Disk Controller	The IPC/DIM (TN507C/UN161B) or SADI (TN475B) circuit packs that control the disk drives in the DBP subsystem. AUDIX-L can have two disk controllers (0 and 1), while other AUDIX models have one (controller 0).
Disk Device	The drive number associated with a disk controller that indicates its physical position. For example, device 2 on controller 0 is called disk02 (or 0/2).
Display Terminal	A data terminal with a screen and keyboard used for displaying AUDIX forms and performing maintenance or administration activities.
Distributed Communications System (DCS)	A network of two or more switches that uses logical and physical data links to provide full or partial feature transparency. Voice links are made using tie trunks.
Distribution List	See Mailing List.
Enabled/Disabled	The state of a hardware (DBP) device that indicates whether or not the AUDIX system can use it. Devices must be equipped before they can be enabled (made active).
Enhanced Call Transfer	An AUDIX Enhanced feature that allows compatible switches to transmit messages digitally over the BX.25 (data) link. This is used for quick AUDIX call transfers and requires a fully integrated digital switch. Callers can only transfer to other extensions in the switch dial plan.
Escape to Attendant	An AUDIX Enhanced feature that allows an AUDIX subscriber with the Call Answer feature to have a personal attendant or operator administered to potentially pick up an unanswered call. A system-wide extension could also be used to send callers to a live agent.

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Executive Features

A set of features introduced in R1V4 software that included Private Messaging (**P), Allow Forwarding (**F), Untouched Message (**H or Hold), and a Security Password Length, where a minimum-length password up to 15 characters long is administered to increase system security.

Exit Command

An AUDIX (R1V3) feature that allows callers to use the **X (Exit) command to have the AUDIX system disconnect a call *without* hanging up. This is especially useful during calls made from a toll phone or for ending Outcalling sessions from a remote location.

Equipped/Unequipped

The state of a DBP or VSP hardware device that indicates whether or not AUDIX software has recognized it. Devices must be equipped before they can be enabled (made active) using the `maintenance : dbp : equip` or `maintenance : vsp : equip` page form.

Error Log

A list of errors kept in a software file on disk. The `maintenance : error : display` form normally shows errors in historical order. The `maintenance : error : specification` form can be used first to select errors to display based on type, time, etc.

Errors

Problems detected by the system during maintenance self-tests and recorded in the error log. Errors can produce an alarm (fault) if they exceed a threshold.

Expansion Cabinet

The upper cabinet of an AUDIX two-cabinet configuration, where the base cabinet is the former AUDIX-S system.

Faults

See Alarms.

Feature Processor (FP)

The main AUDIX subsystem that controls feature operation, communicates with the switch, and supports the maintenance and administration interfaces.

Field

An area on a form, menu, or report where you can type or display information. For input fields, fill in the blanks or type over information already there. Read-only or output fields cannot be changed; you usually press ENTER to display information.

File	A collection of like records (data) stored under a single name in software.
File Cabinet	A storage area for subscribers to keep copies of messages for future reference or action.
File Redundancy	An AUDIX R1V4 and later feature that allows data from crucial filesystems to be continuously copied to backup (mirror) filesystems while the system is running. If the system has some problem where an original filesystem cannot be used, the backup filesystem is placed in service automatically.
Filesystem	A collection of related files (programs or data) stored on disk. Different types of filesystems are required to initialize the AUDIX system and provide full service; these include the `adat`, `ndat`, `sdat`, `sst`, `vdat`, `vtext`, and `boot` filesystems.
Fixed Storage Drive (FSD)	A permanently mounted disk drive having a magnetic-media fixed disk on an AUDIX-L system.
Format	To set up a disk with a predetermined arrangement of characters so the system can interpret meaningful information.
Forms	Terminal screens of information that allow data to be changed or displayed.
Function	Individual steps or procedures within a Voice Mailbox activity.
Function Keys	See Programmed Function Keys.
Generic 1, 2, 3	AT&T DEFINITY Communications System software releases. *Generic 1*, *Generic 3i*, *Generic 3s*, and *Generic 3v* correspond to the new generation of System 75-based software. *Generic 2* and *Generic 3r* correspond to the new generation of System 85-based software.
Generic Program Cartridge	A copy of the uncustomized software shipped with a new system.
Get Messages	See *Scan Incoming Mailbox Activity*.

Grade of Service (GOS)

The level of service subscribers receive based on the number of seconds they have to wait before the AUDIX system answers a call.

Guest Password

An AUDIX Enhanced feature that allows people who are *not* AUDIX subscribers to leave messages on the AUDIX system by dialing a subscriber's extension and entering a system-wide guest password.

Hard Disk Drive (HDD)

A permanently mounted (fixed) disk drive on a one- or two-cabinet AUDIX. Disk drives have varying capacities from as little as 11 hours to more than 80 hours.

Header

Information that the AUDIX system creates to identify a message. A message header includes the originator or recipient, type of message, creation time, and delivery time.

Help

A command run by pressing the HELP or CTRL-? key on a display terminal to show the options available at your current form position. In the AUDIX system, press *H to get a list of options.

Host Switch

The switch directly connected to the AUDIX system over the data link; also, the physical link connecting an AUDIX system to a DCS network. (See also *Distributed Communications System*)

Hunt Group

A group of analog ports on the switch usually administered to search for available ports in a circular pattern. Used on AUDIX Standalone systems and some switches.

Initialization

The process of bringing a device or system to a predetermined starting state. The AUDIX start-up procedure tests hardware; loads the boot filesystem programs; locates, mounts, and opens other required filesystems; and starts normal service.

Initialization and Administration System (INADS)

Maintenance system used by remote service personnel to track alarms.

Integrated AUDIX System

An AUDIX system with a data link. Compatible switch software is required.

Integrated Message Notification (IMN)	A feature that allows several message services to alert users of new messages through a common service using descriptive announcements and the message-waiting lamp. (See also *Unified Messaging*)
Interface	The device or software that forms the boundary between two devices or parts of a system, allowing them to operate together.
Label	The name assigned to a disk device (either a removable cartridge or permanent drive) through software. Cartridge labels may have a generic name (such as 3:3) to show the software release, or a descriptive name if for backup copies (such as back01). Disk drive labels usually indicate the disk position (such as disk00 or disk02).
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)	Indicator on a circuit pack faceplate or disk drive to show status of AUDIX operations and possible fault conditions.
Listen to Messages	See *Scan Incoming Mailbox Activity.*
Load	To read software from external storage (such as disk) and place a copy in system memory.
Local AUDIX Machine	The AUDIX adjunct where a subscriber's Voice Mailbox is located. All subscribers on this ''home'' machine are called *local* subscribers.
Local Installation	(Also see *Colocated*) A system, adjunct, or piece of peripheral equipment installed physically near the host switch or system.
Local Maintenance Terminal (LMT)	A display terminal located near the AUDIX cabinet (usually directly cabled) which is temporarily attached to the MAINT connector during an on-site service visit.
Local Networking	When more than one AUDIX adjunct is attached to the same switch to give the appearance of one large AUDIX machine.

Login

(See also *Password*) A unique code used to gain approved access to the AUDIX system, either a subscriber's Voice Mailbox or a display terminal.

Login Announcement

A feature enabling the system administrator and other designated users to create a voice mail message that is automatically played to all subscribers every time they login to the AUDIX system.

Mailbox

A portion of disk memory given to each subscriber for creating and storing outgoing and incoming messages. Space is usually allocated as needed.

Mailing List

A group of subscriber addresses assigned a list ID# and public or private status. A mailing list may be used to simplify sending messages to several subscribers.

Maintenance

The process of identifying system errors and correcting them, or taking steps to prevent problems from occurring.

Maintenance Shutdown

The complete shutdown of all filesystems, leaving them unmounted and inaccessible (normally used before powering down the system).

Memory

A device which can store logic states such that data can be accessed and retrieved. Memory may be temporary (such as system RAM) or permanent (such as disk).

Message Categories

Groups of messages in subscribers' mailboxes. Categories include new, unopened, and old for the incoming mailbox, and delivered, accessed, undelivered, undeliverable (not deliverable), and file cabinet for the outgoing mailbox.

Message Center

An AP call-answering feature that allows an agent to enter a message for a busy or unanswered extension. Also called Message Center Service (MCS).

Message Delivery

An extension of AMIS analog networking which allows AUDIX subscribers to forward voice mail messages to any touch-tone telephone worldwide.

Message-Waiting Lamp

(Also called Automatic Message-Waiting or AMW Lamp.) An LED on a voice terminal (telephone) that alerts subscribers to new messages.

Mode   An operating state in which the system can perform certain tasks. The AUDIX modes include control mode, normal mode, administrative or maintenance shutdown mode, and initialization.

Mount   To identify a filesystem to software and make it accessible by the DBP.

Mount Point   A software abbreviation for a filesystem that allows software to find it independent of its physical location. Similar to a *directory.*

Networking   An AUDIX R1V3 or later feature that allows the customer to link together up to 100 remote AUDIX machines for a total of up to 36,000 subscribers.

Networking Prefix   A set of digits that identifies a remote AUDIX machine.

Normal Mode   The state of the AUDIX system after hardware initialization, where software is running and maintenance and administration forms are available.

On-Line Help   A feature introduced in AUDIX Enhanced software allowing system administrators and maintenance personnel to obtain screen form information by pressing a key for the PATH line, field, or form.

One-Cabinet AUDIX system   Current name for the 16-port AUDIX-S (Small) system. This half-height cabinet supports up to 2,000 subscribers (see *AUDIX-S*).

Operating System   The set of programs that runs the hardware and interprets software commands.

Oryx/Pecos   The AUDIX operating system (application software shipped on the generic program cartridge from the factory), a set of programs that runs hardware and interprets software commands.

Outcalling   An R1V3 or later AUDIX feature that allows the AUDIX system to dial subscribers' numbers or go to pagers to inform them they have new messages (often used with AUDIX Standalone or if subscriber phones do not have message-waiting lamps).

Password	A login code assigned to every AUDIX terminal user and subscriber for security reasons. After dialing the AUDIX system, subscribers must dial their personal password correctly to log on to the AUDIX system. Passwords with at least six digits, one of which is a noncharacter symbol, offer greater security.
Password and List Administration Activity	Activity 5 on the Activity Menu that allows subscribers to change their password, or to create, scan, or edit mailing lists.
Path	The command string (or directory location) typed on the second line of an AUDIX screen form that identifies the form to display. Parts of the path name are called segments. Each part must be identified with enough characters to uniquely name that segment.
PATH Line	The second line from the top of a terminal display form used to identify the form you wish to display. You may type only enough characters to name a unique form (such as `fi l`), followed with an ENTER or RETURN key.
Peripherals	The voice terminals, printers, display terminals, and other devices external to the AUDIX cabinet, but necessary for full AUDIX operation and maintenance.
Personal Computer (PC)	An AT&T 62xx or 63xx desktop computing device, required for the AUDIX Administration and Data Acquisition Package and Text Service Interface.
Personal Directory	A feature allowing each subscriber to create a private list of customized names.
Personal Greeting Administration Activity	Activity 3 on the Activity Menu that allows subscribers with the Call Answer feature to record personal greetings. These greetings are played to callers who are redirected to the AUDIX system. The Information Service and Automated Attendant features also use this option for recorded messages or menus.
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 an AUDIX voice port to allow a subscriber to leave a message on disk.

Priority Messaging   A feature allowing some subscribers to send Priority Messages that will be specially marked and preferentially presented to recipients.

Priority Outcalling   Works with Priority Messaging by allowing the recipient to elect to be notified by outcalling only when a priority message has been received.

Private Mailing List   A list of addresses that only the owning subscriber can access.

Private Messaging   One of the Executive Features that allows a subscriber to send a voice mail message that can't be forwarded by the recipient using the **P command. The **F (Allow Forwarding) command cancels Private Messaging.

Programmed Function (PF) Keys   User- or system-coded keys that allow information to be inserted or functions to be done by simply pressing the key.

Processor Interface (PI)   (Also known as Processor Interface Board or PIB). A System 75, System 75 XE, Generic 1, Generic 3i, and Generic 3s data link; The AUDIX system usually uses the EIA port connection (one of four links).

Protocol   A set of conventions or rules governing the format and timing of message exchanges (signals) to control data movement and the detection and possible correction of errors.

Public Mailing List   A list of addresses that any subscriber can use if that subscriber knows the owner's list ID# and extension number. Only the owner can modify a public list.

Real-Time Clock (RTC)   An internal system clock in the AUDIX system which may or may not be synchronized with the clock in the switch.

Remote Installation   A system, site, or piece of peripheral equipment that is installed in a different location from the host switch or system.

Remote Maintenance   Service personnel at a centralized maintenance site can access the AUDIX system through the remote MAINT connection to perform off-site troubleshooting or routine checks.

Remote Subscribers   Those subscribers whose mailboxes reside on a receiving (remote) AUDIX machine.

Removable Cartridge Drive (RCD)	A 20- or 50-Mbyte disk drive in the one- or two-cabinet AUDIX system with a removable magnetic-media cartridge.
Removable Storage Drive (RSD)	An AUDIX-L disk drive that permits removal and replacement of an 80-Mbyte magnetic-media cartridge. The RSD is required for software updates and backups.
Restart (AUDIX)	An AUDIX Enhanced feature that allows subscribers who have reached the AUDIX system through the Call Answer feature to access their own mailboxes by typing the *R (Restart) command. This is especially useful for long-distance calls or for AUDIX Standalone users who wish to access the AUDIX system when all the Voice Mail ports are busy.
Restart (System)	A partial system initialization from FP memory using booted programs already in RAM. This can be done using the Control Mode Menu or the `startup` form. A restart resets the FP and opens and mounts all filesystems that need to be active for full service.
Retention Time	The amount of time messages are saved on disk before being automatically deleted from a subscriber's mailbox.
Return Call to Sender	An AUDIX Enhanced feature that allows subscribers to immediately place a call to the originator of an incoming message if that person is in the switch's dial plan.
Scan	To listen to a message body or header.
Scan Incoming Mailbox Activity	Activity 2 on the Activity Menu which allows subscribers to review, forward, or respond to messages they have received from other subscribers or through the Call Answer feature.
Scan Messages Quickly	The Automatic Message Scan (Activity 7) on the Activity Menu which allows subscribers to scan all message headers and/or messages at the touch of two buttons.
Scan Outgoing Mailbox Activity	Activity 4 on the Activity Menu which allows subscribers to review, edit, or redirect messages they have scheduled for delivery, or to check the status of messages that are already sent.

Scheduled Delivery Time

A time and/or date that a subscriber optionally assigns to a message that tells the AUDIX system when to deliver it. If a delivery time is omitted, the AUDIX system sends the message immediately.

Screen-Labeled Keys

The top row of eight keys on a display terminal, whose functions are marked by reverse video blocks at the bottom of the screen. The keys' functions change when the screen labels change.

SCSI-to-AUDIX Disk Interface (SADI)

The AUDIX system disk drives use the Small Computer Systems Interface (SCSI) protocol to communicate with the TN475B SADI board (disk controller 0). The SADI's LEDs show which drives are active.

Simplified Message Service Interface (SMSI)

Type of data link connection to an integrated 1A ESS Switch or 5ESS Switch in AUDIX R1V4 or later software.

Software Shutdown

A procedure required to disable system operation and protect customer data stored on disk before a power down.

Split

Group (or queue) of analog ports on the switch. See also *Call-Distribution Group.*

Standalone AUDIX

An AUDIX R1V3 or later feature that allows the AUDIX system to connect to any switch without using a data link. The Standalone feature allows the AUDIX system to work with a switch built by a different vendor or one that runs an incompatible load of software.

Standard Announcement Set

One of the two announcement sets available in AUDIX R1V8 software. The standard announcement set provides the Streamlined User Interface (SUI); it has shorter prompts and is closely aligned with the standard announcement set used on DEFINITY AUDIX systems.

Status Line

The top line of an administration or maintenance form displayed on a terminal, showing the active system alarms (if any), logins (up to two), and threshold (space) violations.

Subscriber	A person to whom the AUDIX administrator assigns the ability to access the Voice Mailbox feature. Subscribers may also be assigned the optional Call Answer feature on the `subscriber` or `cos` forms or given LWC permission through the switch.
Subsystem	A major functioning element of AUDIX software and hardware. Subsystems include the Feature Processor (FP), Data Base Processor (DBP), and the Voice Session Processor (VSP).
Switch	An analog, digital, or electronic system where data and voice transmissions are not confined to fixed communications paths, but are routed among available ports or channels.
Switch Communications Interface (SCI)	The System 75 data link. An AUDIX adjunct normally connects to the SCI TN738 Interface-2 (INT2) board.
Switched Access	A connection made from one endpoint to another through switch port boards. This allows the endpoint (such as a terminal) to be used for several applications.
Synchronous Transmission	A type of transmission where the data characters and bits are exchanged at a fixed rate with the transmitter and receiver synchronized. This allows greater efficiency and supports more powerful protocols. The AUDIX-to-switch data link is synchronous.
System Administrator	Person usually at customer site who is responsible for AUDIX system administration and possibly Networking coordination.
System Administration Activity	Activity 9 on the Activity Menu which may be used only by an AUDIX system administrator who has announcement-control permission. This option allows the administrator to record, play, or edit subscriber names or system announcement fragments.
Text Service Interface	An AUDIX R1V4 feature that allows AUDIX headers to be sent to electronic mail services such as IBM PROFS using a PC/PBX 2780/3780 interface.
Threshold	A boundary used to indicate when available disk space is getting low. Both subscribers and filesystems are assigned thresholds.

Traditional Announcement Set	One of the two announcement sets available in AUDIX R1V8 software. The traditional announcements have slightly longer prompts and are based on the abbreviated version of the AUDIX R1V7 announcements.
Traffic	The flow of attempts, calls, and messages across a telecommunications network.
Translations	Software assignments that tell a system what to expect on a certain voice port or the data link, or how to handle incoming data. They customize the AUDIX system and switch features for users.
Two-Cabinet AUDIX	See *AUDIX Two-Cabinet Configuration*.
Type	The name entered on a screen form that identifies a kind of filesystem to software. Several types must be active for the AUDIX system to operate, such as `boot`, `adat`, `ndat`, `sdat`, `sst`, `vdat`, and `vtext`.
Undeliverable Message	A message that could not be delivered after a number of attempts specified by the system administrator (up to ten). This usually means the subscriber's mailbox is full.
Undelivered Message	A message that has not yet been sent to a subscriber's incoming mailbox. The message resides in the sender's outgoing message and may be modified or redirected by the sender.
Untouched Message	One of the R1V4 Executive Features that allows a subscriber to keep a message in its current category by using the **H (Hold) command. If the message is in the new category, message-waiting indication remains active (for example, the message-waiting lamp will remain lit).
User Population	A combination of light, medium, and heavy users on which AUDIX configuration guidelines are based.

Verbose Announcements

Prior to R1V8, the customer could choose between two types of AUDIX system voice prompts, verbose or abbreviated. Verbose announcements are voice prompts that are given in more detail than abbreviated announcements. Verbose announcements are not standard, therefore the customer must order verbose announcements separately. The verbose announcement set was discontinued in AUDIX R1V8.

Voice Link

The AUDIX VPT connection(s) to a call-distribution group (or hunt group) of analog ports on the switch.

Voice Mailbox

The standard AUDIX feature assigned to all subscribers giving them access to disk space on which to store, create, and send Voice Mail messages.

Voice Message

(Also called *Voice Mail*) Digitized voice information stored by the AUDIX system on disk memory.

Voice Session Processor (VSP)

A major subsystem on 32-port AUDIX systems that processes the voice and data information that control the AUDIX call setup operation, including port hardware and buffers. On one-cabinet AUDIX systems, the FP controls these boards (TDBI, VB, VPC, and VPT packs).

Voice Terminal

A telephone used for spoken communications with the AUDIX system. A touch-tone telephone with a message-waiting lamp is recommended for all AUDIX subscribers.

Voicing

Either speaking a message into the AUDIX system during recording, or having the system playback a message or prompt to a subscriber.

Volume

A physical removable cartridge or disk drive device. Volume names in software are called labels.

Work Group System (WGS)

A 6312, 6286, 6386, or equivalent WGS is a PC-like device required for the AUDIX Administration and Data Acquisition Package and the Text Service Interface.

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