



IntuityTM

FAX Messaging Administration

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An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or working on your company's behalf. Whereas, a "malicious party" is Anyone, including someone who may be otherwise authorized, who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based) or asynchronous (character-, message-, or packet-based) equipment or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll-facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company, including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

Your Responsibility for Your Company's Telecommunications Security

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- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure your:

- Avaya provided telecommunications systems and their interfaces
- Avaya provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products

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About This Document

Purpose

This document, *Intuity FAX Messaging Administration* (585-310-558), contains the procedures needed to enable fax interchange and printing through the Intuity messaging system and to continue adjusting the system as needed. Information is organized and presented in a user-oriented manner and allows easy access and retrieval of the information.

Intended Audience

This document is intended for the use of Intuity system administrators and others

Conventions Used

The following conventions were used in this document:

- Rounded boxes represent keyboard keys that you press.
For example, an instruction to press the enter key is shown as
Press ENTER.
- Square boxes represent phone pad keys that you press.
For example, an instruction to press zero on the phone pad is shown as
Press 0.
- The word “enter” means to type a value and press ENTER.

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

Enter y to continue.

- Two or three keys that you press at the same time (that is, you hold down the first key while pressing the second and/or third key) are shown as a rounded box that contains two or more words separated by hyphens. For example, an instruction to press and hold **ALT** while typing the letter d is shown as

Press **ALT-d**

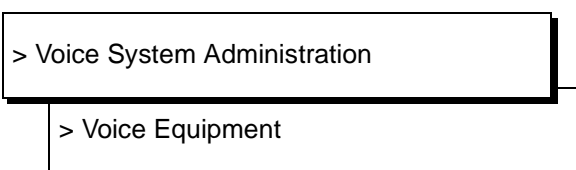
- Commands and text you type or enter appear in bold.
- Values, instructions, and prompts that you see on the screen appear as follows: `Press any key to continue.`
- Variables that the system supplies or that you must supply appear in *italics*.

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

The file *filename* is formatted incorrectly

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

Begin at the INTUITY Administration menu, and select the following sequence:



In this example, you would first access the INTUITY Administration menu. Then you would select the Voice System Administration option to display the Voice System Administration menu. From that menu, you would select the Voice Equipment option to display the Voice Equipment screen.

Related Resources

Besides this document, you may need to refer to some of the documents listed here with their part numbers and issue numbers::

<i>Intuity System Description</i>	585-310-211	1
<i>Intuity FAX Messaging Administration</i>	585-310-558	1
<i>Intuity AUDIX R3.3 Administration and Feature Operations</i>	585-310-552	2
<i>Intuity Documentation Guide</i>	585-310-540	3
<i>Intuity R3.0 Planning for Migrations and Upgrades</i>	585-310-651	1
<i>Intuity New System Planning for Release 3.0</i>	585-310-605	1
<i>Intuity MAP/5 Hardware Installation</i>	585-310-146	1
<i>Intuity Installation Checklist</i>	585-310-161	1
<i>Intuity MAP/40 Hardware Installation</i>	585-310-138	1
<i>Intuity MAP/100 Hardware Installation</i>	585-310-139	1
<i>Intuity Software Installation for Release 3.0</i>	585-310-160	1
<i>Intuity Integration with System 75 and DEFINITY Communications System G1 and G3</i>	585-310-214	3
<i>Intuity Integration with System 85 and DEFINITY Communications System G2</i>	585-310-215	1
<i>Intuity Integration with the 5ESS Switch</i>	585-310-219	1
<i>Intuity Integration with DMS-100</i>	585-310-223	1
<i>Intuity Integration with Northern Telecom SL-1, Meridian, and Meridian SL-1</i>	585-310-221	1
<i>Intuity Integration with Mitel</i>	585-310-222	1
<i>Intuity Integration with NEAX</i>	585-310-216	1
<i>Intuity Integration with ROLM 8000,9000,9571</i>	585-310-220	1
<i>Intuity Integration with Merlin Legend</i>	585-310-231	1
<i>Intuity AUDIX Digital Networking Administration</i>	585-310-533	1
<i>Intuity Call Accounting System User Guide</i>	585-310-728	1
<i>Intuity Call Accounting System Quick Reference</i>	585-310-729	1
<i>AMIS Analog Networking</i>	585-300-512	5
<i>Intuity Intro Voice Response</i>	585-310-718	1
<i>Intuity Platform Administration and Maintenance for Release 3.0</i>	585-310-557	1
<i>Intuity Message Manager Release 2.0 User's Guide</i>	585-310-731	1
<i>AUDIX Administration and Data Acquisition Package</i>	585-302-502	12
<i>Intuity Voice/FAX Messaging User Guide</i>	585-310-733	1
<i>Intuity Voice/FAX Messaging Quick Reference</i>	585-310-734	1
<i>Multiple Personal Greetings Quick Reference</i>	585-300-705	5

<i>Voice Messaging Wallet Card</i>	585-300-704	2
<i>Voice Messaging Outcalling Quick Reference</i>	585-300-706	1
<i>Voice Messaging Business Card Stickers</i>	585-304-705	2
<i>Intuity AUDIX R3.0 Voice Messaging Subscriber Artwork Package</i>	585-310-735	1
<i>Intuity Upgrade and Migration Procedures</i>	585-310-162	1

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Introduction to Fax Administration

1

This chapter describes the Intuity AUDIX Fax feature. It describes the basic concepts of the fax feature and gives an overview of how fax works. This chapter is intentionally written from the subscriber's point of view because you, the administrator, will be better prepared to administer this feature if you understand it from the user's perspective.

For more info: Several items in this chapter are described in greater detail in corresponding books in the Intuity documentation set. An eyeglass icon identifies these other references.



Introduction to Fax

Fax (facsimile transmission) has become a significant part of the way workers today do business, and it is used everywhere to communicate information. This growing reliance on fax as a business tool creates a need to better manage and control fax messages.

The fax-messaging feature gives you the ability to handle faxes using the powerful Intuity messaging capabilities. Besides sending, receiving, and printing a fax, you can also forward a fax, annotate a fax with a voice message, send a fax, and broadcast to multiple people.

The Intuity AUDIX fax feature provides four key capabilities to satisfy your communication needs:

- | | |
|--------------------|---|
| Mobility | You can access your faxes from anywhere. You can retrieve a fax from your mailbox and have it printed anywhere a fax machine is available. |
| Convenience | You can retrieve your faxes from your desktop, from your home office, from anywhere in the country, or from across the world. You can also retrieve your faxes <i>any time you want</i> . |
| Privacy | <i>You</i> control when and where a fax is printed, so that you can be sure that it ends up in only <i>your</i> hands. |
| Security | Only <i>you</i> can retrieve your faxes using your password-protected Intuity AUDIX login to access your mailbox. |

There are many ways that your organization can use the power and flexibility available by combining Intuity fax capabilities with fax communications:

- A worker can quickly distribute a 20-page report to customers at ten different out-of-state locations using *fax broadcast*.
- An on-the-road salesforce can access their mailboxes to retrieve and print faxes on the fax machine at their hotel or customer site.
- A manager who receives private or sensitive material, such as sales figures or an employee evaluation, can print this fax when desired and retrieve it immediately from the specified fax machine. If this manager sends confidential information to another subscriber, he or she can mark the fax as *private*.
- A manager can fax an important memo to all department employees, marking it as *priority*.
- A worker who receives an important fax can forward it to the department secretary, and attach a voice message with instructions on what action to take.

The fax feature is an extension of the Intuity messaging capabilities. It integrates messaging with fax technology by using several *building blocks* which are described in the following section.

 **NOTE:**

Fax capabilities are optional and must be purchased independently from the base Intuity AUDIX messaging application. This involves a system Right to Use (RTU) fee and an incremental port RTU fee. Core voice messaging capabilities are a prerequisite for fax; fax capabilities are not available as a stand-alone application.

Fax Building Blocks

The fax feature combines the send and receive capabilities of a stand-alone fax machine or fax modem on a PC with the many capabilities of Intuity AUDIX messaging. You can send, receive, annotate, forward, broadcast, and otherwise handle a fax message just as you do a voice message.

The existing capabilities of the Intuity AUDIX application are extended to handle the delivery and receipt of faxes:

- Sending a fax to another subscriber (internal fax) is similar to sending a voice message.
- Sending a fax to a nonsubscriber (external fax) uses call delivery.
- Receiving both *internal and external faxes* works the same as receiving voice messages or call answer calls in your mailbox.
- Printing a fax from your mailbox transmits the fax to a *fax endpoint* using *call delivery*. The fax endpoint and call delivery are key parts of the fax feature and are described in detail in this section.

The next section, "How the Fax Feature Works", describes the fax feature itself. A high-level understanding of how the feature works will help you, the administrator, better understand how to administer and maintain this feature.

Meanwhile this section describes several concepts fundamental to how fax works: the mailbox, port, fax endpoints, fax call delivery, and networking.

Mailbox

All incoming messages are intermingled in a common incoming mailbox, which provides a common set of services for multimedia messages, including voice, fax, and voice/fax messages. This mailbox lets you handle incoming and outgoing faxes the same way that you handle voice messages. The mailbox has a common login for retrieving any kind of message, and it provides new-message notification (login greeting with message count, Message Waiting Indication, and outcalling), regardless of message type.

You can use the mailbox in one of two ways:

- **Voice extension, with a second, fax-dedicated extension.** Having a personal fax extension allows incoming faxes to go directly into your mailbox via that extension, for later access and printing. These two separate extensions share a single mailbox; the fax extension has an administered relationship to the voice (primary) extension. The personal fax extension has limited voice mail services, only a brief greeting announcing that the extension is the subscriber's fax extension. This extension is administered to receive only faxes, it cannot be used for recording voice messages, and other subscribers cannot address messages to this extension.

- **Single number for both voice and fax.** This is ideal if you seldom receive faxes, or if you are absent from your desk most of the time. If you hear the transmitting fax machine's CNG tone (calling tone) when you pick up the telephone receiver, you must use Transfer to AUDIX to direct the fax message to call coverage.

The single, voice/fax extension does not work well if you receive frequent faxes or if you use your telephone a majority of the time. If you do use the single extension, you should record a greeting that tells callers how to transmit a fax from the subscriber interface.

Port

All messages are handled over the same type of port, whether the message is a voice message or a fax message. The IVC6 card supports both fax processing and voice processing capabilities. For this reason, callers and subscribers can access voice and fax capabilities over a single call to an IVC6 port.

Fax Endpoint

When you send a message directly to an internal or external fax machine, you are directing it to a fax endpoint. A fax endpoint is one of the following:

- A stand-alone fax machine, such as a personal fax machine on your desk or a department fax machine down the hall
- An individual PC fax modem
- A shared LAN fax server
- A fax port on a fax-enabled messaging system such as a fax-enabled Intuity owned by another company

When you access your mailbox and print a fax, you actually re-send that message from your mailbox to a fax endpoint. The Intuity AUDIX application uses fax call delivery to accomplish this.

Fax Call Delivery

Fax call delivery is used in two ways by the fax feature. Call delivery is used when redirecting a fax from your mailbox to a fax endpoint for printing. It is also used when a fax is sent or forwarded to a nonsubscriber, by either addressing the fax directly or using a mailing list.

The Intuity AUDIX application uses fax call delivery to transmit fax messages from a subscriber mailbox to fax endpoints over outbound calls placed from the system. This fax endpoint could be down the hall or around the world.

Fax call delivery lets you use the telephone number of a fax endpoint as a valid message delivery address. This further allows you to send a fax to both subscribers and non-subscribers, as one *fax broadcast* using the Intuity mailing list capability or you could also address the message at creation time.

Subscribers address messages to non-subscriber (external) fax endpoints using telephone numbers controlled by current call delivery tables. These call delivery tables are used to validate fax endpoint telephone numbers; they are a means to limit long distance and international calls.

Now that you are familiar with the three building blocks of fax — the mailbox, fax endpoints, and fax call delivery — the following section tells you how these are integrated with standard voice messaging to make the fax feature work.

Networking

With the fax feature, Intuity networking is extended to support networking of fax and voice/fax messages. Intuity users achieve more efficient communications by combining the fax feature with networking. For example, a fax broadcast sent via networking is transmitted only once, but can be received by several people. Compare this to a traditional fax broadcast that requires an outbound phone call for each recipient. Intuity networking reduces outbound-fax port usage and also transmits messages at a higher speed.

How the Fax Feature Works

Using Intuity AUDIX fax is different than using a stand-alone fax machine — *you* control sending, receiving, and printing faxes through your subscriber touchtone interface or using Intuity Message Manager R2.0 on your PC. Instead of walking down the hall and checking to see if a fax has come in on the department machine, you dial into your mailbox and listen to your messages. If you hear a fax header, the subscriber interface prompts you to print it.

here are the ways that you handle faxes through the subscriber interface:

- Creating and sending a fax
- Receiving a fax
- Retrieving and printing a fax


Each of these tasks is described in greater detail in this section. These descriptions give you a *general* idea of how fax works. They do not give you a step-by-step instructions on using fax. For that information, read the *Intuity Voice/Fax Messaging User Guide* (585-310-733).

NOTE:

If your extension or the system is not enabled for fax, you will not hear fax prompts.

Creating and Sending a Fax

Creating and sending a fax is very much like creating and sending a voice message. Using the subscriber interface, you can create and send two kinds of messages, a fax-only message or a combined voice/fax message delivered as a single compound message (these are called voice/fax messages). Creating and sending a fax are each described separately within this section. Delivering a fax is also detailed.

 **NOTE:**

The maximum size of an outgoing or incoming fax is approximately 40 pages.

Creating a Fax

You use the subscriber interface to create a fax message much as you do to create a voice message. However, you must access the subscriber interface from a fax endpoint from which you wish to transmit.

Begin by entering **1** from the Activity Menu to create a message (voice or fax). When you hear: "To send a fax, press pound. To record a voice component, wait for the tone then begin speaking. When finished recording, press pound to approve, or 1 to edit your message," you either:

- Press **#** to bypass creating a voice message and immediately address the fax-only message.

OR

- Record and address the voice message, then press **5** to append the fax.

You *must* address a fax message *before* you transmit it, because you will not be able to continue your Intuity AUDIX session after the fax transmission starts.

 **NOTE:**

You can use the full mailing list and addressing capabilities of Intuity messaging; you can address the message to either an internal extension(s), an external phone number(s), or both. This is called a *fax broadcast*.

If you wish to avoid tying up the fax machine as you record a voice message and fax each individual on a mailing list, you can send the fax to yourself, then forward it with a personal note to each recipient.

If you wish, you can access the Delivery Options menu and mark the message as priority and/or private, schedule it for later delivery, or store a copy of the fax in your file cabinet.


When finished creating the message and addressing it, you are prompted to press the Start button on the fax machine. At this point, load your document into the fax

machine, if you haven't already done so, and do whatever is required by your machine to transmit a fax..

Following fax transmission, the Intuity AUDIX application ends the session by hanging up.

 **NOTE:**

As an alternative, you can use Intuity Message Manager R2.0 or later to send a fax directly from their PC.

 **For more info:** For detailed information on using the subscriber interface, refer to *Intuity Voice/Fax Messaging User Guide* (585-310-733) or to the *Intuity Voice/Fax Messaging Quick Reference* (585-310-734).

Sending a Fax

Sending a fax works like sending a voice message — you create a fax, you address it, then you send it. Fax messaging gives you the same capabilities as voice messaging. You can:

- Forward a fax to either a subscriber or non-subscriber
- Reply to the sender of a fax, if the sender is a subscriber
- Send a *fax broadcast* to multiple addressees

Each of these options is described below. Each of these sending options applies to the *entire* message, in the case of a voice/fax message.

Forwarding a Fax

You can forward a fax to another subscriber, just as you would a voice message. When you access the fax through the subscriber interface, press **1** after listening to the voice message and/or fax header. You hear the prompt, "To reply to send by voice or fax mail, press **1**."

Like a voice message, you attach a voice annotation when forwarding a fax message. If you wish, instead you can attach a fax annotation when forwarding a voice message.

Replying to the Sender of a Fax

You can reply to a fax received from another subscriber. You do this the same way as you reply to a voice message. However, you can annotate the fax with a voice message or vice versa.

Using Fax Broadcast

You can send a fax to several people at once, either using a mailing list or specifying multiple recipients when addressing the message. This *broadcast* capability provides efficient fax distribution without having to fax the message separately to each individual.

NOTE:

Using fax broadcast impacts port usage when transmitting to nonsubscribers, unless your system uses networking. Fax broadcast uses multiple outbound ports to simultaneously handle traffic generated by a single message.

You, the administrator, control the number of ports that can be used simultaneously for outbound traffic, such as fax printing or sending faxes to nonsubscribers. This is described in Chapter 2, "Fax Administration" and Chapter 3, "Preventative Maintenance" of this book.

Delivering a Fax

The fax feature uses two means to deliver faxes. When you send a fax to another subscriber, the message is delivered like a voice message — deposited into that individual's mailbox.

The second means of delivering fax messages is *fax call delivery*, used for:

- Sending a fax message to an *external* or non-subscriber fax endpoint. (Remember, a fax endpoint can be a fax machine, an individual PC fax modem, a shared LAN server, or a fax port on a fax-enabled message system.)
- Redirecting a received fax from your mailbox to a fax machine for printing.

When you transmit a fax via call delivery, it remains in the Undelivered category of your Outgoing mailbox until it is successfully transmitted. Once it has been successfully transmitted (printed) it moves into the Accessed category of your Outgoing mailbox. This is described in detail in "Outgoing Mailbox", next in this section.

Fax Delivery Restrictions

If you try to send a fax or voice/fax message to one of the following, message transmission fails and the message moves into the undelivered or nondeliverable category of your Outgoing Mailbox:

- Fax or voice/vax messages to AMIS subscribers.
- A remote system that is fax-capable but to which you have not administered your system to send faxes (via the Digital Network Machine Administration screen, as described in "Enabling Fax for Remote Digital Machines (Optional)" in Chapter 3).

- A remote system that is not fax enabled.
- A remote subscriber that is not fax enabled, although his or her *system* is fax-enabled.
- A local subscriber that is not fax-enabled.

NOTE:

If a voice/fax message is sent to a fax-enabled, external endpoint, only the fax portion of the message is delivered.

Outgoing Mailbox

By accessing your Outgoing Mailbox categories, you can track the progress of the fax you sent or redirected for printing. As soon as you send the fax via your subscriber interface, a corresponding message header goes into the Undelivered category in the Outgoing Mailbox. After the fax prints or the fax is “successfully delivered,” the message header moves into the Accessed category.

If the fax print fails, the message header instead goes into the Undeliverable category instead. You also receive notification in your Incoming Mailbox.

The message remains in the Undeliverable category of the Outgoing Mailbox until it is removed by system audits. The retention period is administered via the Outgoing Mailbox field on the Subscriber or Class of Service screens. You can later retrieve the message from the outgoing category and re-send it.

Receiving a Fax

An incoming fax goes into your mailbox much the same way as other calls, such as call answer calls and voice mail sent by other subscribers. Fax tone interpretation is turned on as soon as the call is answered. If the application detects a CNG tone, the system then *handshakes* to receive the fax component, and begins recording the fax message.

The application stores the fax in your mailbox and notifies you via the Message Waiting Indicator that a fax has been received. This allows you to receive faxes using the same mailbox (phone number/extensions) for both voice and fax messages. A voice/fax message is stored as a single message.

When you access your mailbox, you hear an announcement of how many voice messages and how many fax messages are in your mailbox. Each fax header contains the date and time received, number of pages, and sender’s name and extension if sent by a subscriber.

NOTE:

A received fax or voice/fax message has the same outcalling notification capabilities as voice messaging: priority outcalling and subscriber administration of outcalling time and numbers.

There are two components of the fax feature which facilitate receiving a fax. These are the *personal fax extension* and the *Guaranteed Mailbox*, and they are described below.

Personal Fax Extension

If you receive frequent faxes, you may want a second, fax-dedicated extension. With this *personal fax extension*, you receive only voice messages through your phone set — faxes go directly into your mailbox without ringing your telephone. The personal fax extension shares the same mailbox as the voice extension, but it acts like a fax machine. Its only call answer capability is announcing “Fax extension for <name>,” followed by a CED tone (called fax tone).

NOTE:

The personal fax extension is administered to receive only faxes. It does not handle voice-only or voice/fax messages. For more information, refer to "Administering a Secondary Fax Extension" in Chapter 2, "Fax Administration" of this book.

Guaranteed Fax

Guaranteed Fax circumvents the problem of an incoming fax failing because a fax endpoint is busy or out of service. It temporarily stores faxes intended for an already-in-use fax machine, then automatically prints them when the machine is available. This involves administering the fax machine as a subscriber with call coverage, on the same PBX (Private Branch Exchange). When an incoming fax encounters a busy or out-of-service fax endpoint, the fax goes into a mailbox and is autoprined back to the fax machine.

The Guaranteed Fax extension should not be administered for personal greetings, but *must* have call coverage administered on the switch. It is also administered with a personal fax extension and this fax extension should be published as the phone number for this fax machine. This prevents voice and voice/fax messages from being sent to this mailbox.

Instructions on administering and maintaining the Guaranteed Fax are covered in Chapter 2, "Fax Administration" and Chapter 3, "Preventative Maintenance" of this book.

Retrieving and Printing a Fax

You access and print faxes through the subscriber interface. With autoprint activated, the fax is automatically printed to your default print destination when it comes into your mailbox. You still hear the message header notifying you that the fax was received. You may reprint the fax if you desire.

You can specify an external fax endpoint as a default print destination. However, the phone number must be within the allowable fax call delivery table.

⇒ NOTE:

A fax stays in your mailbox only as long as an ordinary voice mail message would. This message retention is administered via the Incoming Mailbox fields on the Subscriber or Class of Service screen. How many faxes you can save depends on the size of your mailbox. Of course, longer faxes take up more storage space.

You have six options for printing a fax. Three print options are accessed through the *subscriber interface* while reviewing your messages — same call print, default number print, or entered number print. The fourth option is *autoprint* which automatically prints your faxes when they arrive in your mailbox. The fifth is printing through Intuity AUDIX Message Manager. Autoscan, described later in this chapter, is a sixth print option, which prints all new faxes to the specified fax machine. (Operation is subject to system limits. If there is too much fax material in your mailbox, you will be notified, and you can later autoscan the rest of your faxes.)

Printing Through the Subscriber Interface

When you access your mailbox to retrieve a fax, you hear the fax message header, then: offers to print, delete, and skip the message. (Consult subscriber documents to find the many other options that are available at the header message.)

When you press *1 to print the fax, you hear three print choices: the default printer, another number, or the machine from which you are calling.

Each print option behaves differently:

- Pressing # redirects the fax to the pre-administered default print destination. (See "Administering Fax Printing" below.)
- Entering a specific fax extension followed by # prints the fax to the entered extension. This extension is validated, and then becomes the default extension for the rest of this message-retrieval session.

⇒ NOTE:

The telephone number entered here is optionally prepended with the Fax Print Prefix, whose administration is described in Chapter 2.

- Pressing *6 prints the fax on the fax machine from which the call was placed; this is called *same call delivery*. You hear the prompt: "Press START on your fax machine now. (Same-call message retrieval must be done from a fax endpoint.)"

Administering Fax Printing

You can administer your default print destination by selecting option 3 on the Subscriber Administration Menu. First you hear your fax print number and the state of your autoprint capability. Then you hear the printing administration menu.

To change your default print destination, press **1**, enter the desired extension or number, and press **#**. The fax entered here is appended to the Fax Print Prefix, whose administration is described in Chapter 2.

Autoscan

If you scan messages, you can enter **4** to print all new faxes. The subscriber interface presents the Print Fax Options menu, and you can print all the faxes to the default print destination, an entered extension, or on the same call (fax endpoint from which you accessed your mailbox).

Using and Administering Autoprint

Autoprint automatically prints received faxes to a default extension (default print destination). To use autoprint, you must first activate it through your subscriber interface. You use the Subscriber Administration Menu to control both autoprint and autodelete. After selecting option 3 from the Subscriber menu, enter **Y** to turn autoprint on or **N** to turn it off.

If you activate autoprint without administering a default print destination, you hear an error message. If you turn on autoprint, you are then prompted for autodelete.

NOTE:

When a fax is autoprinted, you still hear a message header for each received fax. For an autoprinted voice/fax message, you can retrieve and listen to the voice component through the subscriber interface. The autoprinted fax messages remain in the New category of the Incoming Mailbox until they are reviewed, therefore the MWI remains on.

Autodelete

Autodelete is administered through the subscriber interface. Autodelete removes a fax from your incoming mailbox as soon as it is successfully scheduled for printing. It removes the fax even if the fax transmission fails (perhaps the machine is out of paper, broken, or turned off). Since fax messages are deleted from your incoming mailbox, we recommend that you turn on autodelete only if the endpoint to which you send faxes is covered by a Guaranteed Fax Mailbox.

NOTE:

Voice messages and voice/fax messages are not autodeleted.

Printing Through Message Manager

Another way to print faxes is using Intuity Message Manager R2.0. This involves viewing your messages on your PC screen, selecting a fax message, and selecting the print fax command. Rather than printing to a fax endpoint, you can print to any printer available to Windows applications. You can also administer your default extension and autoprinting capabilities from Message Manager.

Using Fax with Intuity Message Manager

Intuity Message Manager is a PC-based tool that retrieves voice messages via the PC rather than the audio interface. You can view headers for messages currently stored in your mail box, then select a message to either listen to it (voice message) or view and print it (fax message). You can also store a fax as a PC file and later read it online, print it, or change it using a PC graphics package.

⇒ NOTE:

You must first be administered for both Message Manager and the fax feature. "Administering Fax for Intuity Message Manager" in Chapter 2 tells you more about this.

Intuity Message Manager R2.0 or later offers several elements for handling fax messages. You can:

- View the number of pages in the fax message header.
- Create messages from another PC application via a Windows print driver.
- Generate a fax cover page.
- Set fax resolution to fine or standard.
- Use fax viewer to view, print, zoom in and out, rotate, and export fax images to other PC file formats.
- Set and change default fax print destination, turn autoprnt on and off, and turn autodelete on and off.

For more info: *Intuity Message Manager User's Guide*, (585-310-725), Issue 2 or later

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⇒ NOTE:

Using the fax feature with Intuity Message Manager gives you convenient desktop organization and archival of your faxes. You can store a fax in your personal folder and later view it, print it, or forward it.

Initial administration of the fax feature involves preparing the Intuity platform and Intuity AUDIX application to handle this feature. This chapter begins with the initial administration tasks that are performed before enabling the fax feature for subscribers.

Other administrative tasks are then covered such as enabling the fax feature for subscribers and administering any Guaranteed Mailboxes.

For more info: Several tasks contained in this chapter are described in greater detail in corresponding books in the Intuity documentation set. An eyeglass icon identifies these other references.



This chapter tells you how to:

- Administer the Intuity platform for fax
- Administer Intuity AUDIX application for fax
- Administer fax for Intuity Message Manager
- Administer subscribers to take advantage of the Intuity fax feature
- Administer guaranteed fax mailboxes

This chapter also provides you with a checklist as a guide for performing initial administration tasks.

Initial Fax Administration

Below is the checklist for the preliminary tasks you need to perform to administer the fax feature. Each task corresponds to a section or sub-section in this chapter.

Table 2-1. Initial Fax Administration Checklist

Task	Comments	Done
ADMINISTER CALL-DELIVERY MACHINE		
Verify that fax and AMIS are enabled on the Intuity platform	Only AT&T/GBCS personnel can enable the Intuity platform for fax and AMIS	
Prepare a fax call-delivery machine		
Administer a fax call-delivery machine		
Enable fax for remote digital machines (if necessary)		
ADMINISTER THE AUDIX PLATFORM FOR FAX		
Identify Called Subscriber Information		
Administer fax Print Prefix		
Administer outcalling		
Enable ports for fax call delivery traffic		
ADMINISTER INTUITY MESSAGE MANAGER FOR FAX		

To administer the fax feature, you begin by administering it on the Intuity platform. This involves:

- confirming that fax and AMIS are enabled
- preparing a fax call delivery machine
- enabling fax for remote digital machines (if you use digital networking)

This section describes each of these tasks.

Verifying That Fax and AMIS are Enabled

First make sure that both fax and AMIS are enabled on the Intuity platform. Any Intuity system of release 3.0 or later has fax capability. However, fax capability is an optional feature and must be purchased independently from the base messaging application. This involves a system Right to Use (RTU) fee and an incremental port RTU fee.

NOTE:

Core voice messaging capabilities are a prerequisite for fax; fax capabilities are not available as a stand-alone application. Because AMIS is necessary

for the fax feature to work, purchasing fax capabilities automatically acquires the AMIS analog networking.

Both the fax feature and AMIS Analog networking must be enabled in order for fax to operate properly. To confirm that AMIS and fax have been enabled for your Intuity platform, do the following:

1. Log into Intuity Administration as sa.
2. Starting at the Intuity Administration menu, select the following menu options:

>Customer/ Services Administration

>Feature Options

The Customer/Services Administration : Feature Options screen appears.

3. Verify that the Fax Feature field is set to ON.
4. Verify that the AMIS Analog Networking field is set to ON.
5. If either of these fields is OFF, and you purchased the fax feature, call AT&T's Technical Service Organization (TSO) to request that fax be enabled for the Intuity platform.

⇒ NOTE:

If you purchased fax with a new system, these two fields should be turned on at the AT&T factory. If you add fax to an existing Intuity system, you must request this feature through the TSO and first pay the Right to Use fee and incremental port fee.

6. Press **CANCEL** (F6) to leave the Feature Options screen and press it again to return to the Intuity Administration menu.

For more info: Chapter 8, "Using Reports," in *Intuity Platform Administration and Maintenance for Release 3.0*, (585-310-557)



Administering a Fax Call Delivery Machine

The Intuity fax feature uses the AMIS call delivery feature to send a fax message to a fax endpoint, such as when a subscriber sends a fax message to an external fax endpoint, or when a subscriber prints a received fax by redirecting it to a fax machine for printing.

Fax endpoints must be identified so that, within the system address ranges, the Intuity AUDIX application can differentiate fax endpoints from local mailboxes and remote nodes. To do this, you must set up a call delivery machine. First, you use the AMIS Analog Machine Administration screen to establish a remote AMIS analog machine. This remote AMIS analog machine is subsequently administered as a call-delivery machine in the AUDIX administration application.

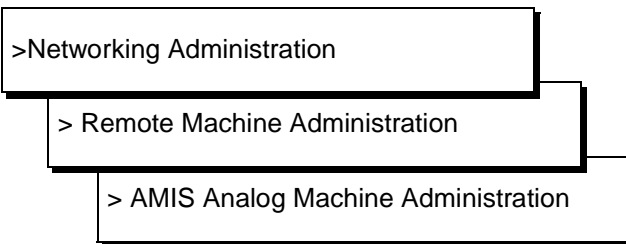
Use the Change Machine screen in the AUDIX administration application to identify ranges of extensions associated with this machine. This call-delivery table identifies the ranges of extensions associated with fax endpoints, thus any extension assigned to a fax-endpoint must fall within this range. When Intuity AUDIX directs a call to one of these fax endpoints, as identified by the extension range, the system handles the call with the proper fax protocols.

These tasks are described below.

Preparing a Fax Call Delivery Machine

Administering a fax call-delivery machine first involves setting up a remote AMIS analog machine. (Later the machine is changed to a call-delivery machine in the Intuity AUDIX application administration.) To prepare a fax-dedicated “machine,” do the following:

1. Log into Intuity administration as sa.
2. From the Intuity Administration menu, select the following options:



The AMIS Analog Machine Administration screen appears.

```

Networking Administration
Local Machine Administration
>Remote Machine Administration
Networking Channel Administration
Networking Traffic
TCP/IP Administration

AMIS Analog Machine Administration

Machine Name: _
Dial Str:
Message Transmission Schedule (hh:mm, 00:00 - 23:59) :
1: start:  :      end:  :
2: start:  :      end:  :
3: start:  :      end:  :

Enter Machine Name, use <CHOICES> for list
1  2ADD  3CHANGE  4DELETE  5RENAME  6  7FRM-MGMT  8CHG-KEYS

```

3. Enter a name of your choice in the Machine Name field (perhaps *fax1* or *fax2*). The machine name is a convenience to you, so enter a name that is easy to recognize and remember.

You must enter a unique one- to ten-character machine name. Use CHOICES (F2) to view the existing machine names so you can enter a unique name.

4. Enter a dial string (as described below) for the machine in the Dial String field. The Intuity system attaches this dial string to fax machine numbers that subscribers enter. The Intuity system then sends the complete number (entered numbers plus dial string) to the switch to call up the fax machine.

The dial string may be from 1 to 24 characters and numbers. The dial string plus the number the subscriber dials must be less than or equal to 24 characters.

Inside your building, you may want subscribers to enter a whole extension number to access fax machines. That being so, add a pause as described in the NOTE below. (The administration form requires an entry in this field, so a pause is equivalent to "no prefix.")

For a range of local numbers, the dial string might be “9” (or whatever trunk-access code or dial-access code is assigned to reach the public network). For example, if the extension length is seven digits and a subscriber specifies a valid seven-digit address (such as 555-6000), the local system would dial 95556000 to reach the fax endpoint.

For a range of long-distance numbers, the dial string would normally be 91 in the United States (the trunk- or dial-access code followed by 1). For example, if the extension length is 10 and a subscriber specifies a valid 10-digit address (such as 201-555-6000), the local system would dial 912015556000 to reach the fax endpoint.



NOTE:

You can instruct the local system to pause for a specified length of time by entering “P” (including quotes) in the dial string. A single “P” causes the system to pause approximately 1.5 seconds; a “P” followed by a digit from 1 to 9 causes the system to wait the specified number of 1.5-second increments. For example, if the dial string is 9”P2”5556000, the local system dials 9, waits about 3 seconds, then dials 5556000.

5. The message transmission schedule section of the AMIS Analog Machine Administration screen allows you to set time intervals for network communications. Intuity only sends faxes to call-delivery machines during the time intervals or *send times* you specify. Specify the time using a 24-hour or international time clock starting at 00:00 and ending at 23:59. For example, if you want the start time to be 11:00 p.m., enter 23:00 in the start time field. If, however, you want faxes delivered to machines at all hours: start at 00:00 and end at 23:59.

- a. Enter a start time in the `start` field.

Use the format HH:MM where HH stands for hours and MM stands for minutes. Specify the time using a 24-hour or international time clock. For example, if you want the start time to be 11:00 p.m., enter 23:00 in the field.

- b. Enter an end time in the `end` field.

Use the format HH:MM where HH stands for hours and MM stands for minutes. Specify the time using a 24-hour or international time clock. For example, if you want the end time to be 12:00 a.m., enter 00:00 in the field.

If you need to establish multiple send times, repeat the last two steps for the second and third schedules. If you need to establish only one schedule, continue.

Up to three cycles can be defined for each machine that you establish. Cycles may be assigned to avoid toll facilities or periods of heavy traffic if desired. The total time of the cycles can neither exceed 24 hours nor overlap. A cycle can span across midnight.

⇒ NOTE:

The times specified must be equal to or a subset of the outcalling transmission times (administered on the System-Parameters-Outcalling AUDIX Administration screen), or the message-delivery messages will never be sent. For example, if you schedule message-delivery messages to be sent anytime during the day (00:00 to 23:59), but outcalling periods are only scheduled from 07:00 to 18:00, message-delivery messages are sent between the hours of 7:00 AM and 6:00 PM.

If all the outcalling ports are busy, the system retries in one minute. If an outcalling port is available, but for some reason the system cannot deliver the message, the system uses the value entered in the `Rescheduling Increments For Unsuccessful Message Delivery` field on the System Parameters Features screen of the AUDIX Administration menu.

6. When you finish entering information for a remote machine, press `CHG-KEYS` (F8) then press `ADD` (F3) to enter the information into the system. Press `CHG-KEYS` (F8) again to return to the former key set.

After you press the key, the system adds the information and returns you to the `Machine Name` field. You see the following message on your screen:

Machine Added, Enter Machine Name, use <CHOICES> for list

7. For each call-delivery machine you plan to administer, repeat AMIS Analog Machine Administration as described above.

⇒ NOTE:

To enter information for another call-delivery machine, enter the next remote machine name over the previous name. When you press `ENTER` or `TAB` to move the cursor to the next field, the information for the previous machine clears from the screen.

8. When you finish entering call-delivery machines, press `CANCEL` (F6) until you return to the Intuity Administration menu.

Administering the Fax Call Delivery Machine in the Intuity AUDIX Application

Now that you have prepared a fax-dedicated call-delivery machine, you need to identify the extension range for the fax endpoints. You do this on the Change Machine screen in Intuity AUDIX administration:

1. Enter **change machine *machine_name*** at the `enter` command prompt. After you enter the command, you see the machine-profile screen.

Here, ***machine_name*** is the name of the call-delivery machine you just created (perhaps **fax1** or **fax2**). If you need reminding, use the `list machines` command to display a list of all machines administered on the system.

The machine-profile screen resembles the one shown below:.

```

messngr          Active          Alarms: M A          Logins: 4
change machine ac_local          Page 1 of 2
MACHINE PROFILE

Machine Name: ac_local      Type: calld          Location: remote-analog
Voiced Name? n          Extension Length: 5
Voice ID: 20          Default Community: 1

ADDRESS RANGES
Prefix          Start Ext.      End Ext.          Warnings
1: b          00000          99999
2: f          50000          59999
3: f          80000          99999
4:
5:
6:
7:
8:
9:
10:

enter command: change machine ac_local

```

Figure 2-1. Change Machine Screen, Page 1

2. Fax call-delivery machines are either of type **scalld** or of type **calld**. If the subject of this screen can handle several simultaneous calls, enter **calld**. A calld-type machine might be (for example) a hunt group. Alternatively, if the subject is a simple fax machine, enter **scalld** in the Type field. The AUDIX system waits until one call to an scalld machine is finished before it attempts another connection.
3. Press **(TAB)** to move past the Voiced Name field and to the Extension Length field.

(The Voice Name field contains an **n** for the machine since a name has not been recorded for the machine. This field automatically changes to **y** if you record a name for the machine. Once a name has been recorded, you can administer the field from this screen.)

4. Enter an extension length for the call-delivery machine.

Enter a number between 3 and 10. Choose an extension length as follows:

The extension length field identifies the number of digits the local system must dial from a message delivery address entered by a subscriber. For example, if the extension length is **10**, the Intuity system dials the dial string (administered when you prepared the machine) followed by the last ten digits of the number entered by a subscriber.

5. Enter the number of the default community of subscribers to which you wish to assign this machine (if any).

A community represents a group of subscribers assigned certain messaging privileges and restrictions. Use the feature to group subscriber types. You can then restrict a group from receiving messages or from sending to other groups. The Community ID field identifies the community to which you wish to assign this machine. For more information on creating communities, refer to Chapter 3, under the heading: "Setting Up Community Sending Restrictions," in *Intuity AUDIX R3.3 Administration and Feature Operations*, 585-310-552.


6. Enter the Address Ranges for the call-delivery machine

The Address Range section of the Machine Profile screen allows you to set prefix and address ranges for the call-delivery machine.

The number that a subscriber is actually to dial is the prefix followed by a number within the address range. For example (refer to the previous illustration), If a subscriber dials F55555, the illustrated call-delivery machine will be used to deliver a fax to the fax endpoint at extension 55555.

Refer to the following guidelines as you administer the address ranges:

- Enter the numbers that define the range of remote fax telephone numbers you want subscribers to access.
- The number of digits in the start and end extensions must agree with the number shown in the Extension Length field. Leading zeros may be needed to conform to this requirement. The end extension must be equal to or greater than the start extension.
- If you specify the same number as both the starting and the ending extension, then you have specified that particular number rather than a range of numbers. This technique is used to identify the telephone number of a particular machine.
- Up to ten different ranges can be specified. Call delivery address ranges must be unique; they cannot overlap with other call delivery, networking, or AMIS address ranges.

 **NOTE:**

The Warnings field indicates when a duplicate or overlapping range is being assigned. If you get a warning message, display the List Address-ranges screen to check which extension numbers are in use.

7. Use the following steps to enter address ranges information on the call-delivery machine.

- a. Enter a machine prefix in the `Prefix` field.
The subscriber must dial this prefix to find a call delivery machine to send a fax. It may be used to readily identify a particular class of

machines. (The prefix can also be used as a security measure. It is easily changed on this screen and the resulting dialup numbers can be kept among a few subscribers.)

- b. Enter the first extension number of the address range in the `Start Ext.` field.

For example, if your PBX or switching system uses extensions between 2000 and 3000, enter 2000 in the `Start Ext.` field.

- c. Enter the last extension number of the address range in the `End Ext.` field.

For example, if your system uses extensions between 2000 and 3000, enter 3000 in the `End Ext.` field.

 **NOTE:**

Repeat these steps for each address range you need to enter. You can enter a maximum of ten.

- 8. Press `NEXTPAGE` (F7) to move to the next page of the screen.
- 9. Enter **y** for yes in the `Send to Non-Administered Recipients` field. This field should always be set to y for call-delivery machines that transmit faxes. This way, a subscriber is allowed to send to any number in the specified range. (If *n* were entered in this field, specific fax telephone numbers would have to be set up as administered remote subscribers.)
- 10. When you finish entering call-delivery machine information, press `ENTER` (F3) to save the information in the system database. You receive the following confirmation message and the cursor returns to the command prompt:

```
Command Successfully Completed
```

- 11. Enter **Exit** at the command prompt to leave the Machine Profile screen

Enabling Fax for Remote Digital Machines (Optional)

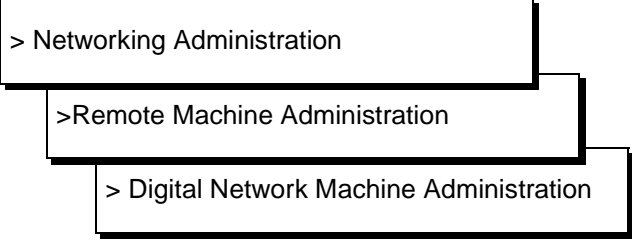
Digital networking can transmit voice, fax and voice/fax messages. If the remote machine has fax capabilities, and if your subscribers need to exchange faxes with it, follow the procedure below. Using this procedure, you inform your local machine that the remote machine can handle faxes.

For more info: Chapter 8, "Ongoing Machine Administration," in *Intuity AUDIX Digital Networking Administration*, (585-310-533)

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To enable the fax feature for digital networking, do the following:

1. Starting at the Intuity Administration menu, select the following menu options:



The Remote Digital Networking Machine screen appears.

```

Digital Network Machine Administration
Machine Name: fax-1          Connection Type: DCP MODE 3
Dial Str: 85398
Message Transmission Schedule (hh:mm, 00:00 - 23:59)
  1: start: 00:00          end: 23:59          interval: 00:05
  2: start: 00:00          end: 00:00          interval: 00:00
  3: start: 00:00          end: 00:00          interval: 00:00
Data Rate: 64000          Password:
Channel: 00          Machine Type: INTUITY 3.0 or later
Send Multimedia Messages (e.g. FAX) ? : Y

Enter a Connection type, use <CHOICES> for options
1 HELP 2CHOICES 3 4PREV-FRM 5NEXT-FRM 6 CANCEL 7 8CHG-KEYS
```

2. Enter **y** in the Send Multimedia Messages field.
3. Press **ADD** (F2) to update the information.
4. Enter **CANCEL** (F6) repeatedly to leave the Remote Digital Networking Machine screen and return to the Intuity Administration menu.

Enabling fax with the Remote Digital Networking Machine screen defines, for the local machine, the fax capabilities of the *remote machine*.

However, a fax sent to a remote machine could fail if the remote system is not fax enabled. A fax sent to a remote machine could fail if the remote system is not fax capable (for example if the remote machine were a revision 1 or 2 Intuity system).

An attempted transmission could also fail if the subscriber receiving the fax or voice/fax message is not fax enabled, as described in *Enabling Subscribers* later in this chapter.

Administering the Intuity AUDIX Application for Fax

Once you have administered the Intuity platform for fax, you need to administer the Intuity AUDIX system for fax capabilities, using the Intuity AUDIX administration screens. This involves:

- Identifying Called Subscriber Information (CSI)
- Administering the fax Print Prefix
- Administering Outcalling
- Enabling additional ports for Call Delivery Traffic

This section describes each of these tasks.

Enable Fax/AMIS Networking

1. At the command line, enter **ch sy an** to bring up the Change System-Parameters Analog-Network screen.
2. Ignoring all other fields enter **y** in the fields marked:
AMIS Analog Networking Incoming Allowed?
AMIS Analog Networking Outgoing Allowed?

 **NOTE:**

Your changes to this screen do not take effect until you stop and restart the AUDIX system. See “Restarting the Voice Mail System” later in this chapter.

Administer Fax Print Prefix (Optional)

Use the fax print prefix only where you want subscribers to print via *one* call-delivery machine. It is not usually used except where all traffic is local. The fax print prefix identifies a particular call-delivery machine. This prefix is then prepended to the telephone numbers supplied by subscribers when they print received fax messages.


 **NOTE:**

The fax Print Prefix (which identifies the call delivery machine to be used for fax call delivery) is used for the three fax printing methods:

- Autoprinting received faxes to the default number, previously specified through the subscriber touchtone interface
- Manually directing faxes to a default number
- Manually directing faxes to an entered number

To administer the fax print prefix, do the following:

1. At the command line, enter **ch sy f** to bring up the Change System-Parameters Feature screen. Repeatedly press **NEXTPAGE** (F7) until page 4 appears.
 - To disable the print prefix, delete any entry in the Fax Print Prefix field on page four.
 - To enable the print prefix, enter the prefix in the Fax Print Prefix field on page four. This may be up to 21 digits in length.
2. Press **ENTER** (F3) to update the information.

 **NOTE:**

When you administer a fax print prefix, you must have established a corresponding call delivery machine, by following the instructions already given in this chapter.

Administering Outcalling

The fax feature uses outcalling to deliver a fax message sent by a subscriber, and to print a fax message received by a subscriber. If outcalling is not already administered on your Intuity AUDIX system, perform the procedure in this section.

If you have *already* administered outcalling, you may need to change the Start and End Times for outcalling to allow fax messages to be transmitted and received around the clock.

Additional Ports for Call Delivery Traffic

Since the Intuity AUDIX fax feature relies on call delivery, enabling fax requires additional outgoing ports to handle the increased call delivery traffic that results from transmitting fax messages for printing. Each time a subscriber sends a fax message out for printing (normally to a fax machine, but also to a PC-fax modem or a fax port on a LAN server), the Intuity AUDIX system uses an outgoing voice port.

The Design Center can help you estimate port usage, based on the typical call traffic on your system. The *Intuity New System Planning for Release 3.0*, (585-310-605) also provides information on planning system usage and traffic volume, and how they impact ports.

To administer outcalling, do the following:

1. At the command line, enter **ch sy o** to bring up the Change System-Parameters Outcalling screen.
2. Enter the following information:
 - **y** in the Outcalling Active? field.

- Outcalling message times in the Start Time and End Time fields (this limits the times when subscribers can print faxes).
- Outcalling interval in the Interval field(s). This is the interval between outcalling attempts within the specified outcalling period, specified in minutes.
- Number of ports to be dedicated to outbound traffic in the Maximum Simultaneous Ports field. This limit applies to all types of outbound traffic, including new fax call delivery traffic, currently supported outcalling, AMIS, and message delivery traffic.

This number must be greater than one but less than the ports available. This varies with the particular Multiple Application Platform (MAP). MAP100 has 64 ports, MAP 40 has 42 ports, and MAP5 has 12 ports.

- Delay in minutes in the Initial Day field (optional).
- The maximum length of an outcalling number in the Maximum Number Digits field, a value from 3 and 29. This limits outcalling to only local numbers, for example, if this field value is eight.

3. Press **ENTER** (F3) to update the information.

 **NOTE:**

Your changes to this screen do not take effect until you stop and restart the AUDIX system. See “Restarting the Voice Mail System.”

For more info: Chapter 4, “AUDIX Administration,” in *Intuity AUDIX R3.3 Administration and Feature Operations*, (585-310-552)

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Restarting the Voice Mail System

You must stop and restart the voice mail system before changes to AMIS networking and outcalling can take effect. To restart the voice mail system, do the following:

1. At the command line of an AUDIX administration screen, type **reset voice-mail restart**.

The following screen appears:

```
drbig1           Active           Alarms: MmWA           Logins: 5
reset voice-mail restart           Page 1 of 1
                RESET SYSTEM RESTART

WARNING - Pressing [Enter] now causes the AUDIX system to be restarted.
          The restart cannot be cancelled after [Enter] has been pressed.

          The restart will be performed in a camp-on manner.

          Press [Cancel] to avoid doing the restart.

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

2. Press **ENTER** (F3).

The following screen appears, followed by a status initialization prompt.

```
drbig1           Active           Alarms: MmWA           Logins: 4
reset voice-mail restart           Please Wait
4GGSTATUS           RESET SYSTEM RESTART

    Remaining voice ports active: 0
    Remaining networking ports active: 0

    Tape operation in prformed in a camp-on manner.

    Press [Cancel] to avoid doing the restart.

    █

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

3. Wait for the cursor to return to command line.

When the cursor returns to the command line, the restart is complete.

Administer Fax for Intuity Message Manager

Administering Intuity Message Manager for fax is the same as administering it for voice messaging. Beyond administering fax as set out above, no specific fax administration is necessary for Intuity Message Manager, however, the following criteria are necessary for fax to run on Message Manager:

- Purchase and enable fax on the Intuity platform.
- Purchase and install the *fax* version of Intuity Message Manager *R2.0*, or newer release.
- Administer Intuity AUDIX for Intuity Messaging Application Interface Program (IMAPI), using the System-Parameters Imapi-Options screen.

For more info: See also:
Chapter 4, "AUDIX Administration," in *Intuity AUDIX R3.3 Administration and Feature Operations*, (585-310-552)

⇒ NOTE:

As with the Intuity Platform, handling fax messages on the PC requires additional space. Refer to the *Intuity Message Manager Release 2.0 User's Guide*, (585-310-731) for more information.

Administering Subscribers for Fax

Fax can be administered per subscriber, or it can be administered for a Class of Service. Also, you can administer a separate, secondary fax extension for heavy fax users. This section tells you how to perform these three tasks.

Enabling an Individual Subscriber for Fax

Once you have administered fax on the Intuity platform, you are ready to enable Intuity subscribers so that they can use this feature. To do so, perform the following steps:

1. If you are not already in the Intuity AUDIX Administration menu, access it from the Intuity Administration menu.
2. At the command line, enter **ch sub *name*** or **ch sub *number*** to bring up the Subscriber screen

3. Press **NEXTPAGE** (F7). A screen similar to the following appears:

```

messngr           Active           Alarms: Mm A           Logins: 8
change subscriber 84804           Page 2 of 2
SUBSCRIBER CLASS OF SERVICE PARAMETERS
Addressing Format: extension
System Multilingual is ON           Login Announcement Set: System
Call Answer Language Choice? n      Call Answer Primary Annc. Set: System
Call Answer Secondary Annc. Set: System
PERMISSIONS Type: call-answer       Announcement Control? n
Outcalling? y           Priority Messages? y       Broadcast: none
IMAPI Access? y        IMAPI Voice File Transfer? y       Fax? y
INCOMING MAILBOX           Order: fifo           Category Order: nuo
Retention Times (days), New: 60     Old: 30           Unopened: 30
OUTGOING MAILBOX           Order: fifo           Category Order: undfa
Retention Times(days), File Cab: 60   Delivered/Nondeliverable: 5
Voice Mail Message (seconds), Maximum Length: 1200 Minimum Needed: 32
Call Answer Message (seconds), Maximum Length: 1200 Minimum Needed: 8
End of Message Warning Time (seconds):
Maximum Mailing Lists: 25           Total Entries in all Lists: 500
Mailbox Size (seconds), Maximum: 2400           Minimum Guarantee: 0
enter command: change subscriber 84804
1Cancel 2Refresh 3Enter 4ClearFld 5Help 6Choices 7NextPage 8PrevPage

```

Figure 2-2. Change Subscriber Screen, Page 2

4. Enter **y** in the Fax? field (under PERMISSIONS), on the illustrated screen.
5. Expand message capacities to the larger of:
 - Double voice-only capacities to allow for both voice and fax messages. For example, change Maximum Message Lengths of 700 seconds to 1400 seconds.
 - At least 20 minutes of capacity to allow for both voice and fax messages. In this case, enter Maximum Message Lengths of 1200 seconds.
6. Expand the mailbox capacity to the larger of:
 - Double the larger message capacity to allow for both voice and fax messages. For example, if the longer Maximum Length just entered was 1400 seconds, set mailbox size to 2800 seconds.
 - At least 40 minutes of capacity to allow for both voice and fax messages. In this case, enter a Mailbox Size of 2400 seconds.
7. Press **ENTER** (F3) to update the information.



NOTE:

Enabling a subscriber for fax has no effect unless fax has *first* been purchased, installed, and enabled for the Intuity platform.

Enabling a Class of Service for Fax

You can also enable fax for a Class of Service by doing the following:

1. If you are not already in the Intuity AUDIX Administration form, access it from the Intuity Administration menu.
2. At the command line, enter **ch cos *cos-number*** to bring up the Class of Service screen.

A screen similar to the following screen appears:

```

messngr          Active          Alarms: M A          Logins: 4
change cos N          Page 1 of 2
          CLASS OF SERVICE

          Name: N          COS Number: 0          Modified? y
Addressing Format: extension

          Login Announcement Set: System
System Multilingual is ON          Call Answer Primary Annc. Set: System
Call Answer Language Choice? n          Call Answer Secondary Annc. Set: System

PERMISSIONS Type: call-answer          Announcement Control? n
  Outcalling? y          Priority Messages? y          Broadcast: none
  IMAPI Access? y          IMAPI Voice File Transfer? y          Fax? y

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

Figure 2-3. Change COS Screen, Page 1

3. Enter **y** in the Fax? field under PERMISSIONS.
4. Press **(ENTER)** (F3) to update the information.



NOTE:

Enabling a class of service for fax has no effect unless fax has first been purchased, installed, and enabled on the Intuity platform.

Administering a Secondary Fax Extension

Subscribers who receive a large number of faxes may wish to have a separate, secondary fax extension. This is a secondary extension dedicated to incoming fax calls. Only faxes can be received by such extensions, voice messages cannot be recorded, and other subscribers cannot address messages to this extension.

A secondary fax extension is administered on the switch as a phantom extension with a direct inward dialing number. This extension is setup to cover directly to AUDIX. This way, the secondary fax extension can be dialed as if it were a facsimile machine. To administer a secondary fax extension on the Intuity system, you set up a second, fax-dedicated extension for a subscriber's mailbox, so that the subscriber has *two* extensions and *one* mailbox.

The primary extension is administered for Call Answer, Personal Greetings, and other voice mail services; while the secondary fax extension provides only a brief greeting that reveals the subscriber's name and invites you to leave a fax.

To administer a secondary fax extension, do the following:

1. Have the switch administrator create a phantom extension with a direct inward dialing number for the subject subscriber. Note the extension number created.
2. Have the switch administrator administer the phantom extension to cover directly to the Intuity system.
3. If you are not already in the Intuity AUDIX Administration menu, access it from the Intuity Administration menu.
4. At the command line, enter **ch sub *name*** or **ch sub *number*** to bring up the Subscriber screen. (Here, *number* is the main extension number of the subscriber, not the secondary extension number.)

A screen similar to the following screen appears:

```
messngr      Active      Alarms: Mm A      Logins: 7
change subscriber 84804      Page 1 of 2
SUBSCRIBER

      Name: Barton, Clara      Locked? n
      Extension: 84804      Password:
      COS: N      Miscellaneous:
Switch Number: 13      Covering Extension:
      Community ID: 1      Broadcast Mailbox? n
      Secondary Ext: 88332

enter command: change subscriber 84804
1Cancel 2Refresh 3Enter 4ClearFld 5Help 6Choices 7NextPage 8PrevPage
```

Figure 2-4. Change Subscriber Screen, Page 1

5. Tab to the Secondary Ext. field and type the number of the subscriber's secondary fax extension. (This may be a three to ten digit number, but it must have the same number of digits as the primary extension.)
6. Press **(ENTER)** (F3) to update the information.

Administering Guaranteed Fax

Guaranteed Fax provides coverage for busy or out-of-service fax endpoints, such as a stand-alone fax machine or a fax modem on a PC. Guaranteed Fax uses a mailbox to which faxes are redirected while the fax endpoint is busy. This Guaranteed Fax mailbox is used for temporary storage for a fax, followed by autoprinting back to the originally-called fax endpoint.

Guaranteed Fax can be administered as an ordinary mailbox or as a secondary extension. Each method has its advantages.

In either case, the fax endpoint is set up on the switch for call coverage to AUDIX so that, while the fax endpoint is busy, an incoming fax is directed into the AUDIX mailbox.

Administered as an ordinary mailbox, the fax endpoint is treated as an Intuity extension. Intuity messaging can be used with this number exactly as it can be for any Intuity subscriber. For example, a fax can be sent directly to the fax endpoint's extension as a message to an Intuity extension. On the other hand, voice messages sent to this mailbox (perhaps as attachments to forwarded fax messages) remain in the mailbox using up its maximum size. Such messages have to be manually deleted by the Intuity administrator.

Administered as a secondary fax extension, the fax endpoint is treated as a printer. Voice components of an incoming call are ignored. The fax data are recorded and the fax endpoint is repeatedly tried until the fax can be delivered. There is no provision, however, for using the messaging features of Intuity.

Guaranteed Fax as an Intuity Subscriber

To administer Guaranteed Fax as an ordinary subscriber, you add a subscriber in the usual way and administer the subscriber for fax on the second screen of the add (or change) subscriber form as described earlier in this chapter. Finally, you activate autotyping and autodelete for this subscriber.

To administer a fax endpoint as an Intuity AUDIX subscriber, do the following:

1. Have the switch administrator administer the facsimile machine's extension for call coverage to AUDIX.
2. If you are not already in the Intuity AUDIX Administration menu, access it from the Intuity Administration menu.
3. Enter **add sub extension** to bring up the Add Subscriber screen. (Here, *extension* is the number of the facsimile machine.)
4. Add an AUDIX subscriber as described in *Intuity AUDIX R3.3 Administration and Feature Operations (585-310-552)*.

5. Press **NEXTPAGE** (F7). A screen similar to the following appears:

```

messngr          Active          Alarms: Mm A          Logins: 9
add subscriber          Page 2 of 2
SUBSCRIBER CLASS OF SERVICE PARAMETERS
Addressing Format: extension
System Multilingual is ON          Login Announcement Set: System
Call Answer Language Choice? n    Call Answer Primary Annc. Set: System
Call Answer Secondary Annc. Set: System
PERMISSIONS Type: call-answer          Announcement Control? n
Outcalling? y          Priority Messages? y          Broadcast: none
IMAPI Access? y          IMAPI Voice File Transfer? y          Fax? y
INCOMING MAILBOX          Order: fifo          Category Order: nuo
Retention Times (days), New: 2          Old: 1          Unopened: 1
OUTGOING MAILBOX          Order: fifo          Category Order: undfa
Retention Times(days), File Cab:          Delivered/Nondeliverable: 5
Voice Mail Message (seconds), Maximum Length: 240 Minimum Needed: 32
Call Answer Message (seconds), Maximum Length: 1200 Minimum Needed: 8
End of Message Warning Time (seconds):
Maximum Mailing Lists: 25          Total Entries in all Lists: 500
Mailbox Size (seconds), Maximum: 3600          Minimum Guarantee: 0
Press [ENTER] to execute or press [CANCEL] to abort
enter command: add subscriber
1Cancel 2Refresh 3Enter 4ClearFld 5Help 6Choices 7NextPage 8PrevPage
    
```

Figure 2-5. Add Subscriber Screen, Page 2

6. Enable the new subscriber for fax as previously described in this chapter.
7. Set Retention Time to only two or three days, however, to avoid accumulating undeleted messages.
8. Expand call-answer message length to 1200 seconds.
9. Expand mailbox size to 3600 seconds.

Use the (telephone) subscriber interface to:

1. When the system asks for your name reply with the name of the fax endpoint (for example, *Sales Dept. fax machine*).
2. Record a greeting that identifies the fax endpoint.
3. Activate autoprinting from the mailbox (to the specified fax endpoint).
4. Enter the fax endpoint extension as the default fax machine.
5. Activate Autodelete, which helps to keep the mailbox from exceeding maximum storage.

Guaranteed Fax as a Secondary Extension

To administer Guaranteed fax as a secondary fax extension, add a subscriber with an extension number that is within the range of numbers in the Intuity dial plan, but not with an extension number recognized by the switch. The number of the fax endpoint is entered on the first page of the add (or change) subscriber form as the secondary extension of this non-existent subscriber.

To administer a fax endpoint as a secondary fax extension, do the following:

1. Have the switch administrator administer the facsimile machine's extension for call coverage to AUDIX.
2. If you are not already in the Intuity Audix Administration menu, access it from the Intuity Administration menu.
3. Enter **add sub extension** to bring up the Add Subscriber screen. (Here *extension* is a number in the Intuity dial plan, but not in the dial plan of the switch.)
4. Add an AUDIX subscriber as described in *Intuity AUDIX R3.3 Administration and Feature Operations (585-310-552)*.
5. Enter the facsimile machine's extension number as a secondary extension as just described under "Administering a Secondary Fax Extension."

Use the (telephone) subscriber interface to:

1. When the system asks for your name reply with the name of the fax endpoint (for example, *Sales Dept. fax machine*).
2. Record a greeting that identifies the fax endpoint.
3. Enter the fax endpoint extension as the default fax machine.
4. Activate autoprinting from the mailbox (to the specified endpoint).
5. Activate Autodelete which helps to keep the mailbox from exceeding maximum storage.

Guaranteed Fax Considerations

There are several considerations when implementing Guaranteed Fax. The interaction of the fax endpoint's extension and this fax mailbox requires periodic monitoring. See also Chapter 3, "Preventative Maintenance":

- The fax endpoint's mailbox must be large enough to temporarily store a potentially large number of fax files.
- Faxes which have somehow not been removed by autodelete must be manually deleted periodically, otherwise the mailbox could be filled to maximum capacity.

- The mailbox must be periodically monitored for voice messages. These come into the mailbox as part of a voice/fax message, but are never removed by autodelete.
- The fax machine's paper supply and toner cartridge must be periodically monitored. If the fax machine is out of paper, the Guaranteed Fax mailbox will fill up with faxes which cannot be printed.

Performing ongoing administration and preventative maintenance is the key to problem-free system operation. It is important to establish a regular schedule for maintenance tasks. Performing regular administration and maintenance identifies problems that could otherwise be compounded.

The alarms and warnings for the fax feature are documented in *Intuity Platform Administration and Maintenance for Release 3.0* (585-310-557) book.

Checking the Administrator's Log

Check the status line at the top of the AUDIX Administration screen at least once a day. If `Alarms: A` appears on the line, investigate the Administrator's Log (as described below) to discover what the system is reporting.


The Administrator's Log identifies remarkable events in the system. These events include problems that should be corrected by you, the system administrator. Some such events directly affect fax processing, such as full subscriber mailboxes and undeliverable messages.

The system warns you of potential problems by displaying an alarm message (`Alarms: A`) on the Intuity status line when it logs an administration event. When you observe such an alarm message, access the Administrator's Log screen to view current error messages and a description for each problem.

When you see `Alarms: A` on the Intuity status line, do the following to view the administrator's log:

1. If you are not already in the Intuity AUDIX Administration menu, access it from the Intuity Administration menu.


2. At the command line, enter **di ad** to bring up the Administrator's Log screen.
3. Type **vm** in the `Application` field on page 1 to specify Intuity AUDIX Voice Messaging events.
4. Press `ENTER` (F3) to display the events.
5. Examine the displayed events. Events, alarms, and their associated repair procedures are given in the chapters mentioned below of the *Intuity Platform Administration and Maintenance for Release R3.0* book.
6. If the book calls for repair in the case of a displayed event, take whatever corrective action is necessary.
7. To display Intuity Platform events, repeat step 3 through step 6 entering **vp** in the `Application` field on page 1 of the form. These events are also given in the chapters mentioned below of the *Intuity Platform Administration and Maintenance for Release R3.0* book.
8. Press `CANCEL` (F1) to exit the screen.

 **For more info:** Administrator's-log alarm descriptions and appropriate repair actions are given in Chapter 3 "Logs," and Chapter 10, "Administrators Log Messages and Repair Actions," in the *Intuity Platform Administration and Maintenance for Release 3.0* book, (585-310-557)

Checking the Alarm Log

The alarm log is the starting point for troubleshooting system problems because it contains descriptions of all significant problems detected by the system. The alarm log contains active alarms and resolved alarms (alarms corrected either automatically or by repair procedures).

To view fax-related alarms in the Intuity platform alarm log consult the text referred to at the spectacle icon below:

 **For more info:** Chapter 16, "VM (Intuity AUDIX Voice Messaging Alarms)" and Chapter 17, "VP (Intuity Voice Platform Alarms)," in the *Intuity Platform Administration and Maintenance for Release 3.0* book, (585-310-557)

Monitoring Guaranteed Fax

There are several maintenance tasks involved with the Guaranteed Fax component of the fax feature:

- checking that the fax machine is operational

- monitoring the space available in the mailbox associated with the guaranteed fax extension
- routinely removing voice messages

Checking That the Fax Machine is Operational

When you administer a facsimile machine for guaranteed fax, ensure that someone is responsible for the operation of the machine. Have them check daily that the fax machine is operational. A number of things can disable the machine, meaning that every fax sent to this machine ends up in the guaranteed fax mailbox without the ability to print the faxes on the intended machine. The fax machine could be:

- turned off
- broken
- out of paper
- have an empty toner cartridge
- have a paper jam

To prevent any of these deficiencies, have the fax machine checked daily!

Monitoring Guaranteed Fax Mailbox Space

The mailbox size for a guaranteed fax machine must be sufficient to temporarily store a (potentially large) number of fax files. Especially during the first few weeks of fax operation, some guaranteed fax mailboxes may need regular adjustments. To size the guaranteed fax mailbox:

1. Mark down each time an administrator's alarm advises you of a full mailbox assigned to the guaranteed fax machine.
2. If this happens frequently:
 - a. Access the *change subscriber name or extension* command in the Intuity AUDIX administration screens. (See *Intuity AUDIX Administration and Feature Descriptions* for details.)
 - b. Press **NEXTPAGE** (F7) to advance to page 2 of the form and enter a larger value in the `Mailbox Size (seconds), Maximum` field on page two of the Subscriber screen for this extension

You can manually check usage for this mailbox by examining the value in the `Mailbox Space Used` field on the Subscriber Daily Traffic screen. This is described under "Monitoring Mailbox Space" later in this chapter.

 **NOTE:**

Be aware that increasing subscriber mailbox space increases disk space usage, and could eventually require that you purchase more disk storage space.

Monitoring and Removing Messages

Regularly check Guaranteed Fax mailboxes for voice messages and undeliverable fax messages. While the system configuration attempts to prevent voice message storage, and to regulate fax message storage in these mailboxes, messages occasionally may be retained. You must therefore monitor the mailbox for messages and remove them.

To delete messages:

1. Access the mailbox through the subscriber interface and access message headers by pressing **[2]**.
2. Delete each voice message using the **[*][3]** command on your telephone keypad.
3. Press **[4]** at the activity menu to access the outgoing mailbox of the guaranteed fax machine. Press **[*][#]** to step through the message categories listening for the category of undeliverable messages. (These are messages that may remain undelivered (for example) because of some temporary problem with the fax machine).
4. If you know the fax machine is currently working, step through the message headers pressing either **[#][#]** to resend the messages or **[*][3]** to delete the messages, as appropriate.
5. Continue dealing with the messages until there are no more undeliverable messages.
6. Exit the subscriber interface.

Check Message Delivery Increments

A message directed to a fax endpoint could fail for numerous reasons: the fax machine is in use, turned off, out of paper, or broken. Fax call delivery could also fail because the receiving machine or subscribers on the receiving machine are not fax enabled.

You can control how often delivery is retried. To do this:

1. If you are not already in the Intuity AUDIX Administration menu, access it from the Intuity Administration menu.
2. At the command line, enter **ch sy f** to bring up the Change System-Parameters Features screen.

3. Enter `NEXTPAGE` (F7) twice to access page 3 of the form. The values in the Rescheduling Increments for Unsuccessful Delivery control the intervals for which call delivery messages - including outbound fax messages - are rescheduled. Only the first five increments apply to fax deliveries. (After five unsuccessful tries, a fax is considered undeliverable.)
4. If you want to change the rescheduling increments to better suit the circumstances under which your machine is used, do so then press `ENTER` (F3). Otherwise, press `CANCEL` (F1) to exit the screen.

Monitoring Mailbox Space

There are several maintenance tasks which are done on an irregular basis. One of them is monitoring the subscriber Activity Log if a subscriber is experiencing problems with sending, receiving, or retrieving and printing faxes.

During the first few weeks of the fax feature's operation, subscribers may tell you that the Intuity system often complains that their mailboxes are too full. If such complaints are frequent for a particular subscriber, they may indicate that you should expand the capacity of the subscriber's mailbox.

NOTE:

If a subscriber receives a partial fax after the Intuity system complains of an overly full mailbox, the subscriber's mail box is full (there is not enough room in the mailbox to accept the entire fax). If the mailbox is not full when the subscriber receives a partial fax, the subscriber's maximum call answer message size may be too small to contain the message.

To track a subscriber's usage of mailbox space, do the following:

1. If you are not already in the Intuity AUDIX Administration menu, access it from the Intuity Administration menu.
2. At the command line, enter **list meas sub day <name or extension> <mm/dd/yy>** to bring up the `Special Features Daily Traffic Report` screen. (If you ask for month rather than day, you get accumulated measurements. You can enter either the subscriber name or extension. Omitting the date gives you information for the current day.)
3. Look at the number of seconds in the `Mailbox Space Used` field. Compare it to the administered value in the adjacent `Space Allowed` field.

4. For heavy fax users (those who receive more than one fax per day), you can increase the mailbox size by entering an increased value in the `Mailbox Size (seconds), Maximum` field on page two of the change subscriber screen.



NOTE:

To increase mailbox size for a class of service, enter an increased value in the `Mailbox Size (seconds) Maximum` field on the `Change Class of Service` screen.

5. Press `ENTER` (F3) to update the value.
6. Press `CANCEL` (F1) to exit the screen.

For more info: Chapter 6, "Traffic Reports" in *Intuity AUDIX R3.3 Administration and Feature Operations* book, (585-310-552)



NOTE:

Remember that increasing subscribers' mailbox space also increases required disk space, and could eventually necessitate purchasing additional disk space.

The size of a fax page depends on the page's image content as well as its resolution, but the following rule is generally useful. One standard resolution fax page is equivalent to a 20- to 30-second voice message. One fine resolution fax page is equivalent to a 40- to 60-second voice message.

Monitoring FAX Messages

4

You can use several reports in both the Intuity AUDIX system and the Intuity Multimedia Messaging System to monitor the performance of Intuity FAX Messaging. These reports are:

- The Print Queue Report
- The System Monitor
- AUDIX traffic reports

The Print Queue Report and the System Monitor are described in the *Intuity Platform Administration and Maintenance for Release 3.0* (585-310-557). This chapter describes:

- Aspects of FAX messaging performance
- AUDIX traffic reports that can help track FAX messaging performance

Aspects of FAX Messaging Performance

FAX messaging performance is affected primarily by two things:

- Availability of voice ports
- Availability of disk space

Availability of Voice Ports

Like AUDIX voice messaging, FAX messaging uses a voice port when any of the following events occurs:

- A caller/subscriber sends a FAX message to a subscriber's mailbox via the Call Answer feature
- A subscriber calls into AUDIX to retrieve or otherwise manipulate a FAX via FAX messaging
- A subscriber sends a FAX to a non-subscriber FAX machine
- A subscriber redirects a FAX from his/her mailbox to a local FAX machine for printing

NOTE:

A certain number of voice ports, starting with the highest channel number, are assigned as outgoing ports. FAXes sent to FAX machines use only these ports.

If all voice ports are busy, additional subscribers/callers are blocked and may wait an unacceptable length of time in order to send/receive messages. Thus, availability of voice ports has a major impact on FAX messaging performance.

FAXes require voice ports as follows:

- One standard fax page holds a voice port for 50 seconds.
- One fine fax page holds a voice port for 90 seconds.

As a result, when any FAX send/retrieval event occurs, each page of the FAX will tie up a voice port for 50 or 90 seconds, depending on the type of FAX page. You must expect and account for increased port usage as subscribers increase the use of FAX messaging to send FAXes.

NOTE:

As with voice messages, sending/forwarding already-stored FAXes to other local subscriber mailboxes via the Voice Mail feature does not use voice ports.

Availability of Disk Space

Availability of disk space also has a major impact on FAX messaging performance. Since disk space is allocated to subscribers in terms of minutes of storage in their mailboxes, monitoring disk space consists primarily of watching that mailboxes do not fill up. FAXes require mailbox space as follows:

- One standard fax page requires the space of a 25-second voice message.
- One fine fax page requires the space of a 45-second voice message

Thus, for example, if your system allows 10 hours (36,000 seconds) of message storage, this represents dedicated FAX storage of 1440 standard pages (36,000 divided by 25)..

For more info: This chapter presents the information from the perspective of the fax feature's impact on system performance. Each of these reports is documented in greater detail in Chapter 6, "Traffic Reports," in the *Intuity AUDIX R3.3 Administration and Feature Operations* book, (585-310-552).



The System Monitor

The System Monitor (Figure 4-1.) lets you check for voice ports that are busy because of FAX messages. Two states related to FAX may appear:

- *PrintFAX A FAX is being sent from an AUDIX mailbox to a FAX machine.
- *RecordFAX A FAX is being sent via Call Answer to an AUDIX mailbox.

System Monitor - Voice Channels					
Channel	Calls Today	Voice Service	Service Status	Caller Input	Dialed Digits
0	1042	AUDIX	Dialing		289
1	978	AUDIX	Coding		688
2	960	AUDIX	Coding		688
3	998	AUDIX	Dialing	52105#XX	728
4	935	AUDIX	RecordFAX	52438#XX20	187
5	973	AUDIX	Talking	52388#XX20*3	728
6	1016	AUDIX	PrintFAX	52439#XX20	187
7	1058		*0n Hook		
8	1005	AUDIX	Talking	52589#XX20*30*3	286
9	940	AUDIX	Talking	52370#XX20	192
10	969	AUDIX	Talking	52484#XX20*30	187
11	970	AUDIX	Dialing		289

Figure 4-1. System Monitor Showing FAX Activity

For more information on the System Monitor, see *Intuity Platform Administration and Maintenance for Release 3.0* (585-310-557).

AUDIX Traffic Reports

The AUDIX traffic reports display various types of traffic data for the AUDIX system. Data includes:

- The number of messages received and sent by subscriber, by system, by port, by message type
- The disk space used and available by system and subscriber
- Average message length sent and stored by feature and system

These reports include FAX message data, as well as voice message data. However, most reports do not differentiate between messages that are voice-only, voice and FAX, or FAX-only. In addition, AUDIX counts a voice message sent with a FAX as a single message in its reports. Thus, in the following sample Feature Daily Traffic report (Figure 4-2.), all data fields (Total Messages, Broadcast Messages, Priority Messages, and so on) include in their counts FAX messages, voice messages, and FAX/voice messages.

```

AUDIX           Active           Alarms: Mm           Logins: 1
list measurements feature day 10/21/93           Page 2
FEATURE DAILY TRAFFIC

Date : 10/21/93           Ending Time : 23:59

                VOICE MAIL
Total Messages,      Sent: 24           Current: traffic unavailable
Broadcast Messages, Sent: 4           Current: 3
Log-in Announcements, Sent: 1           Current: 0
Priority Messages,   Sent: 2           Current: traffic unavailable
Private Messages,   Sent: 4           Current: traffic unavailable

Avg. Storage Time: 2480   Avg. Connect Time: 52

                CALL ANSWER
Total Messages,      Sent: 2           Current: traffic unavailable
Avg. Storage Time: 11    Avg. Connect Time: 30

Press [NextPage], [PrevPage] or [Cancel]
enter command: list measurements feature day 10/21/93
1Cancel 2Refresh 3Enter 4ClearFld 5Help 6Choices 7NextPage 8PrevPage

```

Figure 4-2. Sample Feature Daily Traffic Report

AUDIX traffic reports available are as follows:

Community Daily	Community Hourly
Feature Daily	Feature Hourly
Load Daily	Load Hourly
Special Features Daily	Special Features Hourly
Subscriber Daily	Subscriber Monthly
Network Data Daily	Network Data Hourly
Remote Messages Daily	Remote Messages Monthly

See *Intuity AUDIX R3.2 Administration and Feature Operations* (585-310-552) or *AMIS Analog Networking* (585-300-512) for information on these reports.

Using the Remote Messages (Monthly and Daily) Report to Track FAX Printing

The call delivery machine(s) you define for printing FAXes are dummy remote systems for which you can run the Remote Messages Monthly (and Daily) traffic reports. To the Intuity AUDIX system, these systems are just AMIS networked machines. But in these cases, the reports show data on FAXes that have been printed on FAX machines, *not* real network traffic between AUDIX systems.

⇒ NOTE:

Since the call delivery machine is a dummy system that really exists so subscribers can print FAXes, the REMOTE ORIGINATION data does not apply and is all 0s (zeros). That is, FAX machines contained within the call delivery range of numbers do not and cannot originate messages to the Intuity AUDIX system.

Accessing the Reports

To access the monthly version of the report, use one of the following commands:

Full Version	Short Version
list measurements remote-messages month <i>machine-name</i>	li me r m <i>machine-name</i>
list measurements remote-messages month <i>machine-name mm/dd/yy</i>	li me r m <i>machine-name mm/dd/yy</i>

where ***machine-name*** identifies the name of the remote machine whose activity is to be displayed. The option ***mm/yy*** specifies the day of the first traffic report to be displayed. (The month can be entered as a single digit.) If no date is entered, the current date is used.

To access the daily version of the report, use one of the following commands:

Full Version

Short Version

**list measurements remote-messages day
machine-name**

li me r d machine-name

**list measurements remote-messages day
machine-name mm/dd/yy**

**li me r d machine-name
mm/dd/yy**

```

drintuit           Active           Alarms: m A           Logins: 2
list measurements remote-messages month ac local           Page 1
REMOTE MESSAGES MONTHLY TRAFFIC

Machine Name : ac_local           Machine Type: calld
Date : 01/95           Ending Date : 01/16/95

          LOCAL ORIGINATION           REMOTE ORIGINATION
          Prime   Non-Prime           Prime   Non-Prime
Transfer Sessions: 200   11           0       0
Usage (seconds) : 28189 1208           0       0
Average Usage   : 140   109           0       0
Messages Sent   : 132   4           0       0
Messages Rejected: 68   7           0       0
Status Sent     : 0     0           0       0
Status Received :           0       0

Headers Sent :

Message Transmission Threshold Exceptions: 0
Session Failures Far End "No Answer": 0

Press [NextPage], [PrevPage] or [Cancel]
enter command: list measurements remote-messages month ac local
1Cancel 2Refresh 3Enter 4ClearFld 5Help 6Choices 7NextPage 8PrevPage
    
```

Field Descriptions

A description of each display field is provided below.

- Machine Name — Name of FAX call delivery machine as entered on the command line.
- Machine Type — Type of the remote machine, **calld** in this case.
- Date — Date for the traffic report. This is the date entered on the command line, or the current date if no date was entered.
- Ending Date — Date that record collecting ended. If the month of the first traffic report is the current month, the Ending Date is the current day.

OR

Ending Time — Time that record collecting ended. If the day of the first traffic report is the current date, this is the current time.

LOCAL ORIGINATION

- Transfer Sessions, Prime — No. of prime-time transfer sessions (FAX delivery attempts) of local origination.
- Transfer Sessions, Non-Prime — No. of non-prime-time transfer sessions (FAX delivery attempts) of local origination.
- Usage, Prime — No. of seconds for all prime-time message-transfer sessions of local origin.
- Usage, Non-Prime — No. of seconds for all non-prime-time message-transfer sessions of local origin.
- Average Usage, Prime — Avg. number of seconds for all prime-time message-transfer sessions of local origin.
- Average Usage, Non-Prime — Avg. number of seconds for all non-prime-time message-transfer sessions of local origin.
- Messages Sent, Prime — Total no. of prime-time FAXes printed.
- Messages Sent, Non-Prime — Total no. of non-prime-time printed.
- Messages Rejected, Prime — Total no. of prime-time FAXes rejected by the FAX machine.
- Messages Rejected, Non-Prime — Total no. of non-prime-time FAXes rejected by the FAX machine.
- Status Sent, Prime — Not applicable for FAX machines.
- Status Sent, Non-Prime — Not applicable for FAX machines.

REMOTE ORIGINATION

- Fields under Remote Origination are not applicable for FAX printing.
- Message Transmission Threshold Exceptions — Total no. of times the local node exceeded its message-transmission threshold with the specified call delivery machine.
- Session Failures Far End “No Answer” — Total no. of unsuccessful call attempts from the local Intuity AUDIX machine to the call delivery machine.

Telecommunications fraud is the unauthorized use of another company's telecommunications service. This type of fraud has been in existence since the 1950s when AT&T first introduced Direct Distance Dialing (DDD).

Twenty years later, Remote Access became a target of individuals seeking unauthorized network access. Now, with the added capabilities of voice mail and automated attendant services, customer premises equipment-based toll fraud has expanded as a new type of communications abuse. With its subculture of "hackers" and "phreakers," telecommunications fraud has rapidly become a highly profitable criminal activity.

Much of the information in this section has been condensed from the *GBCS Products Security Handbook* (555-025-600). Please refer to the handbook for complete information on securing your voice mail system from possible toll fraud.

Protecting Your Voice/Fax Messaging System

Voice Messaging toll fraud has risen dramatically in recent years. Now more than ever, it is imperative that you take steps to secure your system. This means protecting your standard voice messaging and automated attendant applications.

⇒ NOTE:

No security issues exist that are unique to fax messaging. Voice messaging security issues generally apply also to fax messaging.

Voice Messaging

There are two types of voice mail fraud. The first type occurs when a hacker takes over a mailbox and uses it to communicate with other hackers. This can be expensive if access is gained to the voice mail system via an 800 number. Typically a hacker hacks the mailbox password and changes both it and the greeting.

Once thieves transfer to dial tone, they may dial a Trunk Access Code (TAC), Feature Access Code (FAC), or extension number, which is the second type of abuse. If the system is not properly secured, thieves can make fraudulent long distance calls or request a company employee to transfer them to a long distance number.

Automated Attendant

Auto attendants are used by many companies to augment or replace a switchboard operator. When an auto attendant answers, the caller is generally given several options. A typical greeting is: "Hello, you've reached XYZ Bank. Please enter **1** for Auto Loans, **2** for Home Mortgages. If you know the number of the person you are calling, please enter that now."

In some switches, button 9 is used to access dial tone. In addition, when asked to enter an extension, the hacker enters 9180 or 9011. If the system is not properly configured, the auto attendant passes the call back to the PBX. The PBX reacts to 9 as a request for a dial tone. The 180 becomes the first numbers of a 1-809 call to the Dominican Republic. The 011 is treated as the first digits of an international call. The hacker then enters the remaining digits of the phone number and the call is completed. You, the PBX owner, pay for it. This hacker scenario works the same way with a voice mail system.

MERLIN LEGEND Switch Administration

The measures you can take to minimize the security risk of owning a telecommunications system depend on how the telecommunications system is used and how any associated voice messaging or automated attendant system is used.

To minimize the risk of unauthorized persons using the voice messaging or automated attendant systems to make toll calls, administer the voice ports on your switch in any of the following ways:

Restrict Outward Dialing

A voice port with outward restriction cannot make *any* outside calls unless an allowed number list is used for specific area codes and/or exchanges that can be called. Outward restriction prevents or limits outcalling and AMIS networking.

Restrict Toll Areas

A voice port with toll restriction cannot make toll calls, but it can still make local calls. Toll restriction may prevent or limit outcalling and AMIS networking. An allowed number list can be used for specific area codes and/or exchanges that can be called.

Create Disallowed Number Lists

When a voice port is unrestricted, or has no toll restriction, a disallowed number list can be used to prevent calls to specific numbers, specific exchanges within all area codes, or specific numbers. There can be a maximum of eight disallowed lists in the MERLIN LEGEND system with a maximum of ten numbers on each list. Each voice port can be assigned any or all of the disallowed number lists.

Create Allowed Number Lists

When a voice port is outward or toll restricted, an allowed number list can be used to allow calls to specific area codes and/or exchanges. When outcalling or AMIS networking is required, using outward or toll restriction in combination with an allowed number list limits the risk of unauthorized persons using the voice messaging or automated attendant systems to make toll calls because calls can only be made to the specified area codes and/or exchanges. There can be a maximum of eight allowed lists in the MERLIN LEGEND system with a maximum of ten numbers on each list. Each voice port can be assigned any or all of the allowed number lists.

Restrict AMIS Networking Number Ranges

To increase security for AMIS analog networking, including the Message Delivery service, restrict the number ranges that may be used to address messages. If possible, also place outward or toll restriction on the voice ports and use an allowed number list.

Switch Administration

To minimize the risk of unauthorized people using the AUDIX system to make toll calls, administer your switch in any of the following ways.

Restrict Outward Dialing

The measures you can take to minimize the security risk of outcalling depend on how it is used. When outcalling is used only to alert on-premises subscribers who do not have AUDIX message indicator lamps on their phones, you can assign an outward-restricted Class of Restrictions (COR) to the AUDIX voice ports.

For G1, G3, and System 75:

- Use **change cor** to display the Class of Restriction screen, and then create an outward restricted COR by entering **outward** in the Calling Party Restriction field.
- Assign the outward restricted COR to the voice ports.

For G2 and System 85:

- Use **P010 W3 F19** to assign outward restriction to the voice mail ports' Class of Service (COS).

Assign Low Facilities Restriction Level (FRL)

The switch treats all the PBX ports used by voice mail systems as stations. Therefore, each voice mail port can be assigned a COR/COS with an FRL associated with the COR/COS. FRLs provide eight different levels of restrictions for Automatic Alternate Routing (AAR), Automatic Route Selection (ARS), or World Class Routing (WCR) calls. They are used in combination with calling permissions and routing patterns and/or preferences to determine where calls can be made. FRLs range from 0 to 7, with each number representing a different level of restriction (or no restrictions at all).

The FRL is used for the AAR/ARS/WCR feature to determine call access to an outgoing trunk group. Outgoing call routing is determined by a comparison of the FRLs in the AAR/ARS/WCR routing pattern to the FRL associated with the COR/COS of the call originator.

The higher the FRL number, the greater the calling privileges. For example, when voice mail ports are assigned to a COR with an FRL of 0, outside calls are disallowed. If that is too restrictive, the voice mail ports can be assigned to a COR with an FRL that is higher, yet low enough to limit calls to the calling area needed.

⇒ NOTE:

Voice Messaging ports that are outward restricted via COR cannot use AAR/ARS/WCR trunks. Therefore, the FRL level doesn't matter since FRLs are not checked.

FRLs can be assigned to offer a range of calling areas. Choose the one that provides the most restricted calling area that is required.

Table 5-1 provides suggested FRL values.

Table 5-1. Suggested Values for FRLs

FRL	SUGGESTED VALUE
0	No outgoing (off-switch) calls permitted.
1	Allow local calls only; deny 0+ and 1-800 calls.
2	Allow local calls, 0+, and 1-800 calls.
3	Allow local calls plus calls on FX and WATS trunks.
4	Allow calls within the home NPA.
5	Allow calls to certain destinations within the continental USA.
6	Allow calls throughout the continental USA.
7	Allow international calling. Assign attendant console FRL 7. Be aware, however, if Extension Number Portability is used, the originating endpoint is assigned FRL 7.

⇒ NOTE:

In Table 5-1, FRLs 1 through 7 include the capabilities of the lower FRLs. For example, FRL 3 allows private network trunk calls and local calls in addition to FX and WATS trunk calls.

To set FRLs on G1, G3 and System 75:

- Use **change cor** for the voice mail ports (vs. subscribers) to display the Class of Restriction screen.
- Enter the FRL number (**0** through **7**) in the FRL field. Assign the lowest FRL that will meet the outcalling requirements. The route patterns for restricted calling areas should have a higher FRL assigned to the trunk groups.
- Use **change route-pattern** to display the Route Pattern screen.
- Use a separate partition group for ARS on the outcalling ports and limit the numbers that can be called.

⇒ NOTE:

For G3, the Restricted Call List on the Toll Analysis Table can also be used to restrict calls to specified areas.

To set FRLs on G2 and System 85:

- Use **P010 W3 F23** to assign FRLs for use with AAR/ARS/WCR trunks. Assign higher FRLs to restricted patterns in **P309** than the FRL in the COS for the voice mail ports.

- For G2.2, do not use **P314** to mark disallowed destinations with a higher FRL value. **P314 W1** assigns a Virtual Nodepoint Identifier (VNI) to the restricted dial string. **P317 W2** maps the VNI to the pattern, and **P317 W2** shows the pattern preference, with the FRL in field 4.

For earlier releases, use **P313** to enter disallowed destinations in the Unauthorized Call Control table.

Restrict Toll Areas

A reverse strategy to preventing calls is to allow outbound calls only to certain numbers. For G1 and System 75, you must specify both the area code and the office code of the allowable numbers. For G3, you can specify the area code or telephone number of calls you allow.

For G1 and System 75:

- Use **change ars fnpa xxx** to display the ARS Foreign Numbering Plan Area (FNPA) Table, where **xxx** is the NPA that will have some unrestricted exchanges.
- Route the NPA to a Remote Home Numbering Plan Area (RHNP) table (for example, **r1**).
- Use **change rhnpa r1:xxx** to route unrestricted exchanges to a pattern choice with an FRL equal to or lower than the originating FRL of the voice mail ports.
- If the unrestricted exchanges are in the Home NPA, and the Home NPA routes to **h** on the FNPA Table, use **change hnnpa xxx** to route unrestricted exchanges to a pattern with a low FRL.

NOTE:

If assigning a low FRL to a pattern preference conflicts with requirements for other callers, use ARS partitioning to establish separate FNPA/HNPA/RHNP tables for the voice mail ports.

For G2 and System 85:

- Use **P311 W2** to establish 6-digit translation tables for foreign NPAs, and assign up to 10 different routing designators to each foreign NPA (area code).
- Use **P311 W3** to map restricted and unrestricted exchanges to different routing designators.
- If the unrestricted toll exchanges are in the Home NPA, use **P311 W1** to map them to a routing designator.
- If the Tenant Services feature is used, use **P314 W1** to map routing designators to patterns. If Tenant Services is not used, the pattern number will be the same as the routing designator number.

- Use **P309 W3** to define the restricted and unrestricted patterns.


For G2.2:

- Use **P314 W1** to assign a VNI to the unrestricted dial string.

Map the VNI to a routing pattern in **P317 W2**, and assign a low FRL to the pattern in **P318 W1**. If you permit only certain numbers, consider using Network 3, which contains only those numbers.

For G3:

- Use **change ars analysis** to display the ARS Analysis screen.
- Enter the area codes or telephone numbers that you want to allow and assign an available routing pattern to each of them.
- Use **change routing pattern** to give the pattern preference an FRL that is equal to or lower than the FRL of the voice mail ports.

 **NOTE:**

For G3, the Unrestricted Call List (UCL) on the Toll Analysis Table can be used to allow calls to specified numbers through ARS/WCR. The COR for the voice mail ports should show “all-toll” restriction and access to at least one UCL.

Block Subscriber Use of Trunk Access Codes (G2, System 85 Only)

Station-to-Trunk Restrictions can be assigned to disallow stations from dialing specific outside trunks. By implementing these restrictions, callers cannot transfer out of voice mail to an outside facility using Trunk Access Codes.

For G2 and System 85, if TACs are necessary for certain users to allow direct dial access to specific facilities, such as tie trunks, use the Miscellaneous Trunk Restriction feature to deny access to others. For those stations and all trunk-originated calls, always use ARS/AAR/WCR for outside calling.

 **NOTE:**

Allowing TAC access to tie trunks on your switch may give the caller access to the Trunk Verification feature on the next switch.

Create Restricted Number Lists (G1, G3, and System 75 Only)

The Toll Analysis screen allows you to specify the toll calls you want to assign to a restricted call list (for example, 900 numbers) or to an unrestricted call list (for example, an outcalling number to a call pager). Call lists can be specified for CO/FX/WATS, TAC, and ARS calls, but not for tie TAC or AAR calls.

Create Allowed and Disallowed Number Lists (MERLIN LEGEND Only)

When a voice port is unrestricted or toll restricted, you can prevent (disallow) calls to specific numbers or exchanges within area codes. If a voice port is outward or toll restricted, you can list the specific area codes or exchanges users are allowed to call. Refer to Appendix A in *Intuity Integration with MERLIN LEGEND* (585-310-231) for complete MERLIN LEGEND security information.

Restrict AMIS Networking Number Ranges

To increase security for AMIS analog networking, including the Message Delivery service, restrict the number ranges that may be used to address messages. Be sure to assign all the appropriate PBX outgoing call restrictions on the AUDIX voice ports.

Subscriber Password Guidelines

To minimize the risk of unauthorized people accessing AUDIX subscriber mailboxes and using them for toll fraud, educate subscribers in the following guidelines for AUDIX passwords.

- When password protection into voice mailboxes is offered, require the maximum number of digits allowed, or a minimum of five digits. The password length should be at least one digit longer than the extension length.
- Make sure subscribers change the default password the first time they log in to the AUDIX system. To insure this, make the default password fewer digits than the minimum password length.
- Administer Password Aging on the System Parameters Features screen. Password Aging requires subscribers to change their password at an interval defined by the system administrator. Password Aging enhances overall system security and helps protect against toll fraud by making the Intuity AUDIX system less vulnerable to break-ins.
- Create your own password as soon as your AUDIX extension is assigned. This ensures that only *you* will have access to your mailbox, not anyone who enters your extension number, then enters [#]. (The use of only a [#], indicating the lack of a password, is well-known by telephone hackers.)
- Never have your greeting state that you will accept third party billed calls (this allows unauthorized individuals to charge calls to your company). If someone at your company has a greeting like this, point out the vulnerability to the person and recommend they change the greeting immediately.

- Never use obvious or trivial passwords, such as your phone extension, room number, employee identification number, social security number, or easily guessed numeric combinations (for example, 999999).
- Change administered default passwords immediately; never skip the password entry. Hackers find out defaults. To change your password, press [5] at the main AUDIX menu. Then press [4].
- Discourage the practice of writing down passwords, storing them, or sharing them with others. If a password needs to be written down, keep it in a secure place and never discard it while it is active.
- Never program passwords onto auto dial buttons.
- If you receive any strange AUDIX messages, or your greeting has been changed, or if for any reason you suspect that your AUDIX facilities are being used by someone else, contact AT&T Network Corporate Security.

Intuity AUDIX Administration

To minimize the risk of unauthorized people using the Intuity AUDIX system to make toll calls, you can administer the AUDIX system in any of the following ways.

Mailbox Administration

- To block break-in attempts, allow a low number of consecutive unsuccessful attempts to log into a voice mailbox. Administer this on the System-Parameters Features screen.
- Deactivate unassigned voice mailboxes. When an employee leaves the company, remove the subscriber profile and, if necessary, reassign the voice mailbox.
- Do not create voice mailboxes before they are needed.
- The Intuity AUDIX system offers password and password time-out mechanisms that can help restrict unauthorized users. Subscribers can have passwords up to 15 digits for maximum security, and you can specify the minimum length required. Use a minimum of 5 digits, and a length at least one digit greater than the extension number length.

Outcalling

When outcalling is used for subscribers who are off-site (often the message notification is forwarded to a call pager number), three options exist to minimize toll fraud: 1) the AUDIX voice ports can be assigned to a toll-restricted COR that allows calling only within a local area; 2) the outcalling numbers can be entered into an unrestricted calling list for either ARS or Toll Analysis, or 3) outcalling numbers can be limited to 7 or 10 digits.

- On the Subscriber form, turn off outcalling by using the proper COS for each user.
- On the System Parameters Outcalling form, limit the number of digits that can be dialed for outcalling.

 **NOTE:**

If outcalling to a pager is allowed, additional digits may be required.


Basic Call Transfer (5ESS, DMS-100, MERLIN LEGEND, and Non-AT&T Switches)

With Basic Call Transfer, after an AUDIX caller enters + , the AUDIX system does the following:

7. The AUDIX system verifies that the digits entered contain the same number of digits as administered on the AUDIX system for extension lengths.

If call transfers are restricted to subscribers, the AUDIX system also verifies that the digits entered match the extension number for an administered subscriber.

8. If step 1 is successful, the AUDIX system performs a switch-hook flash, putting the caller on hold.

 **NOTE:**

If step 1 is unsuccessful, the AUDIX system plays an error message and prompts the caller for another try.

9. The AUDIX system sends the digits to the switch.
10. The AUDIX system completes the transfer.

With Basic Call Transfer, a caller can dial any number, provided the number of digits matches the length of a valid extension. So, if an unauthorized caller dials an access code followed by the first digits of a long-distance telephone number, such as , the AUDIX system passes the numbers on to the switch. (This example shows a 5-digit plan.) The switch interprets the first digit () as an access code, and the following digits as the prefix digit and area code. The caller then enters the remaining digits of the phone number to complete the call.

If call transfers are restricted to subscribers, a caller cannot initiate a transfer to an off-premises destination unless the digits entered match an administered subscriber's mailbox identifier (for example, 91809). To ensure the integrity of the "subscriber" restriction, do not administer mailboxes that start with the same digit(s) as a valid switch trunk access code.

Enhanced Call Transfer (System 75, System 85, G1, G2, G3)

With Enhanced Call Transfer, the AUDIX system uses a digital control link message to initiate the transfer and the switch verifies that the requested destination is a valid station in the dial plan. With Enhanced Call Transfer, when AUDIX callers enter ***T** followed by digits (or ***A** for name addressing) and **#**, the following steps are performed:

1. The AUDIX system verifies that the digits entered contain the same number of digits as administered on the AUDIX system for extension lengths.

If call transfers are restricted to subscribers, the AUDIX system also verifies that the digits entered match the extension number for an administered subscriber.

⇒ NOTE:

When callers request a name addressing transfer, the name must match the name of an AUDIX subscriber (either local or remote) whose extension number is in the dial plan.

2. If step 1 is successful, the AUDIX system sends a transfer control link message containing the digits to the switch. If step 1 is unsuccessful, the AUDIX system plays an error message to the caller and prompts for another try.
3. The switch verifies that the digits entered match a valid extension in the dial plan.
 - If step 3 is successful, the switch completes the transfer, disconnects the AUDIX voice port, and sends a “successful transfer” control link message to the AUDIX system.
 - If step 3 is unsuccessful, the switch leaves the AUDIX voice port connected to the call, sends a “fail” control link message to the AUDIX system, and then the AUDIX system plays an error message requesting another try.

Intuity FAX Messaging

No fax-specific security issues exist. However, since Intuity FAX Messaging requires that AMIS Analog Networking be turned on, be sure that outgoing AUDIX voice ports have the appropriate PBX calling restrictions

Detecting Voice Mail Fraud

Table 5-2 shows the reports that help determine if your voice mail system is being used for fraudulent purposes.

Table 5-2. Reports and Monitoring Techniques for the AUDIX system

MONITORING TECHNIQUE	SWITCH
Call Detail Recording (or SMDR)	All*
Traffic Measurements and Performance	All
Automatic Circuit Assurance	All
Busy Verification	All
Call Traffic Report	All
Trunk Group Report	G1, G3, System 75
AUDIX Traffic Reports	All*

* MERLIN LEGEND supports only these monitoring techniques

Call Detail Recording (or SMDR)

With Call Detail Recording (CDR) activated for the incoming trunk groups, you can find out details about the calls made into your voice mail ports. This feature is known as Station Message Detail Recording (SMDR) on some switches including MERLIN LEGEND.

NOTE:

AT&T's optional Call Accounting System (CAS) may be installed on the Intuity system, allowing you to create customized reports with your G1, G3, or MERLIN LEGEND CDR/SMDR data. The optional AT&T HackerTracker program works in conjunction with CAS Plus Version 3 to alert you to abnormal calling activities. Call 800 521-7872 for more information.

Most other call accounting packages discard valuable security information. If you are using a call accounting package, check to see if this information can be stored by making adjustments in the software. If it cannot be stored, be sure to check the raw data supplied by the CDR.

Review CDR for the following symptoms of voice messaging abuse:

- Short holding times on any trunk group where voice messaging is the originating endpoint or terminating endpoint
- Calls to international locations not normally used by your business
- Calls to suspicious destinations
- Numerous calls to the same number
- Undefined account codes

⇒ NOTE:

For G2 and System 85, since CDR only records the last extension on the call, internal toll abusers transfer unauthorized calls to another extension before they disconnect so the CDR does not track the originating station. If the transfer is to your voice messaging system, it could give a false indication that your voice messaging system is the source of the toll fraud.

For G1, G3, and System 75:

- Use **change system-parameters features** to display the Features-Related System Parameters screen.
- Administer the appropriate format to collect the most information. The format depends on the capabilities of your CDR analyzing and recording device.
- Use **change trunk-group** to display the Trunk Group screen.
- Enter **y** in the SMDR/CDR Reports field.

For G2:

- Use **P275 W1 F14** to turn on the CDR for incoming calls.
- Use **P101 W1 F8** to specify the trunk groups.

Call Traffic Report

This report provides hourly port usage data and counts the number of calls originated by each port. By tracking normal traffic patterns, you can respond quickly if an unusually high volume of calls begins to appear, especially after business hours or during weekends, which might indicate hacker activity.

For G1, G3, and System 75, traffic data reports are maintained for the last hour and the peak hour. For G2 and System 85, traffic data is available via Monitor I which can store the data and analyze it over specified periods.

Trunk Group Report

This report tracks call traffic on trunk groups at hourly intervals. Since trunk traffic is fairly predictable, you can easily establish over time what is normal usage for each trunk group. Use this report to watch for abnormal traffic patterns, such as unusually high off-hour loading.

SAT, Manager I, and G3-MT Reporting

Traffic reporting capabilities are built-in and are obtained through the System Administrator Tool (SAT), Manager I, and G3-MT terminals. These programs track and record the usage of hardware and software features. The measurements include peg counts (number of times ports are accessed) and call duration. Traffic

measurements are maintained constantly and are available on demand. However, reports are not archived and should therefore be printed to monitor a history of traffic patterns.

For G1, G3, and System 75:

- To record traffic measurements:
 - Use **change trunk-group** to display the Trunk Group screen.
 - In the Measured field, enter **both** if you have a Basic Call Management System (BCMS) and a Call Management System (CMS), **internal** if you have only BCMS, or **external** if you have only CMS.
- To review the traffic measurements, use **list measurements** followed by a measurement type (**trunk-groups**, **call-rate**, **call-summary**, or **outage-trunk**) and timeframe (**yesterday-peak**, **today-peak**, or **arrestor**).
- To review performance, use **list performance** followed by a performance type (**summary** or **trunk-group**) and timeframe (**yesterday** or **today**).

ARS Measurement Selection

The ARS Measurement Selection can monitor up to 20 routing patterns (25 for G3) for traffic flow and usage.

For G1, G3, and System 75:

- Use **change ars meas-selection** to choose the routing patterns you want to track.
- Use **list measurements route-pattern** followed by the timeframe (**yesterday**, **today**, or **last-hour**) to review the measurements.

For G2, use Monitor I to perform the same function.

Automatic Circuit Assurance

This monitoring technique detects a number of short holding time calls or a single long holding time call which may indicate hacker activity. Long holding times on Trunk-to-Trunk calls can be a warning sign. The ACA feature allows you to set time limit thresholds defining what is considered a short holding time and a long holding time. When a violation occurs, a designated station is visually notified.

When an alarm occurs, determine if the call is still active. If toll fraud is suspected (for example, a long holding time alarm occurs on a Trunk-to-Trunk call), you may want to use the busy verification feature (see "Busy Verification" that follows) to monitor the call in progress.

For G1, G3, and System 75:

- Use **change system-parameters features** to display the Features-Related System Parameters screen.
- Enter **y** in the Automatic Circuit Assurance (ACA) Enabled field.
- Enter **local**, **primary**, or **remote** in the ACA Referral Calls field. If **primary** is selected, calls can be received from other switches. **Remote** applies if the PBX being administered is a DCS node, perhaps unattended, where ACA referral calls go to an extension or console at another DCS node.
- Use **change trunk group** to display the Trunk Group screen.
- Enter **y** in the ACA Assignment field.
- Establish short and long holding times. The defaults are 10 seconds (short holding time) and one hour (long holding time).
- To review, use **list measurements aca**.

For G2 and System 85:

- Use **P285 W1 F5** and **P286 W1 F1** to enable ACA systemwide.
- Use **P120 W1** to set ACA call limits and number of calls thresholds.
- Choose the appropriate option:
 - To send the alarms and/or reports to a designated maintenance facility, use **P497 W3**.
 - To send the alarms and/or reports to an attendant, use **P286 W1 F3**.

Busy Verification

When toll fraud is suspected, you can interrupt the call on a specified trunk group and monitor the call in progress. Callers will hear a long tone to indicate the call is being monitored.

For G1, G3, and System 75:

- Use **change station** to display the Station screen for the station that will be assigned the Busy Verification button.
- In the Feature Button Assignment field, enter **verify**.
- To activate the feature, press the **Verify** button and then enter the trunk access code and member number to be monitored.

For G2 and System 85:

- Administer a Busy Verification button on the attendant console.
- To activate the feature, press the button and enter the trunk access code and the member number.

AUDIX Traffic Reports

The Intuity AUDIX system tracks traffic data over various timespans. Reviewing these reports on a regular basis helps to establish traffic trends. If increased activity or unusual usage patterns occur, such as heavy call volume on ports assigned to outcalling, they can be investigated immediately. In addition, the AUDIX Administration and Data Acquisition Package (ADAP) uses a PC to provide extended storage and analysis capabilities for the traffic data. You can also use the AUDIX Administration Log and Activity Log to monitor usage and investigate possible break-in attempts.

AT&T's Statement of Direction

The telecommunications industry is faced with a significant and growing problem of theft of customer services. To aid in combating these crimes, AT&T intends to strengthen relationships with its customers and its support of law enforcement officials in apprehending and successfully prosecuting those responsible.

No telecommunications system can be entirely free from risk of unauthorized use. However, diligent attention to system management and to security can reduce that risk considerably. Often, a trade-off is required between reduced risk and ease of use and flexibility. Customers who use and administer their systems make this trade-off decision. They know best how to tailor the system to meet their unique needs and are therefore in the best position to protect the system from unauthorized use. Because the customer has ultimate control over the configuration and use of AT&T services and products it purchases, the customer properly bears responsibility for fraudulent uses of those services and products.

To help customers use and manage their systems in light of the trade-off decisions they make and to ensure the greatest security possible, AT&T commits to the following:

- AT&T products and services will offer the widest range of options available in the industry to help customers secure their communications systems in ways consistent with their telecommunications needs.
- AT&T is committed to develop and offer services that, for a fee, reduce or eliminate customer liability for PBX toll fraud, provided the customer implements prescribed security requirements in its telecommunications systems.
- AT&T's product and service literature, marketing information and contractual documents will address, wherever practical, the security features of our offerings and their limitations, and the responsibility our customers have for preventing fraudulent use of their AT&T products and services.

- AT&T sales and service people will be the best informed in the industry on how to help customers manage their systems securely. In their continuing contacts with customers, they will provide the latest information on how to do that most effectively.
- AT&T will train its sales, installation and maintenance, and technical support people to focus customers on known toll fraud risks; to describe mechanisms that reduce those risks; to discuss the trade-offs between enhanced security and diminished ease of use and flexibility; and to ensure that customers understand their role in the decision-making process and their corresponding financial responsibility for fraudulent use of their telecommunications system.
- AT&T will provide education programs for customers and our own people to keep them apprised of emerging technologies, trends, and options in the area of telecommunications fraud.
- As new fraudulent schemes develop, we will promptly initiate ways to impede those schemes, share our learning with our customers, and work with law enforcement officials to identify and prosecute fraudulent users whenever possible.

We are committed to meeting and exceeding our customers' expectations, and to providing services and products that are easy to use and are of high value. This fundamental principle drives our renewed assault on the fraudulent use by third parties of our customers' communications services and products.

AT&T Security Offerings

AT&T has developed a variety of offerings to assist in maximizing the security of your system. These offerings include:

- Security Audit Service of your installed systems
- Fraud Intervention Service
- Individualized Learning Program, a self-paced text that uses diagrams of system administration screens to help customers design security into their systems. The program also includes a videotape and the *GBCS Products Security Handbook*.
- Call Accounting package that calls you when preset types and thresholds of calls are established.
- Remote Port Security Device that makes it difficult for computer hackers to access the remote maintenance ports
- Software that can identify the exact digits passed through the voice mail system.

For more information about these services, see the *GBCS Products Security Handbook* (555-025-600).

AT&T Toll Fraud Crisis Intervention

If you suspect you are being victimized by toll fraud or theft of service and need technical support or assistance, call one of the following numbers immediately.

DEFINITY/System 75/System 85 — AT&T GBCS Technical Service Center (TSC)	800 242-2121
MERLIN LEGEND — AT&T GBCS National Service Assistance Center (NSAC)	800 628-2888
AT&T Corporate Network Security	800 821-8235
AUDIX Help Line	800 562-8349

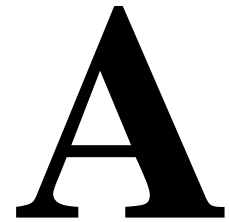
⇒ NOTE:

These services are available 24 hours a day, 365 days a year. Consultation charges may apply.

AT&T Corporate Security

Whether or not immediate support is required, please report all toll fraud incidents perpetrated on AT&T services to AT&T Corporate Security. In addition to recording the incident, AT&T Corporate Security is available for consultation on product issues, investigation support, law enforcement, and education programs.

Verification Tests



This appendix is intended for the use of the Intuity system administrator.

It offers functional tests of various fax capabilities. Use these tests to verify operation of the features of the Intuity system whether administered by the system administrator or by a subscriber.

The appendix does not offer tests of the Intuity system itself. The Intuity system is self-testing. Alarms and alarm log entries arising out of the constant internal tests are completely covered in the maintenance document: *Intuity Platform Administration and Maintenance for Release 3.0 (585-310-557)*.

Administrative Tests

Tests in this section involve administration of the Intuity system.

Verifying that the Fax Feature Is Enabled

Use the procedure given under "Verifying That Fax and AMIS are Enabled" on page 2-2 of this document to verify that fax messaging has been enabled on your Intuity system.

Verifying Fax Capability for a Subscriber

Use this test to verify that fax has indeed been made available to a subscriber. This test assumes that the subscriber under test has fax capabilities added as described under "Enabling an Individual Subscriber for Fax" on page 2-17.

Use this test to verify that fax has indeed been made available to a subscriber. This test assumes that fax capabilities have been added for the subscriber under test as described under the heading "Enabling an Individual Subscriber for Fax" on page 2-17.

1. Use a telephone to log in as the subscriber whose mailbox is under test.

-
2. Press **[1]** to access the message recording menu. Hang up after you verify that you hear instructions for recording a fax.

Changing the Class of Service (COS) for Subscribers

By performing this test, you verify that the fax feature is controlled for a class of service that, in turn, affects a group of subscribers. (Fax must be turned on for the system.)

1. From the Intuity Administration form access the AUDIX Administration form.
2. Enter **ch c**, and change the class of service for the subscribers as necessary.
3. Enter **ad su extension** (where *extension* is an as-yet unused number). Tab to the COS field and fill in the name or number of the class of service you just changed.
4. Press **[NEXTPAGE]** (F7) and verify that the fax field is as you left it in the COS form. Press **[CANCEL]** (F1) to quit the add-subscriber form.
5. Use a telephone to log in as one of the subscribers who belong to the class of service you just changed.
6. Press **[1]** to access the message recording menu. Hang up after you verify that you do or do not hear instructions for recording a fax (as appropriate).

Sending a Broadcast Voice/Fax Message

Use this test to verify transmission of a fax broadcast message. (This assumes the administrator's extension has broadcast privileges.)

1. Log in to the administrator's extension from a facsimile machine.
2. After you are logged in:
 - a. press **[1]**, record the voice portion for your broadcast message, and press **[#]** once to approve the voice message, and again to approve (no) addressing.
 - b. Press **[5]** to attach a (future) fax, then **[8]** to make the message a broadcast message.
 - c. Set other options from the spoken menu as appropriate then press **[#]** to approve.
 - d. Add the fax portion to the message and send the message.
3. Log in again, press **[2]** to get your messages, and verify that a heading indicates your message was broadcast.

4. Verify the accuracy of the fax transmission by printing the fax message. Follow the prompts given by the menu to print the message.

Test the Operation of a Facsimile Machine

This test verifies that a facsimile machine will print messages sent by means of the Intuity fax feature.

1. From a facsimile machine call the Intuity log-in extension, then log in to the activity menu from the facsimile machine under test.
2. Send a fax message to your mailbox:
 - a. From the activity menu, press [1][#]. You will be prompted for a destination address.
 - b. Enter your phone number and [#][#][#] to: approve, quit addressing, and prepare to send. You will be prompted to start your fax.
 - c. Execute the sequence of actions required to send a fax on this particular machine.
3. After the fax is sent, call the Intuity log-in extension from the machine under test and log in to the activity menu again.
4. From the activity menu, press [2], then follow the prompts to discover and print the fax you just sent.
5. Verify that the fax message was properly printed by the machine under test.
6. Delete the fax message just printed.

Test a Secondary Extension

Use this test to verify the capabilities of a secondary extension.

1. From a facsimile machine, call the secondary extension under test and transmit a fax.
2. Log in as the subscriber who owns the secondary extension under test. Press [2], then follow the prompts to discover and print the fax you just sent.
3. Verify that the fax message from the secondary extension under test was properly printed.
4. Delete the fax message just printed.

Test an Auto Attendant and a Fax Secondary Extension

An auto attendant can be used to route calls to secondary extensions. The following steps illustrate how to test the set up of an auto attendant that accesses secondary extensions.

This procedure assumes an auto attendant set up as described in *Intuity AUDIX R3.3 Administration and Feature Operations (585-310-552)*.

1. Make some calls to the auto attendant and verify that you can transfer to all mailboxes and secondary extensions under test.
2. From a facsimile machine, send faxes to all mailboxes under test by transferring to these secondary extensions through the auto attendant.
3. From a facsimile machine, login as each subscriber press [2], then follow the prompts to:
 - a. Verify that headers indicate the fax messages were received by each of the mail boxes under test.
 - b. Print out the messages to verify accurate transmission.
 - c. Delete each of the fax messages you just sent.

Test a Guaranteed Fax Machine

Use this test to verify the operation of a guaranteed fax machine.

1. From a second facsimile machine, send a fax to the guaranteed fax machine under test. Verify that the transmission is printed on the guaranteed fax machine.
2. Now turn off or otherwise disable the guaranteed fax machine under test.
3. Send another fax to the guaranteed fax machine.

The fax should be re-routed to the fax machine's mailbox.
4. Log in to the mailbox of the guaranteed fax machine under test, press [2] and follow the prompts until you verify that a header indicates the presence of your message.
5. Now turn on or otherwise enable the guaranteed fax machine under test.
6. Verify that the transmission is printed on the guaranteed fax machine.
7. Log in to the mailbox of the guaranteed fax machine under test, press [2] and follow the prompts to listen to headers until you verify that your message is no longer in the mailbox.

Subscriber Tests

This section contains tests that verify subscriber-administered capabilities.

Subscriber Administering the Default Fax Print Destination

Use this procedure to set up and verify a subscriber's default print destination number.

1. Log in as a subscriber on your Intuity machine.
2. Press **[5]**. The system offers fax administration.
3. Press **[3]**. The system offers default printer number administration.
4. Press **[1]**, then enter the facsimile extension number to be used for the default fax print destination.
5. Press **[#]** to approve the default number to be used for fax printing.
6. Hang up the call and send a fax to the subscriber's fax extension from a facsimile machine.
7. Log back in again as the subscriber for whom you just left a message.
 - a. Press **[2]** to get messages.
 - b. Follow the prompts until the system announces your fax message.
 - c. Press **[*][1]** to get the print-options menu.
 - d. Press **[#]** to print the fax message to the default print extension.
8. Verify the delivery of the test message to the facsimile machine you just administered as default.

Subscriber Using the Auto Print Feature

Use this procedure to verify feature operation when a subscriber sets up auto printing of new fax messages.

1. Log in as the subscriber on your Intuity machine.
2. Press **[5][3]** to access the fax-options menu.
3. If the subscriber has established a default fax number skip this step. Otherwise, to administer a default fax number, press **[1]**.
 - a. Enter the facsimile extension number to be used for the default fax print destination.
 - b. Press **[#]** to approve the default number to be used for fax printing. Here, you are returned to the fax-options menu.

-
4. Choose from among automatic features as follows:
 - a. Press **[9]** to enable autoprnt.
 - b. You are offered the option of activating autodelete. If you choose to do so press **[9]** again.
 - c. Hang up the phone.
 5. Send a fax to the the subscriber you have set up for autoprnting.
 6. Verify that the fax message is printed on the default machine.
 7. Log back in as the subscriber and press **[7][2]** to scan the incoming mailbox.
 - If you did not choose to activate autodelete, the fax message you printed above should be in the old category (because it was printed). Delete the message.
 - If autodelete is active, there should be no sign of the fax message.

Verify Fax Message Forwarding

Use this procedure to verify that a fax message can be forwarded from a subscriber's mailbox.

1. From a facsimile machine, call the Intuity log-in extension, then log in to the activity menu from the facsimile machine under test.
2. Send a voice/fax message to the subscriber's mailbox:
 - a. From the activity menu, press **[1]**, speak a message for the subscriber, then press **[#]**. You will be prompted for a destination address.
 - b. Enter the subscriber's extension and **[#][#][#]** to: approve, quit addressing, and prepare to send. You will be prompted to start your fax.
 - c. Execute the sequence of actions required to send a fax on this particular machine.
3. Log in as the subscriber and press **[2]** to get messages. Follow the prompts untill you come to the header for your message, then forward the message to your own number and to a facsimile machine:
 - a. At the header: press **[1]**, add a comment as instructed and press **[#]** after the comment.
 - b. Enter your extension and press **[#]**. Enter the extension of a facsimile machine and **[#][#][#]** to: approve, quit addressing, and forward the fax.
4. Verify the delivery of the message to the facsimile machine.

5. Call the Intuity log-in extension, then log in to the activity menu and press **[2]** to get your messages.
6. Following the prompts, verify that a header announces the voice/fax message you forwarded.

Verify Sending a Fax Message To a Mailing List

Use this test to verify that a subscriber can send messages to a mailing list.

1. Log in as the subscriber.
2. Set up a brief mailing list for the subscriber. Use extension numbers that are on the local Intuity AUDIX and, if you have another fax-enabled Intuity AUDIX, pick some extension numbers that are valid, but on another Intuity AUDIX. You can even list a facsimile machine:
 - a. Press **[5][1][1]** from the activity menu.
 - b. Enter an identification number of no more than 6 digits and press **[#]**.
 - c. Enter an extension followed by **[#]**. (Repeat this step as necessary.)
 - d. Press **[#]** to approve the list.
3. Send a voice/fax message to the subscriber's new list:
 - a. From the activity menu, press **[1]**, speak a message for the subscriber, then press **[#]**. You will be prompted for a destination address.
 - b. Enter **[*][L]** to access a list. You will be prompted for the list's owner. Press **[#]** to indicate ownership. You will be prompted for list identification.
 - c. Enter list identification and **[#][#][#]** to: approve, quit addressing, and prepare to send. You will be prompted to start your fax.
 - d. Execute the sequence of actions required to send a fax on this particular machine.
4. Verify the delivery of the messages you just sent.

Abbreviations

A

AC

alternating current

ACD

automatic call distribution

ADAP

administration and data acquisition package

ADU

asynchronous data unit

ALT

assembly load and test

AMIS

Audio Messaging Interchange Specification

API

application programming interface

AT&T

American Telegraph and Telephone

AUDIX

Audio Information Exchange

AWG

American wire gauge

B

BIOS

basic input/output system

bps

bits per second

BRI

basic rate interface

BSC

binary synchronous communications

BTU

British thermal unit

C

CCA

call classification analysis

CDH

call data handler process

CELP

code excited linear prediction

CIC

customer information center

CICS

customer information control system

CO

central office

COIN

central office implemented network

COM1

serial communications port 1

COM2

serial communications port 2

COR

class of restriction

COS

class of service

CPU

central processing unit

CSI

called subscriber information

CTS

clear to send

D

DAC

dial access code

DC

direct current

DCE

data communications equipment

Abbreviations

DCIU
data communications interface unit

DCP
digital communications protocol

DCS
distributed communications system

DID
direct inward dialing

DIP
data interface process

DMA
direct memory access

DNIS
dialed number identification service

DSP
digital signal processor

DSU
data service unit

DTE
data terminal equipment

DTMF
dual tone multifrequency

DTR
data terminal ready

E

EIA
Electronic Industries Association

ESD
electrostatic discharge

ESS
electronic switching system

F

FIFO
first-in first-out

FOOS
facility out of service

G

GBCS
Global Business Communications Systems

GOS
grade of service

H

Hz
hertz

I

IDI
isolating data interface

IMAPI
Intuity messaging application programming interface

INADS
initialization and administration system

I/O
input/output

IRQ
interrupt request

ISDN
integrated services digital network

IVC6
integrated voice CELP card (6 channels)

K

Kbps
kilobits per second

Kbyte
kilobyte (1024 bytes)

Abbreviations

kHz
kilohertz

L

LAN
local area network

LCD
liquid crystal display

LED
light-emitting diode

LWC
leave word calling

M

MANOOS
manually out of service

Mbyte
megabyte (one million bytes)

MHz
megahertz

modem
modulator/demodulator

MPDM
modular processor data module

ms
millisecond

MT
maintenance (Intuity software component)

MTBF
mean time between failures

MWI
message-waiting indicator

N

NW
Intuity AUDIX Digital Networking

O

OA&M
operations, administration, and maintenance

OS
operating system

P

PBX
private branch exchange

PC
power converter or personal computer

PDM
processor data module

PEC
price element code

POST
power-on self test

R

RAM
random-access memory

REN
ringer equivalence number

ROM
read-only memory

RTS
request to send

RTU
right to use

S

SCSI
small computer systems interface

Abbreviations

SID

switch integration device

SIMM

single in-line memory module

SMSI

simplified message service interface

SW

switch integration (Intuity software component)

T

TDD

telecommunications device for the deaf

TDM

time division multiplex

T/R

tip/ring

TRIP

tip/ring input process

TSC

AT&T's Technical Services Center

U

UCD

uniform call distribution

UPS

uninterruptible power supply

V

VM

Intuity AUDIX Voice Messaging

VP

voice platform (Intuity software component)

VR

Intuity Intro Voice Response

VROP

voice response output process

Glossary

1A ESS Switch

An AT&T central office switch that can be integrated with the Intuity system.

5ESS Switch

An AT&T central office switch that can be integrated with the Intuity system.

A

accessed message

A voice mail message that was received and scanned (either the entire message or just the header).

ACD

See *automatic call distribution*.

activity menu

The list of options voiced to Intuity AUDIX subscribers when they first access the system. Selecting an activity is the starting point for all user operations.

ADAP

See *administration and data acquisition package*.

address

Intuity AUDIX subscriber identification, containing the subscriber's extension and machine, that indicates where the system needs to deliver a voice mail 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 closely integrated with a switch, such as an Intuity system or a call management system (CMS).

administration

The process of setting up a system (such as a switch or a voice messaging system) to function as desired. Options and defaults are normally set up (translated) by the system administrator or service personnel.

administration and data acquisition package (ADAP)

A software package that allows the system administrator to transfer system subscriber, maintenance, or traffic data from an Intuity AUDIX system to a personal computer (PC).

ADU

See *asynchronous data unit*.

alarm log

A list of alarms that represent all of the active or resolved problems on an Intuity system. The alarm log is stored in a software file on disk and can be accessed either locally or remotely on a terminal connected to the system.

alarms

Hardware, software, or environmental problems that may affect system operation. Alarms are classified as major, minor, or warning.

alphanumeric

Alphabetic, numeric, or punctuation symbols.

AMIS

See *Audio Messaging Interchange Specification*.

AMIS Prefix

A number added to the destination number to indicate that the destination number is an AMIS analog networking number.

ampere (amp)

The unit of measurement of electric current. One volt of potential across one ohm causes a current flow of one amp.

analog networking

A method of transferring a voice mail message from one voice messaging system to another whereby the message is played back (voiced) during the transmission from one system to another.

analog signal

A communications path that, in teleprocessing usage, usually refers to a voice-grade telephone line.

announcement fragment

A numbered piece of spoken information that makes up a system message or prompt.

antistatic

A material that is treated to prevent the build-up of static electricity.

asynchronous communication

A method of data transmission in which bits or characters are sent at irregular intervals and bits or characters are spaced by start and stop bits and not by time. See also *synchronous communication*.

asynchronous data unit (ADU)

An electronic communications device that can extend data transmission over asynchronous lines more than 50 feet in length. Recommended ADUs include Z3A1 or Z3A4.

asynchronous transmission

A form of serial communications where each transmitted character is bracketed with a start bit and one or two stop bits. The Intuity system provides asynchronous RS-232 capabilities for Intuity AUDIX Digital Networking, if required.

Audio Messaging Interchange Specification (AMIS)

An analog networking feature that allows subscribers to exchange voice mail messages with any voice messaging system that also has AMIS Analog Networking capabilities. Messages can be exchanged with subscribers on Intuity systems as well as with users on remote voice messaging systems made by vendors other than AT&T.

Audio Information Exchange (AUDIX)

A complete voice messaging system accessed and operated by touch-tone telephones and integrated with a switch.

audit

A software program that resolves filesystem incompatibilities and updates restored filesystems to a workable level of service. Audits are done automatically on a periodic basis, or can be performed on demand.

AUDIX

See *Audio Information Exchange*.

autodelete

An Intuity AUDIX feature that allows subscribers to indicate that faxes are automatically deleted from their mailbox after being printed.

automated attendant

A feature that allows a user of an Intuity system to set up a main extension number with a menu of options that routes callers to an appropriate department at the touch of a button.

automatic call distribution (ACD)

The System 85, Generic 2, or Generic 3 call-distribution group of analog ports that connects Intuity subscribers and users to the system. See also *call-distribution group*.

automatic message scan

An Intuity AUDIX feature that allows subscribers to scan all message headers and messages at the touch of two buttons. With Intuity FAX Messaging, this feature allows all new faxes to be bundled and transmitted over a single fax call delivery call. Also called *autoscan*.

autoprint

An Intuity AUDIX feature that allows subscribers to indicate that faxes are automatically sent to a specified print destination.

autoscan

See *automatic message scan*.

B

background testing

Testing that runs continuously when the system is not busy doing other tasks.

backup

A duplicate copy of files and directories saved on a removable media such as floppy diskette or tape. The backup filesystem may be copied back (restored) if the active version is damaged (corrupted) or lost.

basic input/output system (BIOS)

A system that contains the buffers for sending information from a program to the actual hardware device the information should go to.

baud

A unit of measurement that describes the speed of transferred information.

baud rate

Transmission signaling speed.

basic call transfer

A switch hook-flash method used to send the Intuity AUDIX transfer command over analog voice ports.

basic rate access

See *basic rate interface*.

basic rate interface (BRI)

International standard protocol for connecting a station terminal to an integrated systems digital network (ISDN) switch. ISDN BRI supports two 64 Kbps information bearer channels (B1 and B2), and one 16 Kbps call status and control (D) channel (a 2B + D format). Also called *basic rate access*.

binary digit (bit)

Two-number notation that uses the digits 0 and 1. Low-order bits are on the right (for example, 0001=1, 0010=2, and so forth). Four bits make a nybble; eight bits make a byte.

binary synchronous communications (BSC)

A character-oriented synchronous link protocol.

BIOS

See *basic input/output system*.

bit

See *binary digit*.

body

The part of subscriber voice mail that contains the actual spoken message. For a leave word calling (LWC) message, it is a standard system announcement.

boot

The operation to start a computer system by loading programs from disk to main memory (part of system initialization). Booting is typically accomplished by physically turning on or restarting the system. Also called *reboot*.

boot filesystem

The filesystem from which the system loads its initial programs.

bps (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.

BRI

See *basic rate interface*.

broadcast messaging

An Intuity AUDIX feature that enables the system administrator and other designated users to send a message to all subscribers automatically.

BSC

See *binary synchronous communications*.

buffer

Memory used to compensate for time differences in transmission by temporarily storing data.

bulletin board

An Intuity AUDIX feature that allows a message to be played to callers who dial the extension. Callers cannot leave a message since it is a listen-only service. Also called *information service*.

bundling

Combining several calls and handling them as a single call. See also *automatic message scan*.

bus

An electrical connection/cable allowing two or more wires, lines, or peripherals to be connected together.

busy-out/release

To remove an Intuity device from service (make it appear busy or in use), and later restore it to service (release it). The Intuity switch data link, voice ports, or networking ports may be busied out if they appear faulty or if maintenance tests are run.

byte

A unit of storage in the computer. On many systems, a byte is eight bits (binary digits), the equivalent of one character of text.

C

call-answer

An Intuity AUDIX feature that allows the system to answer a call and record a message when the subscriber is unavailable. Callers may be redirected to the system through the call coverage or call forwarding switch features. Subscribers may record a personal greeting for these callers.

call-answer language choice

The capability of subscriber mailboxes to accept messages in either of two different languages. This capability exists when the multilingual feature is turned on.

callback number

In AMIS analog networking, the telephone number transmitted to the recipient machine to be used in returning voice mail messages that cannot be delivered.

call coverage

A switch feature that defines a preselected path for calls to follow if the first (or second) coverage points are not answered. The Intuity system may be placed at the end of a coverage path to handle redirected calls through call coverage, send all calls, go to cover, etc.

call delivery

See *message delivery*.

call-distribution group

The set of analog port cards on the switch that connects subscribers and users to the Intuity system by distributing new calls to idle ports. This group (or split) is called automatic call distribution (ACD) on System 85, Generic 2, and Generic 3 and uniform call distribution (UCD) on System 75, Generic 1, and Generic 3. See also *automatic call distribution* and *uniform call distribution*.

called tone (CED tone)

The distinctive tone generated by a fax endpoint when it answers a call (constant 2100 Hz tone).

called subscriber information (CSI)

The identifier for the answering fax endpoint. This identifier is sent in the T.30 protocol and is generally the telephone number of the fax endpoint.

calling tone (CNG tone)

The distinctive tone generated by a fax endpoint when placing a call (constant 1100 Hz tone on for one-half second, off for three seconds).

call vectoring

A System 85 R2V4, Generic 2, and Generic 3 feature that uses a vector (switch program), allowing a switch administrator to customize the behavior of calls sent to an automatic call distribution (ACD) group.

card cage

An area within the Intuity hardware platform that contains and secures all of the standard and optional circuit cards used in the system.

cartridge tape drive

A high-capacity data storage/retrieval device that can be used to transfer large amounts of information onto high-density magnetic cartridge tape based on a predetermined format. This tape is to be removed from the system and stored as a backup.

CED tone

See *called tone*.

central office (CO)

An office or location in which large telecommunication machines such as telephone switches and network access facilities are maintained. In a CO, private customer lines are terminated and connected to the public network through common carriers.

central processing unit (CPU)

The component of the computer that manipulates data and processes instructions coming from software.

channel capacity

A measure of the maximum bit rate through a channel.

class of service (COS)

The standard set of Intuity AUDIX features given to subscribers when they are first administered (set up with a voice mailbox).

clear to send (CTS)

Located on Pin 5 of the 25-conductor RS-232 interface, CTS is used in the transfer of data between the computer and a serial device.

client

A computer that sends, receives and uses data, but that also shares a larger resource whose function is to do most data storage and processing. For Intuity Message Manager, the subscriber's PC running Message Manager is the client. See also *server*.

CNG tone

See *calling tone*.

CO

See *central office*.

collocated

An Intuity system installed in the same physical location as the host switch. See also *local installation*.

collocated adjunct

Two or more adjuncts that are serving the same switch (i.e., each has voice port connections to the switch) or that are serving different switches but can be networked through a direct RS-232 connection due to their proximity.

comcode

AT&T's numbering system for telecommunications equipment. Each comcode is a nine digit number that represents a specific piece of hardware, software, or documentation.

command

An instruction or request given by the user to the software to perform a particular function. An entire command consists of the command name and options. Also, one- or two-key touch tones that control a voice mailbox activity or function.

compound message

A message that combines both a voice message and a fax message into one unit, which is then handled by Intuity AUDIX as a single message.

configuration

The particular combination of hardware and software components selected for a system, including external connections, internal options, and peripheral equipment.

controller circuit card

A circuit card used on a computer system that controls its basic functionality and makes the system operational. These cards are used to control magnetic peripherals, video monitors, and basic system communications.

COS

See *class of service*.

coverage path

The sequence of alternate destinations to which a call is automatically sent when the call is not answered by a subscriber. This sequence is set up on the switch, normally with Intuity AUDIX as the last or only destination.

CPU

See *central processing unit*.

cross connect

Distribution system equipment used to terminate and administer communication circuits.

cross connection

The connection of one wire to another, usually by anchoring each wire to a connecting block and then placing a third wire between them so that an electrical connection is made.

CSI

See *called subscriber information*.

CTS

See *clear to send*.

D

database

A structured set of files, records, or tables. Also, a collection of filesystems and files in disk memory that store the voice and nonvoice (program data) necessary for Intuity system operation.

data communications equipment (DCE)

Standard type of data interface normally used to connect to data terminal equipment (DTE) devices. DCE devices include the data service unit (DSU), the isolating data interface (IDI), and the modular processor data module (MPDM).

data communications interface unit (DCIU)

A switch device that allows nonvoice (data) communication between an Intuity system and an AT&T switch. The DCIU is a high-speed synchronous data link that communicates with the common control switch processor over a direct memory access (DMA) channel that reads data directly from FP memory.

data link

A term used to describe the communications link used for data transmission from a source to a destination. For example, a phone line for data transmission.

data service unit (DSU)

A device used to access digital data channels. DATAPHONE II 2500 DSUs are synchronous data communications equipment (DCE) devices used for extended-local Intuity system connections. The 2600 or 2700 series may also be used; these are more expensive DSU options and support diagnostic testing and the DATAPHONE II Service network system.

data set

AT&T term for a modem. A data set usually includes the telephone. See also *modem*.

data terminal equipment (DTE)

Standard type of data interface normally used for the endpoints in a connection. Normally the Intuity system, most terminals, and the switch data link are DTE devices.

data terminal ready (DTR)

A control signal sent from the data terminal equipment (DTE) to the data communications equipment (DCE) that indicates the DTE is on and ready to communicate.

DBP

See *data base processor*.

DCE

See *data communications equipment*.

DCIU

See *data communications interface unit*.

DCP

See *digital communications protocol*.

DCS

See *distributed communications system*.

debug

See *troubleshoot*.

dedicated line

A communications path that does not go through a switch. A dedicated (hard-wired) path may be formed with directly connected cables. MPDMs, DSUs, or other devices may also be used to extend the distance that signals can travel directly through the building wiring.

default

A value that is automatically supplied by the system if no other value is specified.

default print number

The subscriber-administered extension to which autoprinted faxes are redirected upon their receipt into the subscriber's mailbox. This default print destination is also provided as a print option when the subscriber is manually retrieving and printing faxes from the mailbox.

delivered message

A voice mail message that has been successfully transmitted to a recipient's incoming mailbox.

demand testing

Testing performed on request (usually by service personnel).

diagnostic testing

A program run for testing and determining faults in the system.

dial-ahead/dial-through

The act of interrupting or preceding Intuity AUDIX system announcements by typing (buffering) touch-tone commands in the order the system would normally prompt for them.

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 voice mail messages between voice messaging systems in a digital format. See also *Intuity AUDIX Digital Networking*.

DIP switch

See *dual in-line package switch*.

direct memory access (DMA)

A quick method of moving data from a storage device directly to RAM, which speeds processing.

directory

An Intuity 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.

display terminal

A data terminal with a screen and keyboard used for displaying Intuity screens and performing maintenance or administration activities.

distributed communications system (DCS)

A network of two or more switches that uses logical and physical data links to provide full or partial feature transparency. Voice links are made using tie trunks.

distribution list

See *mailing list*.

DMA

See *direct memory access*.

DSR

See *data set ready*.

DSU

See *data service unit*.

DTE

See *data terminal equipment*.

DTR

See *data terminal ready*.

dual in-line package (DIP) switch

A very small switch, usually attached to a printed circuit card, in which there are only two settings: on or off (or 0 or 1). DIP switches are used to configure the card in a semipermanent way.

dual language greetings

The capability of Intuity AUDIX subscribers to create personal greetings in two different languages — one in a primary language and one in a secondary language. This capability exists when the multilingual feature is turned on and the prompts for subscriber mailboxes can be in either of the two languages.

E

electrostatic discharge (ESD)

Discharge of a static charge on a surface or body through a conductive path to ground. An ESD can be damaging to integrated circuits.

enabled/disabled

The state of a hardware device that indicates whether the Intuity system can use it. Devices must be equipped before they can be enabled (made active). See also *equipped/unequipped*.

endpoint

See *fax endpoint*.

enhanced call transfer

An Intuity AUDIX feature that allows compatible switches to transmit messages digitally over the BX.25 (data) link. This feature is used for quick call transfers and requires a fully integrated digital switch. Callers can only transfer to other extensions in the switch dial plan.

enhanced serial data interface

A software- and hardware-controlled method used to store data on magnetic peripherals.

equipped/unequipped

The state of a networking channel that indicates whether Intuity software has recognized it. Devices must be equipped before they can be enabled (made active). See also *enabled/disabled*.

error message

A message on the screen indicating that something is wrong and possibly suggesting how to correct it.

errors

Problems detected by the system during operation and recorded in the maintenance log. Errors can produce an alarm if they exceed a threshold.

escape from reply

The ability to quickly return to getting messages for a subscriber who gets stuck trying to respond to a message. To escape, the subscriber simply presses #.

escape to attendant

An Intuity AUDIX feature that allows a 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.

ESD

See *electrostatic discharge*.

events

Informational messages about the system's activities. For example, an event is logged when the system is rebooted. Events may or may not be related to errors and alarms.

F

fax endpoint

Any device capable of receiving fax calls. Fax endpoints include fax machines, individual PC fax modems, fax ports on LAN fax servers, and ports on fax-enabled messaging systems.

field

An area on a screen, menu, or report where information can be typed or displayed.

file

A collection of data treated as a basic unit of storage.

filename

Alphanumeric characters used to identify a particular file.

file redundancy

See *mirroring*.

filesystem

A collection of related files (programs or data) stored on disk that are required to initialize a Intuity system and provide full service.

F key

See *function key*.

format

To set up a disk, floppy diskette, or tape with a predetermined arrangement of characters so that the system can interpret meaningful information.

function

Individual steps or procedures within a voice mailbox activity.

function key (F key)

A key on a computer keyboard that performs a defined function when pressed. The user interface for the Intuity system defines keys F1 through F8.

G

Generic 1, 2, or 3

AT&T switch system software releases. Generic 1, Generic 3i, and Generic 3s correspond to the new generation of System 75-based software. Generic 2 and Generic 3r correspond to the new release of System 85-based software.

generic tape

A copy of the standard software and standalone tape utilities that is shipped with a new Intuity system.

GOS

See *grade of service*.

grade of service (GOS)

A parameter that describes the delays in accessing a port on the Intuity system. For example, if the GOS is P05, 95% of the callers would hear the system answer and 5% would hear ringing until a port became available to answer the call.

guaranteed fax

A feature of Intuity FAX Messaging that temporarily stores faxes sent to a fax machine. In cases where the fax machine is busy or does not answer a call, the call is sent to an Intuity AUDIX mailbox.

guest password

A feature that allows users who are not Intuity AUDIX subscribers to leave messages on the system by dialing a subscriber's extension and entering a system-wide guest password.

H

hard disk drive

A high-capacity data storage/retrieval device that is located inside a computer platform. A hard disk drive stores data on non-removable high-density magnetic media based on a predetermined format for retrieval by the system at a later date.

hardware

The physical components of a computer system. The central processing unit, disks, tape and floppy drives are all hardware.

header

Information that the system creates to identify a message. A message header includes the originator or recipient, type of message, creation time, and delivery time.

help

A command run by pressing (HELP) or (CTRL) (?) on an Intuity display terminal to show the options available at your current screen position. In the Intuity AUDIX system, press (*) (H) on the telephone keypad to get a list of options. See also *on-line help*.

hertz (Hz)

A measurement of frequency in cycles per second. A hertz is one cycle per second.

host switch

The switch directly connected to the Intuity system over the data link. Also, the physical link connecting an Intuity system to a distributed communications system (DCS) network.

hunt group

A group of analog ports on a switch usually administered to search for available ports in a circular pattern.

Hz

See *hertz*.

I

IDI

See *isolating data interface*.

IMAPI

See *Intuity messaging application programming interface*.

INADS

See *initialization and administration system*.

information service

See *bulletin board*.

initialization

The process of bringing a system to a predetermined operational state. The start-up procedure tests hardware; loads the boot filesystem programs; locates, mounts, and opens other required filesystems; and starts normal service.

initialization and administration system (INADS)

A computer-aided maintenance system used by remote technicians to track alarms.

initialize

To start up the system for the first time.

input

A signal fed into a circuit or channel.

integrated services digital network (ISDN)

A network that provides end-to-end digital connectivity to support a wide range of voice and data services.

integrated voice processing CELP (IVC6) card

A computer circuit card that supports both fax processing and voice processing capabilities. It provides two analog ports to support six analog channels. All telephone calls to and from the Intuity system are processed through the IVC6 card.

interface

The device or software that forms the boundary between two devices or parts of a system, allowing them to work together. See also *subscriber interface*.

interrupt request (IRQ)

A device that signals the data bus and the CPU that it needs attention.

Intuity AUDIX Digital Networking

An Intuity feature that allows customers to link together up to 500 remote Intuity machines for a total of up to 500,000 remote subscribers. See also *digital networking*.

Intuity Message Manager

A Windows-based software product that allows Intuity AUDIX subscribers to receive, store, and send their voice/FAX messages from a PC.

Intuity messaging application programming interface (IMAPI)

A software function-call interface that allows Intuity AUDIX to interact with Intuity Message Manager.

I/O address

input/output address.

IRQ

See *interrupt request*.

ISDN

See *integrated services digital network*.

isolating data interface (IDI)

A synchronous, full duplex data device used for cable connections between an Intuity GPSC-AT/E card and the switch data communications interface unit (DCIU).

IVC6 card

See *integrated voice processing CELP (IVC6) card*.

J

jumper

Pairs or sets of small prongs on circuit cards and mother boards that allow the user to instruct the computer to select one of its available operation options. When two pins are covered, an electrical circuit is completed.

K

Kbps

kilobits per second. One thousand bits per second.

L

label

The name assigned to a disk device (either a removable tape cartridge or permanent drive) through software. Cartridge labels may have a generic name (such as 3:3) to show the software release or a descriptive name if for backup copies (such as back01). Disk drive labels usually indicate the disk position (such as disk00 or disk02).

LAN

See *local area network*.

LCD

See *liquid crystal display*.

leave word calling (LWC)

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

LED

See *light emitting diode*.

light emitting diode (LED)

A light indicator on the hardware platform that shows the status of operations.

liquid crystal display (LCD)

The 10-character alphanumeric display that shows status of the system, including alarms.

load

To read software from external storage (such as disk) and place a copy in system memory.

local area network (LAN)

A network of PCs that communicate with each other and that normally share the resources of one or more servers. Operation of Intuity Message Manager requires that the Intuity AUDIX system and the subscribers' PCs are on a LAN.

local AUDIX machine

The AUDIX system where a subscriber's voice mailbox is located. All subscribers on this home machine are called *local subscribers*.

local installation

A switch, adjunct, or peripheral equipment installed physically near the host switch or system. See also *collocated*.

local network

An Intuity AUDIX Digital Network in which all Intuity systems are connected to the same switch.

login

A unique code used to gain approved access to the Intuity system. See also *password*.

login announcement

A feature enabling the system administrator and other designated users to create a voice mail message that is automatically played to all Intuity AUDIX subscribers every time they login to the system.

M

magnetic peripherals

Data storage devices that use magnetic media to store information. Such devices include hard disk drives, floppy disk drives, and cartridge tape drives.

mailbox

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

mailing list

A group of Intuity AUDIX 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.

major alarm

An alarm detected by Intuity software that affects at least one fourth of the Intuity ports in service. Often a major alarm indicates that no service is available.

multi-application platform (MAP)

The computer hardware platform used by the Intuity system. Currently, a MAP/5, MAP/40, and MAP/100 are available.

megabyte

A unit of memory equal to 1,048,576 bytes (1024 x 1024). It is often rounded to one million.

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).

menu tree

The way in which nested automated attendants are set up.

message categories

Groups of messages in Intuity AUDIX 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 delivery

An optional Intuity feature that permits subscribers to send messages to any touch-tone telephone, as long as the telephone number is in the range of allowable numbers. This feature is an extension of the AMIS analog networking feature and is automatically available when the AMIS feature is activated.

Message Manager

See *Intuity Message Manager*.

message-waiting indicator (MWI)

An indicator that alerts subscribers that they have received new voice mail messages. An MWI can be LED, neon, or audio (stutter dial tone).

minor alarm

An alarm detected by maintenance software that affects less than one fourth of the Intuity ports in service, but has exceeded error thresholds or may impact service.

mirroring

An Intuity system 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.

mode code

A string of touch-tones from a MERLIN LEGEND switch. A mode code may send the Intuity AUDIX system information such as call type, calling party, called party, and on/off signals for message waiting lamps.

modem

A device that converts data from a form that is compatible with data processing equipment (digital) to a form compatible with transmission facilities (analog), and vice-versa.

modular

A term that describes equipment made of plug-in units that can be added together to make the system larger, improve its capabilities, or expand its size.

modular processor data module (MPDM)

A data device that converts RS-232C or RS-449 protocol signals to digital communications protocol (DCP) used by System 75/85, Generic1, and Generic 3 switches. MPDMs may connect Intuity to a switch DCIU or SCI link or connect terminals to a switch port card.

MPDM

See *modular processor data module*.

multilingual feature

An Intuity AUDIX feature that allows up to nine simultaneously-active announcement sets on the system. With this feature, each Intuity AUDIX mailbox can be administered so that subscribers can hear prompts in the language of their choice.

MWI

See *message-waiting indicator*.

N

networking

See *Intuity AUDIX Digital Networking*.

networking prefix

A set of digits that identifies an Intuity machine.

night attendant

The automated attendant created on a MERLIN LEGEND switch that automatically becomes active during off-hours. The night attendant substitutes for one or more daytime attendants.

not deliverable message

A voice mail message that could not be delivered after a specified number of attempts. This usually means that the subscriber's mailbox is full.

O

on-line help

An Intuity feature that provides information about Intuity user interface screens by pressing a predetermined key. See also *help*.

operating system (OS)

The set of programs that runs the hardware and interprets software commands.

option

A choice selected from a menu, or an argument used in a command line to modify program output by modifying the execution of a command. When you do not specify any options, the command will execute according to its default options.

OS

See *operating system*.

outcalling

An Intuity feature that allows the system to dial subscribers' numbers to inform them they have new messages.

outgoing mailbox

A storage area for subscribers to keep copies of messages for future reference or action.

P

parallel transmission

The transmission of several bits of data at the same time over different wires. Parallel transmission of data is usually faster than serial transmission.

password

A code assigned to every Intuity terminal user and Intuity AUDIX subscriber for security reasons. After dialing the system, subscribers must dial their personal password correctly to log on. Passwords are also assigned to local and remote networked machines to identify the machines or the network. See also *login*.

password aging

An Intuity AUDIX feature that allows administrators to set a length of time after which a subscriber's password expires. The subscriber is then forced to change the password.

PBX

See *private branch exchange*.

PDM (processor data module)

See *modular processor data module (MPDM)*.

peripheral device

Equipment external to the Intuity cabinet, such as printers or terminals, necessary for full operation and maintenance of the Intuity system. Also called *peripherals*.

personal directory

An Intuity AUDIX feature allowing each subscriber to create a private list of customized names.

personal fax extension

See *secondary extension*.

pinouts

The signal description per pin number for a particular connector.

port

A connection or link between two devices, allowing information to travel to a desired location. For example, a switch port connects to an Intuity voice port to allow a subscriber to leave a message.

priority call answer

An Intuity AUDIX feature that allows callers to designate a call answer message as a priority message. To make a message priority, the caller presses 2 after recording the message.

priority messaging

An Intuity AUDIX feature that allows some subscribers to send messages that are specially marked and preferentially presented to recipients. See also *priority outcalling*.

priority outcalling

Works with the priority messaging feature by allowing the message recipient to elect to be notified by outcalling only when a priority message has been received. See also *priority messaging*.

private branch exchange (PBX)

A private switching system. See also *switch*.

private mailing list

A list of voice mail addresses that only the owning subscriber can access.

private messaging

A feature of Intuity AUDIX that allows a subscriber to send a voice mail message that cannot be forwarded by the recipient.

processor data module (PDM)

See *modular processor data module (MPDM)*.

processor interface (PI)

A System 75, Generic 1, Generic 3i, Generic 3s, and Generic 3vs switch data link. Also called *processor interface board (PIB)*.

programmed function key

See *function key*.

protocol

A set of conventions or rules governing the format and timing of message exchanges (signals) to control data movement and the detection and possible correction of errors.

public mailing list

A list of voice mail addresses that any Intuity AUDIX subscriber can use if that subscriber knows the owner's list ID# and extension number. Only the owner can modify a public mailing list.

pulse-to-touchtone converter

A device connected to the switch that converts signals from a rotary phone to touch tones. This device allows callers to use rotary phones to access options in a subscriber's mailbox or to access options in an automated attendant.

R

RAM

See *random access memory*.

random access memory (RAM)

The primary memory in a computer that can be overwritten with new information.

reboot

See *boot*.

remote access

Sending and receiving data to and from a computer or controlling a computer with terminals or PCs connected through communications links.

remote installation

A system, site, or piece of peripheral equipment that is installed in a different location from the host switch or system.

remote network

A network in which the systems are integrated with more than one switch.

remote service center

An AT&T or AT&T-certified organization that provides remote support to Intuity customers. Depending upon the terms of the maintenance contract, your remote service center may be notified of all major and minor alarms and have the ability to remotely log into your system and remedy problems.

remote subscribers

Intuity AUDIX voice mail subscribers whose mailboxes reside on a remote Intuity AUDIX Digital Networking machine.

remote terminal

A terminal connected to a computer over a phone line.

REN

See *ringer equivalence number*.

reply loop escape

An Intuity AUDIX feature that allows a subscriber the option of continuing to respond to a message after trying to reply to a nonsubscriber message.

reply to sender

An Intuity AUDIX 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.

request to send (RTS)

One of the control signals on a RS-232 connector that places the modem in the originate mode so that it can begin to send.

restart

An Intuity feature that allows Intuity AUDIX subscribers who have reached the system through the call answer feature to access their own mailboxes by typing the *R (Restart) command. This feature is especially useful for long-distance calls or for users who wish to access the Intuity system when all the voice mail ports are busy. Also, the reinitialization of certain software. For example, restarting the voice system.

restore

The process of recovering lost or damaged files by retrieving them from available backup tapes, floppy diskette, or another disk device.

retention time

The amount of time voice mail messages are saved on disk before being automatically deleted from a subscriber's mailbox.

ringer equivalence number (REN)

A number required in the United States for registering your telephone equipment with the phone company.

RTS

See *request to send*.

S

sales representative

An AT&T or AT&T-certified person who assists you in the purchasing, planning, and implementation of AT&T equipment and solutions.

SCA

See *switch communications adapter*.

scan

To automatically play voice mail messages, headers, or both.

scheduled delivery time

A time and/or date that an Intuity AUDIX subscriber optionally assigns to a message that tells the system when to deliver it. If a delivery time is omitted, the system sends the message immediately.

SCSI

See *small computer system interface*.

secondary extension

A second, fax-dedicated extension that directs incoming faxes directly into a subscriber's mailbox without ringing the telephone. The secondary extension shares the same mailbox as the voice extension, but acts like a fax machine. Also called *personal fax extension*.

serial transmission

The transmission of one bit at a time over a single wire.

server

A computer that processes and stores data that is used by other smaller computers. For Intuity Message Manager, Intuity AUDIX is the server. See also *client*.

shielded cables

Cables that are protected from interference with metallic braid or foil.

SIMMs

See *single in-line memory modules*.

simplified message service interface (SMSI)

Type of data link connection to an integrated 1A ESS switch or 5ESS switch in the Intuity system.

single in-line memory modules (SIMMs)

A method of containing random access memory (RAM) chips on narrow circuit card strips that attach directly to sockets on the CPU circuit card. Multiple SIMMs are sometimes installed on a single CPU circuit card.

small computer systems interface (SCSI)

An interface standard defining the physical, logical, and electrical connections to computer system peripherals such as tape and disk drives.

SMSI

See *simplified message service interface*.

split

Group (or queue) of analog ports on the switch. See also *call-distribution group*.

subscriber

An Intuity user who has been assigned the ability to access the Intuity AUDIX Voice Messaging system.

subscriber interface

The devices that subscribers use to access their mailboxes, manage mailing lists, administer personal greeting, and use other messaging capabilities. Subscriber interfaces include a touch-tone telephone keypad and a PC using Intuity Message Manager.

surge

A sudden voltage rise and fall in an electrical circuit.

surge protector

A device that plugs into the phone system and the commercial AC power outlet. It is designed to protect the phone system from high voltage surges that could be damaging to the phone system.

switch

An automatic telephone exchange that allows the transmission of calls to and from the public telephone network. See also *private branch exchange (PBX)*.

switched access

A connection made from one endpoint to another through switch port cards. This allows the endpoint (such as a terminal) to be used for several applications.

switch hook

The device at the top of most telephones which is depressed when the handset is resting in the cradle (on hook). This device is raised when the handset is picked up (the phone is off hook).

switch hook flash

A signaling technique in which the signal is originated by momentarily depressing the switch hook.

switch network

Two or more interconnected switching systems.

synchronous communication

A method of data transmission in which bits or characters are sent at regular time intervals, rather than being spaced by start and stop bits. See also *asynchronous communication*.

synchronous transmission

A type of data transmission where the data characters and bits are exchanged at a fixed rate with the transmitter and receiver synchronized. This allows greater efficiency and supports more powerful protocols.

system configuration

See *configuration*.

T

T.30

The standard for Group III fax machines that covers the protocol used to manage a fax session and negotiate the capabilities supported by each fax endpoint.

tape cartridge

One or more spare removable cartridges required to back up system information.

tape drive

The physical unit that holds, reads, and writes magnetic tape.

TDD

See *telecommunications device for the deaf*.

telecommunications device for the deaf (TDD)

A device with a keyboard and display unit that connects to or substitutes for a phone. The TDD allows a deaf or hearing-impaired person to communicate over the phone lines with other people who have TDDs. It also allows a deaf person to communicate with the Intuity AUDIX system.

terminal

See *display terminal*.

terminal type

A number indicating the type of terminal being used to log on to the Intuity system. Terminal type is the last required entry before gaining access to the Intuity display screens.

terminating resistor

A grounding resistor placed at the end of bus, line, or cable to prevent signals from being reflected or echoed.

tip/ring

A term used to denote the analog telecommunications interface.

tone generator

A device acoustically coupled to a rotary phone, used to produce touch-tone sounds when voice mail subscribers cannot use a regular touch-tone generating voice terminal.

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 Intuity system and switch features for users.

troubleshoot

The process of locating and correcting errors in computer programs. Also called *debug*.

U

UCD

See *uniform call distribution*.

Undelete

An Intuity AUDIX feature that allows subscribers to restore the last message deleted. The subscriber presses * U to restore a deleted message.

undelivered message

A message that has not yet been sent to an Intuity AUDIX subscriber's incoming mailbox. The message resides in the sender's outgoing message and may be modified or redirected by the sender.

Unequipped

See *equipped/unequipped*.

unfinished message

A message that was recorded but not approved or addressed, usually the result of an interrupted Intuity AUDIX session. Also called *working message*.

uniform call distribution (UCD)

The type of call-distribution group (or hunt group) of analog port cards on some switches that connects subscribers and users to the Intuity AUDIX system. System 75, Generic 1, Generic 3, and some central office switches use UCD groups. See also *call-distribution group*.

UNIX operating system

A multi-user, multitasking computer operating system.

untouched message

An Intuity AUDIX feature 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).

U. S. 123

An alternate announcement set in U. S. English whose prompts use numbers, not letters, to identify phone keypad presses. For example, a prompt might say, "press star three," instead of, "press star D."

user population

A combination of light, medium, and heavy users on which Intuity configuration guidelines are based.

V

vector

A customized program in the switch for processing incoming calls.

voice link

The Intuity analog connection(s) to a call-distribution group (or hunt group) of analog ports on the switch.

voice mail

See *voice message*.

voice mailbox

See *mailbox*.

voice message

Digitized voice information stored by the Intuity system on disk memory. Also called *voice mail*.

voice port

The IVC6 port that provides the voice interface between the Intuity system and the analog ports on the switch.

voice terminal

A telephone used for spoken communications with the Intuity system. A touch-tone telephone with a message-waiting indicator is recommended for all Intuity AUDIX subscribers.

voicing

Either speaking a message into the Intuity system during recording, or having the system playback a message or prompt to a subscriber.

volt

The unit of measurement of electromotive force. One volt is the force required to product a current of one ampere through a resistance of one ohm.

W

watt

A unit of electrical power that is required to maintain a current of one amp under the pressure of one volt.

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