

Concepts and Features

Printable Guide

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Contents

About This Topic Guide

Overview	ix
Navigating This Topic Guide.....	x
Table of Contents	x
Index	x
Underlined Text.....	x

What's New in Release 5.1

Support for New Magneto-Optical (MO) Backup and Restore Drive and Media	2
Support for 7-digit Dial Plans	2
Customers Can Now Perform Software Updates	2
New Reboot Features and Capabilities	2
Increased System Capacities	2
Improved Accessibility	4
FAX Messaging now has Extended Dialing Capabilities	4
Enterprise Directory Gateway	5
Inband PBX Configuration Tool	5
Support for www.messenger	5
Support for Mailbox Manager	6

What's New in Release 5

Functionality	7
End-user	9
Improved Security Gateway	10
System Management	11
Administrative and System	12

System Architecture

Platform Layers	15
Layer Interaction	16
Processing Layer	17
Service Layer	17
Applications Layer	18

System Components and Capacities

Platform Descriptions

General Descriptions	23
Backplanes	26
Serial Ports and Parallel Port	26
Hard Disk Drives and Speech Storage	27
CD-ROM Drive	27
Removable Tape and Disk Cartridge Drives	27
Diskette Drive	27
Keyboard	27
Modems	28
Printer	28
Terminals	29

Circuit Cards

Tip/Ring Circuit Card	33
Video Controller Circuit Card	34
SCSI Controller Circuit Cards and External SCSI Connections	35
RAID Controller Circuit Card	35
Remote Maintenance Circuit Card	35
ACCX Circuit Card	35
Super Serial Circuit Card	37
Switch Interface Circuit Card	37
Ethernet LAN Circuit Card	37
SSP Circuit Card	37

Comparison of Intuity AUDIX System Platforms

Weight and Space Considerations	39
Power Requirements	40
Platform Components and Capacities	40

Software Components

Standard Software Components	43
Switch Integration Packages	43

UnixWare Applications	44
Optional Software	44
System Features Description	
Messaging Concepts	
What Is a Message in a Intuity AUDIX System?	49
What Is a Mailbox?	50
Incoming Mailbox	51
Outgoing Mailbox	51
Telephone Access	52
PC Access	53
Intuity Message Manager	53
Electronic Mail Integration	54
Voice Messaging	
Voice Messaging Features	56
Voice Messaging Requirements	58
Voice Messaging Feature Operation	58
Voice Messaging Languages	60
Voice Messaging Planning Considerations	61
Voice Messaging Security	61
FAX Messaging	
Capabilities	67
Requirements	69
Operation	70
Planning Considerations	71
Message Manager	
Capabilities and Benefits	74
Requirements to Run Message Manager	74
Messaging Enhancements	77
Planning Considerations	80
Voice Director	
Voice Director Release 1	83
Capabilities of Spoken Name Addressing and Name Dialing	84
Components of Spoken Name Addressing and Name Dialing	84
Hardware and Software Requirements	85
Internet Messaging	
Internet Messaging Features	89
What Internet Messaging Can Do for You	90

Sending and Receiving Email	90
Web-based Administration	92
Planning	93
Security Issues	95
Enhanced List Application	
Features	97
Concepts	98
Implementing	99
Security Considerations	101
Intuity Lodging and Lodging FAX Messaging	
Features	104
Requirements	105
Available Languages	106
Networking	
Digital Networking	
Description	111
Requirements	112
Capacities	112
Connectivity	113
Channel Support	114
Features	115
Operation	117
AMIS Analog Networking	
Description	119
Requirements	120
Connectivity	120
Features	120
Operation	121
TCP/IP Local Area Networking	
Types of LAN Connections	123
Switch Integration	
Supported Features	
Supported Integration Methods	
Inband Signaling	129
Serial Interface	129
Digital Communications Interface	
Unit (DCIU) Interface	130

Digital Station Interface Circuit Card Interface	130
LAN Interface	130
Switch Integration Hardware Devices and Connections	
Distributed Communications System	
Description	149
Host Switches	150
Configuration	150
Operation	150
Requirements	151
Connectivity	151
Administration and Maintenance	
Centralized Voice Mail with Mode Code Network	
Administration	
Administrative Interfaces	159
Help	163
Remote Access	164
Internet Messaging Administration	165
Administration Tools and Utilities	
AUDIX Administration and Data Acquisition	
Package	167
Call Accounting System	168
Backup and Restore	169
Maintenance	
System Maintenance	171
Remote Maintenance Circuit Card	174
Remote Service Center	175
Diagnostics	175
Database Audits	178
Security	180
Additional Maintenance Tools	183
New Installations	
Analyzing Customer Needs	185
Platform Operating Requirements	186
Site Specifications	186
Switch Administration	186
Points of Demarcation	186
Upgrades and Updates	

Upgrades	189
Updates	190
Migrations	
Access Security Gateway	
Trusted Server Security	
Unauthorized System Use	
Security and Administrative Passwords	197
Unauthorized Mailbox Use	
Mailbox Administration to Prevent Unauthorized Use	199
Subscriber Mailbox Security and Password Administration	200
Unauthorized Use of Outcalling and AMIS Analog Networking Call Delivery Preventing Fraudulent Use	
Switch Administration	206
Detecting Voice Mail Fraud	
Call Detail Recording (or SMDR)	207
Call Traffic Report	208
Trunk Group Report	208
SAT, Manager I, and G3-MT Reporting	209
ARS Measurement Selection	209
Automatic Circuit Assurance	209
Busy Verification	209
AUDIX Traffic Reports	209
Avaya's Statement of Direction	
Year 2000 Compliance	211
Investment Protection When Migrating or Upgrading to Intuity AUDIX Release 5	211
Avaya's Statement of Direction	213
Avaya Toll Fraud Crisis Intervention	214
Avaya Corporate Security	214

About This Topic Guide

Overview

This Topic Guide includes information relating to a specific portion of the Intuity AUDIX system documentation. It is intended to provide a printable guide for use when the online system is not readily available.

Note:

The online version is the primary documentation delivery. Whenever possible, the online version should be used.

Navigating This Topic Guide

This Topic Guide contains the following navigation aids:

- Table of Contents
- Index
- Underlined text

Table of Contents

The Table of Contents, located at the beginning of the Topic Guide, lists the high-level information contained within the guide.

Index

The Index, located at the end of the Topic Guide, alphabetically lists all of the information contained within the guide.

Underlined Text

Some of the text in this Topic Guide is underlined. In the online format, this underlined text provides a link to the related information. The majority of this related information has been included in this Topic Guide. If you see underlined text when you are using a print copy of this guide, use the Table of Contents or Index to locate the related information.

Note:

The online version is the primary documentation delivery. Some of the related information might not be included in this Topic Guide. Whenever possible, the online version should be used.

This Topic Guide was intended to be printed. While some of the underlined text enables you to click to access related information, most of the underlined text is not functional. If you see underlined text that you want to learn more about, check the online version Table of Contents or Index to locate the information.

What's New in Release 5.1

Intuity AUDIX Release 5.1 includes most of the same end-user functionality as was provided in Release 5, and offers the following new or existing enhanced capabilities. For information of what was new in Release 5, see [What's New in Release 5](#).

Here's a list of what's new:

- Support for New Magneto-Optical (MO) Backup and Restore Drive and Media (page 2)
- Support for 7-digit Dial Plans (page 2)
- Customers Can Now Perform Software Updates (page 2)
- New Reboot Features and Capabilities (page 2)
- Increased System Capacities (page 2)
- Improved Accessibility (page 4)
- FAX Messaging now has Extended Dialing Capabilities (page 4)
- Enterprise Directory Gateway (page 5)
- Inband PBX Configuration Tool (page 5)
- Support for `www.messenger` (page 5)
- Support for Mailbox Manager (page 6)

Support for New Magneto-Optical (MO) Backup and Restore Drive and Media

Intuity AUDIX software now supports the Magneto-Optical (MO) disk cartridge drive and media, which will be used for backing up and restoring system data on MAP/40P and MAP/100P systems.

Support for 7-digit Dial Plans

Intuity AUDIX now supports dial plans up to 7 digits that are sent across a CLAN link. Previously, Intuity AUDIX systems were not able to support dial plans of more than 5-digits sent across a CLAN link.

Customers Can Now Perform Software Updates

Customers can now perform a software update of their Intuity AUDIX system. Previously, to update an Intuity AUDIX system to the latest release, a system administrator was required to order the software update and then schedule an appointment with a technician to have their system updated. Now, a system administrator can order the update software and perform the software update. Software update instructions accompany the software when it is shipped to the site.

New Reboot Features and Capabilities

Intuity AUDIX Release 5.1 now provides the ability to start a reboot from a console and then walk away until the reboot is complete or, if you have the ability to access your system remotely using a dial-up connection, to run a reboot from a remote location.

In addition, a new Reboot Information screen has been added to Intuity AUDIX systems to provide information about when the last reboot was performed, when the next reboot is recommended, and the number of days until the next recommended reboot.

For more information about the new reboot features and capabilities, see [Performing a Reboot](#) and [Checking the Reboot Schedule](#).

Increased System Capacities

Intuity AUDIX platform models support a wide range of customer configurations.

Table: Intuity AUDIX Increased System Capacity

Feature	Model 5	Model 40	Model 100
AUDIX Subscribers			
- Nominal [2]	800	3000	6000
- Max local without networking	15,000	15,000	20,000
- Max remote without networking [3]	1000/200,000	1000/200,000	20,000/500,000
Lodging Subscribers - Maximum	1500	4000	4000
Max Analog Voice/Fax ports	18	42	64
Max Analog Voice/Fax ports with Aria	18	30	42
Networking Ports:			
- Maximum Total	8	12	12
- Maximum ACCX	4	8	8
- Maximum TCP/IP	4	4	4
Nominal Voice/Networking ports	12/4	30/8 36/4 42/0	64/12
Disks, Minimum-Maximum	1	1-2	3-5
Hours of Storage			
- Non-RAID	175	600	NA
- RAID Level 1 (MAP/40P only)	NA	175	NA
- RAID Level 5 (MAP/100P only)	NA	NA	600-1400 [3]
Max IMAPI Sessions (used for IMAI, Message Manager, Aria TUI, ELA)	32	64	96
INTUITY Message Manager			
- Max number of clients	1000	2000	4000
- Max Simultaneous sessions	32	64	96
Trusted Servers			
- Max Servers Administered	32	64	96
- Max Simultaneous sessions	4	4	6
Text-to-speech sessions			
- On host	4	4	4
With SSP board	NA	30	30
Voice Director			
- Max NT boxes	8	8	8
- Max Sessions	16	16	16
- Max Names Database Size	20,000	20,000	20,000

- NOTES: [1] Capacities may not be simultaneously supported. Actual capacities depend upon engineering and performance considerations as defined in traffic and configuration guidelines. For example, a MAP/100P will not support 64 voice ports and 96 IMAPI sessions simultaneously. A MAP/100P may be configured with 64 voice ports and 44 IMAPI sessions. If the Aria TUI is added, a MAP/100P will support 36 voice ports and 32 Message Manager sessions.
- [2] The nominal number of subscribers supported is intended as an example and is for comparison only. Actual limits depend upon the type of usage and the system load.
- [3] Hours of storage with 3 disks = 600, 4 disks = 1000, 5 disks = 1400.

Extended Capacity Configurations

The Intuity AUDIX cannot be used in a Hi-CAP configuration to extend the maximum system capacity.

Improved Accessibility

Intuity AUDIX provides a variety of ways to access calls. Callers will use a Telephone User Interface (TUI). Subscribers will be able to use a TUI, and a GUI.

■ Audio

Caller TUI. The TUI for callers are administered on a per-system basis. The options are either the Intuity AUDIX TUI or the Aria TUI.

Subscriber TUI. The TUI used by a subscriber are administered on a per-mailbox basis. The options are the Intuity AUDIX TUI, and the Aria TUI.

■ Visual

Graphical User Interface (GUI). The Message Manager provides access from a desk top client to the mailbox. The [www.messenger](#) provides browser-based access to the mailbox.

FAX Messaging now has Extended Dialing Capabilities

FAX Messaging now has a extended capabilities. In previous releases, fax destinations were limited to 10 digit addresses to send faxes to domestic locations. This extended dialing increases the digit address, and benefits customers with subscriber communities who deliver faxes to international locations. In addition, it provides strong administrative controls to regulate the delivery of faxes to domestic and international destinations. See [Fax Extended Dialing](#) for more information.

Enterprise Directory Gateway

The Enterprise Directory Gateway (EDG) application is a converged voice and data directory-enabled middleware that provides a platform for simplifying information management. It uses the Lightweight Directory Access Protocol (LDAP) standard to enable Intuity AUDIX system data, providing real-time, integrated, directory-based read and write access to Intuity AUDIX data and other data derived from enterprise resources, such as corporate databases.

The Directory Notification Feature, available as part of Intuity AUDIX Release 5.1 software, is a collection of Intuity Messaging Application Programming Interface (IMAPI) enhancements that allow EDG to be informed when an administrator (or software using an administrator access key) adds, deletes, or changes attributes of one or more subscribers, including changes made to subscribers' Class of Service (COS). This feature is seamless to the subscriber.

For more information, see the Installation and Administration documentation that accompanies the EDG application.

Inband PBX Configuration Tool

Release 5.1 adds an additional administrative tool that is only used by Field technicians for providing services. This tool is used to administer inband parameters on voice mail systems using inband switch integration.

Support for `www.messenger`

The `www.messenger` is a browser-based client application that provides subscribers with a graphical user interface (GUI) to their mailboxes. Avaya Professional services installs the `www.messenger`, and is additional software that you can add to your system.

The `www.messenger` recommends a trusted server configuration for allowing the NT server to raise an alarm on the Intuity server when there are problems. The setup instructions require the IP address to be configured with the trusted server. The `www.messenger` is located on a separate NT server running much like Avaya Voice Director. This NT server contains a web application that communicates to the Intuity AUDIX server and client workstation through a browser.

For more information on `www.messenger`, see the documentation that is available with the application.

`www.messenger` allows subscribers to:

- Access their mailbox over the internet from a compatible web browser

- Create and playback voice messages via a telephone connection or via sound card on the desktop
- Retrieve multimedia messages from the messaging server
- Address messages from lists stored on the messaging server
- Administer lists stored on the messaging server
- Create and administer personal greetings and system options such as outcalling phone number.

Support for Mailbox Manager

Intuity AUDIX includes support for Mailbox Manager. Mailbox Manager for the Intuity AUDIX Message Server enhances the productivity of the system administrator by providing a single administrative tool for intuitive management of telecommunications systems.

Mailbox Manager is an optional Windows-based graphical user interface administration tool that is used for setting up subscribers on the server. It provides system administrators with an easy-to-use method of adding, deleting and modifying mailbox profiles and system distribution lists. For more information, see the documentation that is available with Mailbox Manager.

What's New in Release 5

The Intuity AUDIX system offers maintenance and performance enhancements.

Here's a list of what's new:

- Functionality (page 7)
- End-user (page 9)
- Improved Security Gateway (page 10)
- System Management (page 11)
- Administrative and System (page 12)

Functionality

The following provides a high-level overview of the system to familiarize you to the capabilities and functionality a Intuity AUDIX system can provide.

The system offers your customers enhanced flexibility to manage their voice messages, fax messages, and electronic mail (email) messages from their telephones or personal computers — any time, anywhere. Email messages can include file attachments, such as a spreadsheet or word-processing file.

The Intuity AUDIX system can be configured to fit the customer's needs on a system level as well as a user level. This scalability allows the Intuity AUDIX system to serve a 30-member firm located in a single office as well as a 500,000 employee multilocation corporation. The networking functionality of the Intuity AUDIX system connects everyone in a corporation, whether they are in the same office or across the country.

Intuity AUDIX system offers a single hardware platform running multiple software that provides advanced multimedia messaging capabilities to the end user. Software that reside on the single platform share computer resources such as hard disk space and maintenance utilities. Software integration allows capabilities to interact and share information in different databases. Primary software applications include voice and fax messaging as well as software that enables Intuity AUDIX to integrate with external email applications. These applications can be networked across multiple Intuity AUDIX systems.

Voice Messaging

The Intuity AUDIX voice messaging software applications make it possible to record and exchange voice messages with telephone or email recipients. The software contain stored voice prompts that guide subscribers in creating, sending, retrieving, answering, saving, or forwarding spoken messages. Voice messaging also answers calls for subscribers who are busy or unavailable. In addition to a personal answering service, the voice messaging features can also be used as a messenger to individuals or groups, an information service, an office receptionist, and as an automated attendant. For information on selected voice messaging features, see [Voice Messaging](#), [Message Manager](#), and [Voice Director](#).

FAX Messaging

FAX Messaging 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. Besides sending, receiving, and printing a fax over the telephone, subscribers can also forward a fax, annotate a fax with a voice message, send a fax, and broadcast a fax to multiple telephone subscribers, and otherwise handle a fax message just as they would a voice message. For additional information, see [FAX Messaging](#).

Email Messaging

Intuity AUDIX system provides the subscriber the ability to handle email text messages and email messages containing attached files (such as a spreadsheet or word-processing file) using Intuity AUDIX messaging capabilities. Subscribers can receive and send an email message over the telephone, forward it, annotate it with a voice message, and otherwise handle it as they would a voice message.

Additionally, Intuity AUDIX system offers *Text-to-Speech* and *Text-to-Fax*. These features enable the translation of email messages into spoken renderings that customers can listen to, or into textual/graphical renderings that customers can print, from the telephone interface.

Email messages can be sent throughout the Intuity AUDIX network to domains outside of AUDIX, such as a trusted server running a supported email application.

Note:

Text messages can also be sent and received within an AUDIX network using the optional feature Intuity Message Manager.

Networking Messages

Messaging is not limited to a single location. Using [Digital Networking](#) and [Audio Messaging Interchange Specification \(AMIS\) Analog Networking](#) software applications, up to 485 different locations can be networked. With Intuity AUDIX, customers can network using Transmission Control Protocol/Internet Protocol (TCP/IP) for connecting systems over a Local Area Network (LAN) with much higher throughput than with Digital Communications Protocol (DCP) or RS-232. TCP/IP also can be used to connect two machines directly, although RS-232 is generally used for this type of connection.

With Internet Messaging, subscribers can create, send, and receive messages to and from a recipient's Internet address. This expands the subscriber's ability to communicate with non-networked subscribers, including the millions of Internet users around the world.

End-user**Avaya Voice Director**

Intuity AUDIX system supports speech recognition with the Voice Director. Voice Director introduces Spoken Name Addressing and Name Dialing features.

Currently, a subscriber on the Intuity AUDIX system can address a voice mail message by using the touchtone keys on the telephone keypad to enter the extension or name of the recipient. Voice Director allows the subscriber to address a message using spoken input instead of a touchtone keypad. Spoken Name Addressing recognizes the spoken name and delivers the message to that person's mailbox. See [Spoken Name Addressing](#) for more information.

Name Dialing is available as a separate application on the Intuity AUDIX system. Name Dialing answers the telephone, allows the caller to speak a name, speaks the name back to the caller, and then transfers the call to the extension associated with the spoken name. See [Name Dialing](#) for more information.

ARIA User Interface

The Aria user interface is available with the Intuity AUDIX system. The Aria user interface includes the following capabilities:

- Multimedia Automated Attendant
- Extended Absence Greeting
- Mailbox Automatic Forward
- Enhanced Addressing Move
- System Distribution List
- Transfer Application

For more information, see [Aria User Interface on Intuity Feature Description](#).

Lightweight Directory Access Protocol

A Lightweight Directory Access Protocol (LDAP) defines a set of rules or formats required for the Internet or an intranet. Specifically, LDAP restricts the type of data that can be accessed by certain clients through the use of passwords. Implementing LDAP allows external clients and servers to query subscriber records and locate mailboxes residing on the servers.

LDAP is compatible with directory query functions provided by leading Internet service providers, including:

- Microsoft Outlook
- Netscape Communicator
- Eudora

Other client products include:

- Outlook Express
- Internet Explorer
- Groupwise

Announce Name on Transfer

In previous releases of Intuity AUDIX, callers transferring from a subscriber's mailbox or an automated attendant heard the message "*Please wait.*" With Intuity AUDIX, the caller now hears the spoken name of the subscriber he or she is transferring to. (In some cases, the caller hears the extension number instead of the subscriber's name.) This allows callers to verify the extension they are transferring to.

Remove Forced Annotation

Currently when a caller forwards a message to another subscriber, the caller must append or pre append a comment to the original message. Adding this comment is referred to as forced annotation. Each time a message is forwarded to another subscriber, an additional comment is required. This results in several annotations being appended to one message. Removing forced annotation eliminates the need to listen to those lengthy messages that have been forwarded several times with several annotations of "*Please listen to the attached message.*"

Improved Security Gateway

Access Security Gateway (ASG) is a security gateway added with the Intuity AUDIX system. ASG is a challenge-and-response technology that secures access into the system through the remote dial-in port. For a complete overview of ASG, see [Administering ASG Gateway](#).

Other security enhancements include:

- Automatic termination of login sessions after a predefined period of inactivity
- Suppression of the system name and display of a 10 character system identification code at the login prompt
- Provision of a standard security notification when the subscriber logs in to the system

System Management

Enhancements to the Subscriber Screen

The Intuity AUDIX Subscriber screen is enhanced with the addition of three new miscellaneous fields and one new email address field.

- The miscellaneous fields can contain subscriber information such as an employee ID number, the name of the department in which an employee works, or any other variable information. With the addition of these fields, the total number of miscellaneous fields increases to four.

Note:

The miscellaneous fields are limited to a maximum of 11 characters.

- The email address field is used to authorize Internet and intranet access.

Changes to Traffic Reports

Selected traffic reports are enhanced with the addition of tracking information for the voice, fax, text, and binary components. Currently, the traffic reports show all data as voice components. The new screens allow you to manage your system by differentiating the various types of message traffic. For additional information describing these reports, see [Overview of Traffic Reports](#).

DCS Enhancement

Intuity AUDIX provides messaging services for subscribers on multiple switches in a Distributed Communication System (DCS) configuration. Originally, the Intuity AUDIX supported a maximum of 20 switches labeled from 1 to 20. The Intuity AUDIX system continues to support a maximum of 20 switches, but they can now be labeled from 1 to 64. The new flexibility of switch numbers allows customers with large DCS configurations to provide messaging service for subscribers on all switches by installing multiple Intuity AUDIX systems. For example, Intuity AUDIX "A" could serve subscribers on switches 1 to 20, Intuity AUDIX "B" could serve subscribers on switches 21 to 40, and so on.

Administrative and System

The system administrator can use the advanced administrative features of a Intuity AUDIX system to expand subscriber functionality and capability and to enhance system security.

Fault-tolerance

Fault-tolerance is the ability of a system to respond gracefully to an unexpected hardware or software failure. To accommodate a fault-tolerant environment, Intuity AUDIX system incorporates RAID (Redundant Array of Independent Disks). Two levels of RAID are available:

- RAID Level 5

RAID Level 5 is a standard feature on all MAP/100P systems. RAID Level 5 offers a high degree of availability and reliability by minimizing the impact of disk failures. If a drive fails, the data on that disk is reconstructed from the data on the remaining drives. This reconstruction occurs while the system is running as if the drive had never failed.

At least three, and more typically five, drives are required for RAID Level 5.

- RAID Level 1

RAID Level 1 provides redundancy by writing all data to two or more drives, although only two drives are required. This level is commonly referred to as *mirroring*.

RAID Level 1 is offered for MAP/40P platforms. With RAID Level 1, drives are paired and mirrored. All data is 100% duplicated on an equivalent drive.

Improved Performance

A CD-ROM drive replaces the tape drive on all Intuity AUDIX platforms. This drive offers faster installation of software packages. With Intuity AUDIX system, multiple features and applications can reside on one CD-ROM.

A removable SCSI hard drive is available for the MAP/100P and the MAP/40P platforms. This drive allows for quicker backups and restores of large amounts of data. A tape drive is used for backups and restores of data for the MAP/5P and MAP/5PV3.

Other hardware changes include the addition of a PCI LAN card. This card is required for Message Manager, Internet Messaging on Intuity AUDIX, TCP/IP networking, the Enhanced List Application (ELA), and the new DEFINITY C-LAN switch integration. The PCI LAN card works with either a 10-MB or a 100-MB Ethernet LAN.

Improved System Availability

One of the objectives of Intuity AUDIX system is to improve the availability of the system. Before Intuity AUDIX system, activating

certain features or functions required a system restart or reboot. With Intuity AUDIX system, a system restart or reboot is no longer necessary. For example, AMIS Analog Networking is now a standard feature that is activated on every system. In addition, enabling voice ports on existing circuit cards, fax activation, digital networking, and TCP/IP administration does not require system restart.

System Architecture

A specialized, modular architecture of hardware and software allows applications on the system to remain largely independent yet share computer resources and exchange data. The system architecture illustrates the hierarchy of system components used to build the Intuity AUDIX system. See the Intuity AUDIX System Architecture (page 19).

Topics include:

- Platform Layers (page 15)
- Layer Interaction (page 16)
- Processing Layer (page 17)
- Service Layer (page 17)
- Applications Layer (page 18)

Platform Layers

The Intuity AUDIX platform consists of three layers that work together:

- Basic Processing Layer (page 17)

This layer contains resources such as:

- Hardware components such as the chassis, the Pentium CPU, and disk drives
- UnixWare operating system (OS)
- SCSI terminator and interface

■ Service Layer (page 17)

Three software server modules—networking, message processing, and switch interface—plus administration and maintenance make up this layer.

■ Applications Layer (page 18)

Multiple software applications are available. A few examples are listed below. A customer can select any or all of the following:

- Voice Messaging
- FAX Messaging
- Text-to-Speech
- Text-to-Fax
- Internet Messaging
- TCP/IP Networking
- Enhanced List Application (ELA)
- Message Manager
- Avaya Voice Director
- Call Accounting Software (CAS)
- Switch Integrations
- Intuity Lodging
- support for www.messenger
- Aria user interface

Layer Interaction

The elements of the system's two base layers, processing and service, are accessible to any of the applications. Placing common elements, such as switch integration and digital networking outside the applications and into the platform, allows them to be used by all current and future software applications. This increases application operating efficiency, optimizes computer resources, and establishes uniformity across applications.

Processing Layer

The *processing layer* contains utilities and tools that the two layers above it can use. These utilities include alarming, backup and restore utilities, logs, and the operation, administration, and maintenance interface.

The processing platform layer includes the Intuity AUDIX system's base hardware and software components, as follows:

- Multi-Application Platform (MAP) chassis
- CPU
- Random access memory (RAM)
- Disk drives
- Removable media (diskettes and tape or disk cartridge)
- UnixWare operating system

Service Layer

The *service layer* is similar to the processing platform in that it provides tools and utilities for the software applications, although it is more specific in its offerings. The ability to record speech and play it back, create fax and email messages, transfer messages through a digital network, and communicate with Avaya and non-Avaya switches are just a few of the items in this layer that the applications can use.

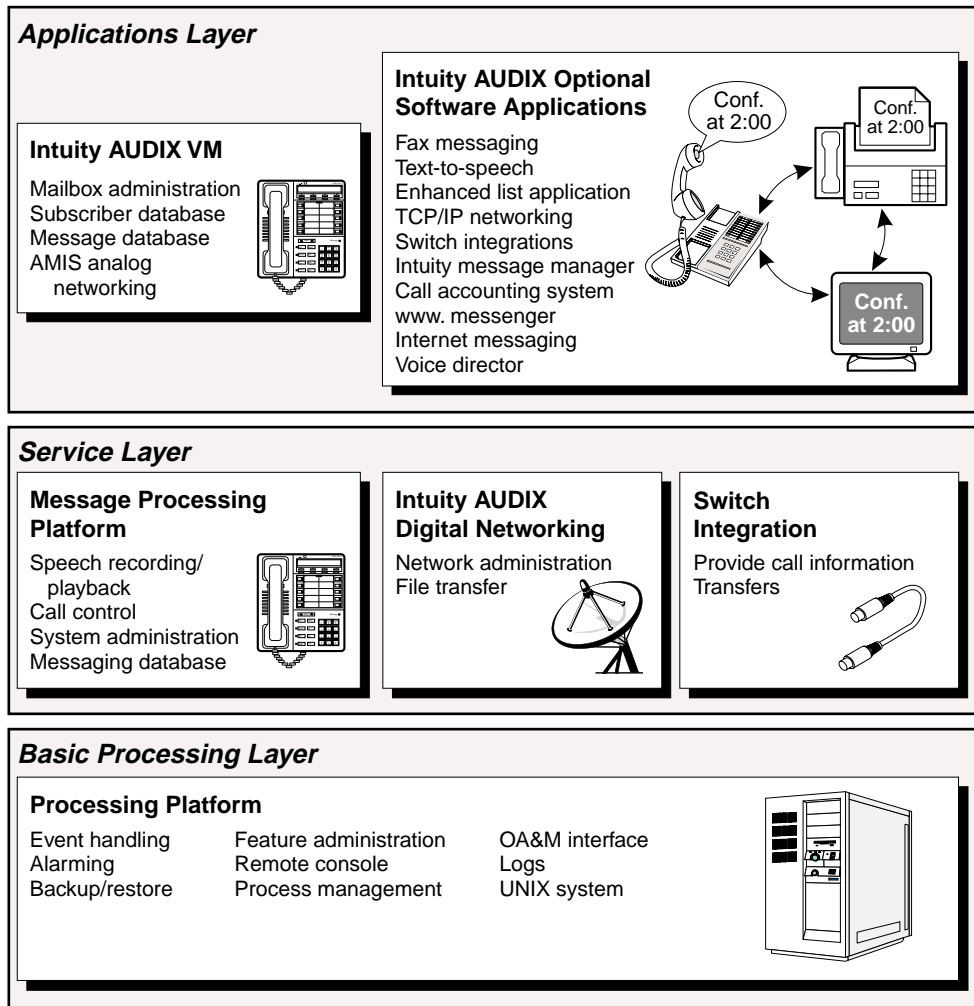
The service layer includes hardware and software components integral to the tools offered, including the:

- Voice card for processing speech
- Speech and signal processing (SSP) circuit card for support of various speech technologies
- LAN circuit card for connecting to a local area network
- DCIU circuit card for communicating with Data Communications Interface Unit (DCIU) switches
- Multi-port serial circuit card for connecting to modems, terminals, or switch integration devices
- VB-PC card for communicating with switches not maintained by Avaya
- System administration software for elements that span the platform, such as voice port administration

Applications Layer

The *applications layer* contains independent programs that meet a particular business need. These software applications, such as Voice Messaging, Internet Messaging, and FAX Messaging, rely heavily on the foundation established by the first two layers.

Figure: Intuity AUDIX System Architecture



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System Components and Capacities

The Platforms (MAPs), MAP/5PV3, MAP/40P, and MAP/100P, support the low-end, middle-range, and high-end hardware solutions for the Intuity AUDIX Release 5 system.

Note:

The MAP/5PV3 became available for Intuity AUDIX Release 5.01 and 5.1.

Differences among the platforms are defined in this section. [System Features Description](#) describes the components in detail.

This section provides a comparative analysis of the available platforms and the interactions between the various Intuity AUDIX components.

Topics include:

- [Platform Descriptions](#)
- [Circuit Cards](#)
- [Differences Among Platforms](#)
- [Software Components](#)

Platform Descriptions

Intuity AUDIX hardware includes the following:

- General Descriptions (page 23)
- Backplanes (page 26)
- Serial Ports and Parallel Port (page 26)
- Hard Disk Drives and Speech Storage (page 27)
- CD-ROM Drive (page 27)
- Removable Tape and Disk Cartridge Drives (page 27)
- Diskette Drive (page 27)
- Keyboard (page 27)
- Modems (page 28)
- Printer (page 28)
- Terminals (page 29)

General Descriptions

The Intuity system is offered on three different hardware platforms. While all platforms support the same system, they differ in the amount of caller traffic they can handle.

Note:

The MAP/5P, MAP/5PV3, MAP/40P and MAP/100P are not available for Release 5.01 or 5.1.

MAP/5P and MAP/5PV3

The MAP/5P and MAP/5PV3 support call traffic generated by 800 to 100,000 messaging subscribers and a maximum of 1,500 Lodging subscribers. It supports up to 18 analog voice/fax channels and up to eight networking channels. A combination of 12 analog voice/fax ports and four networking ports can be supported. Up to 32 trusted servers can be administered with a maximum of four simultaneous sessions. See MAP/5P (page 30).

The MAP/5P and MAP/5PV3 support 175 hours of storage. They also support up to 1,000 Intuity Message Manager clients with a maximum of 32 simultaneous sessions. Text-to-speech sessions are limited to four on the CPU.

The video controller for the MAP/5P and MAP/5PV3 support resides on the mother board. The MAP/5P and MAP/5PV3 contains three PCI slots, five ISA slots, and seven peripheral bays in a tower configuration.

The chassis is equipped with a cooling fan.

The following standard circuit cards occupy three of the eight slots:

- Remote maintenance circuit card
- Tip/ring voice circuit card
- Networking card

The following standard components occupy four of the seven bays:

- Diskette drive
- Removable tape cartridge drive
- CD drive
- Hard disk drive

The three remaining bays are empty.

MAP/40P

The MAP/40P supports call traffic generated by 3,000 to 100,000 messaging subscribers and a maximum of 4,000 Lodging subscribers. It supports up to 42 analog voice/fax channels and up to 12 networking channels. Channels are supported in the following combinations: 30 voice channels and eight networking channels, 36 voice channels and four networking channels, and 42 voice channels with zero networking channels. Up to 64 trusted servers can be administered with a maximum of four simultaneous sessions. See MAP/40P (page 31).

The MAP/40P supports 600 hours of storage. The MAP/40P can support up to 2,000 Intuity Message Manager clients with a maximum of 64 simultaneous sessions. Text-to-speech sessions are limited to four on the CPU. However, if an SSP board is installed, up to 30 sessions are supported.

The MAP/40P contains 10 ISA slots and 3 PCI slots. In addition, there is a faceplate location that supports an external SCSI connector. The MAP/40P is a tower configuration and contains five peripheral bays.

The MAP/40P is available with RAID Level 1 technology. RAID Level 1 technology provides disk mirroring on two duplicate disks simultaneously.

The chassis is equipped with standard cooling fans. The following base circuit cards of the MAP/40P occupy five of the 12 slots:

- CPU circuit card
- External connector circuit card
- Video controller circuit card
- Tip/ring circuit card
- Remote maintenance circuit card
- Networking Card

The following standard components occupy four of the five bays:

- Diskette drive
- Removable disk cartridge drive
- CD drive
- Hard disk drive

The fifth bay is available for an optional second disk for either additional hours of speech or for RAID.

MAP/100P

The MAP/100P supports call traffic generated by 6,000 to 100,000 messaging subscribers and a maximum of 4,000 Lodging subscribers. It supports up to 64 analog voice/fax channels and up to 12 networking channels. A combination of 64 analog voice/fax ports and 12 networking ports can be supported. Up to 96 trusted servers can be administered with a maximum of 6 simultaneous sessions. See MAP/100P (page 32).

The MAP/100P supports 1,440 hours of storage. The MAP/100P can support up to 4,000 Intuity Message Manager clients with a maximum of 96 simultaneous sessions. Text-to-speech sessions are limited to 4 on the CPU. However, if an SSP board is installed, up to 30 sessions are supported.

The MAP/100P is a 20-slot, 10-bay system in a tower configuration. It is available as either a rack-mount unit or free-standing deskside unit. The rack-mount unit fits into an industry standard 19-inch rack-mount cabinet.

The unit is equipped with a redundant power supply and contains five fans that provide forced-air cooling for the unit.

RAID Level 5 technology is standard on the MAP/100P. RAID Level 5 is a form of RAID in which data and redundancy information is spread across several physical disks, allowing data to be preserved. The system continues to be available in the event of a single disk failure.

The video controller for the MAP/100P resides on the mother board. The MAP/100P contains three PCI slots, five ISA slots, and seven peripheral bays in a tower configuration. The following base circuit cards of the MAP/100P occupy four of the 20 slots.

- P5 200-MHz CPU circuit card
- Remote maintenance circuit card
- Tip/ring voice circuit card
- Video controller circuit card

The following standard components occupy six of the 10 bays:

- Diskette drive
- Removable disk cartridge drive
- CD drive
- Three hard disk drives

The remaining four bays are available for optional hard disks.

Backplanes

The MAP/40P and the MAP/100P are passive backplane computers. One characteristic of a passive backplane computer is that the CPU is on a removable circuit card. The MAP/5P and the MAP/5PV3 have a system or mother board that contains the CPU and the video controller.

Serial Ports and Parallel Port

On the MAP/5P, the MAP/5PV3, the MAP/40P, and the MAP/100P, the CPU card has a single parallel port and 2 RS-232 serial ports. This single parallel port is most commonly used for the printer. Common configurations use the first serial port (COM1) for remote access or for connecting to switches through a switch integration device (SID). The second serial port (COM2) is usually reserved for remote maintenance. The MAP/5P system board also has a single parallel port and two RS-232 serial ports. The same common configurations apply.

Hard Disk Drives and Speech Storage

A portion of the first hard disk on each platform is reserved for non speech data storage, such as data for the UNIX operating system, the Intuity AUDIX system platform executables and data, and the Intuity AUDIX system software executables. This disk area is very important for proper Intuity system operations and cannot be changed or used for any other purposes.

The rest of the first hard disk can be used for storing messaging components such as voice messages, subscribers' personal greetings, and automated attendant voiced menus. On the MAP/40P and MAP/100P, additional hard disks can provide additional storage space.

[Comparison of Intuity System Platforms](#) provides a complete list of storage hours available for each platform and type of storage.

CD-ROM Drive

The MAP/5P, MAP/5PV3, MAP/40P, and MAP/100P are equipped with a CD-ROM drive. The CD-ROM drive is used for initial software installation.

Removable Tape and Disk Cartridge Drives

If your platform is a MAP/5P or MAP/5PV3, backups are done using a tape cartridge backup. If your platform is a MAP/40P or a MAP/100P, the backup is done using a disk cartridge backup. The drives are used for ongoing backups of the system and for storage of customer data.

Diskette Drive

The MAP/5P and MAP/5PV3, MAP/40P, and MAP/100P are equipped with a 3.5-inch, 1.44-MB diskette drive. The diskette drive is used for initial installation of software.

Keyboard

For local Intuity AUDIX system computer access, a standard 101-key keyboard is included in the base configuration for the hardware platforms.

Modems

Intuity AUDIX system configurations with Intuity AUDIX Digital Networking and remote access might require a modem. The Intuity AUDIX system includes as its primary modem the Paradyne Comsphere 3820, a high-speed, 9600-baud, full-duplex modem.

In addition to the primary modem, other modems are certified for use with Intuity AUDIX. The following table specifies all primary and certified modems for both platforms.

Table: Modems Supported by the Intuity AUDIX System

Modem	When Needed	Support Status
Paradyne Comsphere 3820	Required for <ul style="list-style-type: none">■ Low-speed RS-232C■ Asynchronous digital networking■ Remote terminal access	Primary
MPDM	May be required for Data Communications Equipment (DCIU) switches	Primary
202T modem	Required for Centrex (SMSI) connectivity to DMS-100	Primary
7400A data module	Required for remote terminal access	Certified

Printer

An optional printer is available with the Intuity AUDIX system for printing reports and screens. All platforms support the dot-matrix, 80-column parallel printers shown in the following table.

Table: Printers Supported by the Intuity AUDIX System

Printer	Support Status
NCR 6417	Primary
AT&T 570	Certified

Terminals

The Avaya 386 color SVGA monitor is recommended. The Intuity AUDIX system can also be administered remotely through the use of a modem and one of the terminals shown in the following table.

Table: Terminal Supported by the Intuity AUDIX System

Terminal	Support Status
Avaya 386	Primary
Avaya 4410 (for PROCOMM PLUS 4410 or Terranova emulation)	Certified
Avaya 513 (for Terranova emulation)	Certified
Avaya 715	Certified
Avaya 4425	Certified
vt100	Certified

Figure: MAP/5P

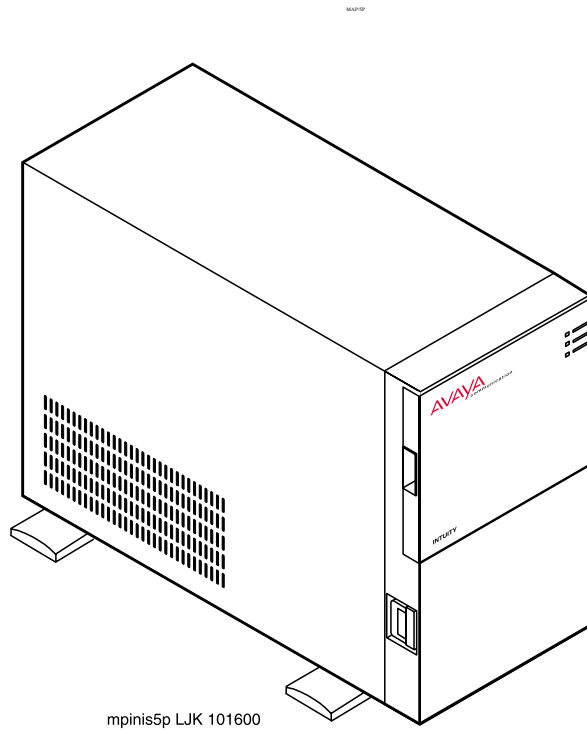


Figure: MAP/40P

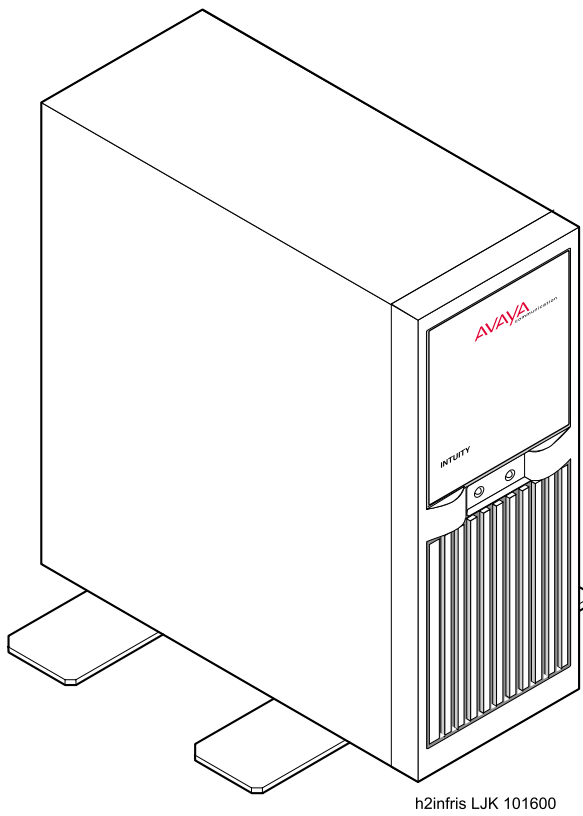
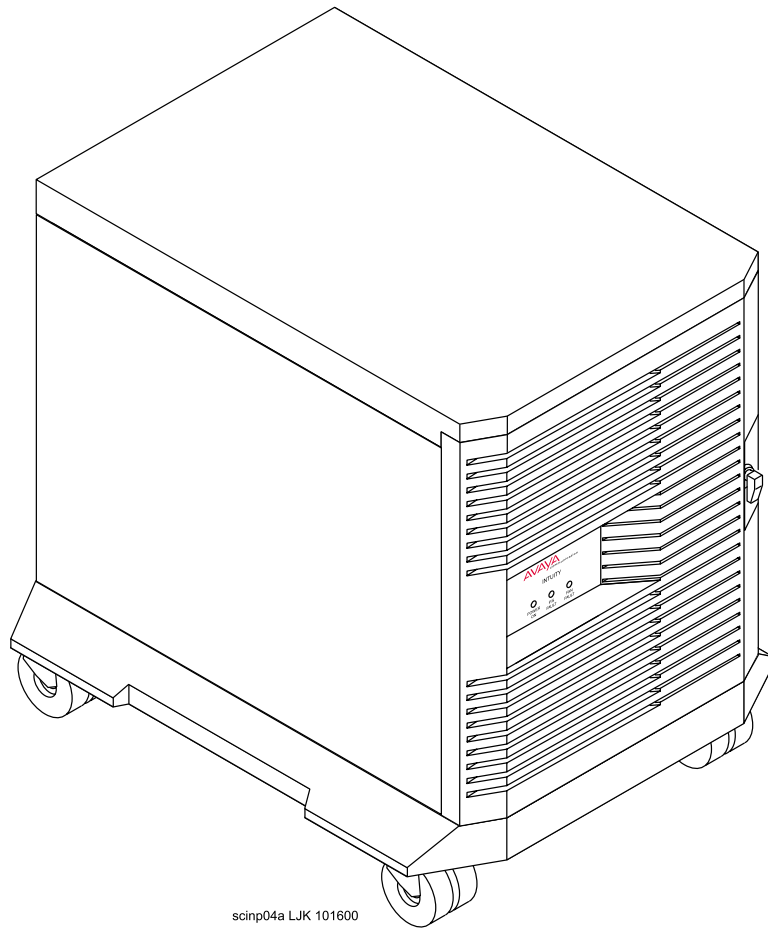


Figure: MAP/100P



Circuit Cards

The number of voices channels an Intuity AUDIX system supports depends on the type of switch integrated with the system. See [Switch Integration](#) for more information.

Intuity AUDIX provides a variety of circuit cards among the following:

- Tip/Ring Circuit Card (page 33)
- Video Controller Circuit Card (page 34)
- SCSI Controller Circuit Cards and External SCSI Connections (page 35)
- RAID Controller Circuit Card (page 35)
- Remote Maintenance Circuit Card (page 35)
- ACCX Circuit Card (page 35)
- Super Serial Circuit Card (page 37)
- Switch Interface Circuit Card (page 37)
- Ethernet LAN Circuit Card (page 37)
- SSP Circuit Card (page 37)

Tip/Ring Circuit Card

A tip/ring circuit card is required in all Intuity AUDIX system configurations. The following cards are supported:

- IVC6 (AYC10)
- IVC6A (AYC29)—supported for Australia

- Next Generation Tip/Ring (AYC30)

The tip/ring circuit card uses two 6-conductor modular cords. These cords provide three lines for telephone hookup.

Tip/ring Circuit Card Quantity

The number of tip/ring cards a customer needs depends upon expected messaging traffic and the Intuity AUDIX system configuration. The following software uses this card:

- Intuity AUDIX Voice Messaging
- Intuity FAX Messaging
- Text-to-Speech
- Lodging

Tip/ring circuit cards have six channels, but customers can purchase fewer voice channels on a right-to-use basis.

Standard Configurations

Standard configurations are as follows:

- The standard configuration for the MAP/5P, MAP/5PV3, and MAP/40P includes one tip/ring card with four ports enabled.
- The standard configuration for the MAP/100P includes two tip/ring cards with eight ports enabled.

Maximum Configurations

The following table summarizes the maximum voice channel and tip/ring card information. Note that it might not be possible to install the maximum number of tip/ring circuit cards, depending on the presence of other cards in the system.

Table: Maximum Voice Channels and Tip/Ring Cards per Platform

Platform	Voice Channels	Tip/ring Cards
MAP/5P and MAP/5PV3	18	3
MAP/40P	42	7
MAP/100P	64	11

Video Controller Circuit Card

The MAP/40P and the MAP/100P platforms contain a video controller circuit card as part of the standard configuration. The video controller circuit card allows the system to interface with a monitor.

The video controller for the MAP/5P and the MAP/5PV3 is located on the system mother board.

SCSI Controller Circuit Cards and External SCSI Connections

The MAP/5P and MAP/5PV3 has a PCI SCSI controller circuit card. On the MAP/5P an external SCSI connector is located on the SCSI controller circuit card faceplate.

The MAP/40P and the MAP/100P have the SCSI controller built into the CPU. On the MAP/40P, the external SCSI connector, which provides for SCSI device connection outside of the chassis, is in the rear of the tenth slot location. In the MAP/100P the external SCSI connector is located in peripheral bay 1.

RAID Controller Circuit Card

A MAP/40P or MAP/100P could have a RAID circuit card. RAID is standard on the MAP/100P systems. RAID is optional on the MAP/40P systems.

Remote Maintenance Circuit Card

The remote maintenance circuit card provides an interface for remote diagnostics of basic system components. The systems support the following remote maintenance circuit cards:

- AYC54 (with an internal modem)
- AYC55 (with serial port)

Note:

The remote maintenance circuit card might not be available in all locations. See your sales account representative for availability.

ACCX Circuit Card

The ACCX circuit card supports four networking channels and allows combinations of DCP and RS-232 in two-channel increments through the ACCX circuit card.

Vision the ACCX circuit card as having two halves; with each half containing two ports. When configuring the card, the customer must make parallel channel assignments to each half. In other words, each half can have one DCP port (two I-channels each) or two RS-232 channels.

Customers cannot assign three DCP ports and one RS-232 port or three RS-232 ports and one DCP port.

Channel Termination

Each ACCX card terminates four data channels in one of the following combinations:

- Two DCP ports, each providing two processor interface channels (I-channels) for data. Depending on the type of switch at the customer site, only one of the two I-channels of each DCP circuit may be available for use.
 - System 75 R1V3, DEFINITY G1 R1V4, and DEFINITY G3i, G3s, or G3vs Version 1 support only one I-channel.
 - DEFINITY G3i, G3s, and G3vs Version 2 can use both of the I-channels. The option must be installed and administered on the switch before Intuity system administration is performed. Contact a sales representative for more information on the I-channel option for the Digital Networking feature package.
 - DEFINITY G3r does not have a processor interface. The G3r relies on a packet gateway to route information.
- Four RS-232 ports
- One DCP line (two I-channels) and two RS-232 ports

Customers create various arrangements of DCP and RS-232 ports on the ACCX cards. For example, four ports can be configured as DCP and four as RS-232. Alternatively, six ports can be set to DCP and two to RS-232. The Sales and Design Support Center (SDSC) or the International Technical Assistance Center (ITAC), as appropriate, can help determine the best configuration for each customer.

Circuit Card Capacities

The following table summarizes the DCP and RS-232 capacities.

Table: Networking Capacities

Network Maximums	MAP/5P and MAP/5PV3	MAP/40P	MAP/100P
High-speed DCP ports	4	8	12
Low-speed RS-232 ports	4	8	12
Number of remote machines	500	500	500
Number of remote users	100,000	100,000	100,000

For other platform comparisons, see [Comparison of Intuity AUDIX System Platforms](#).

Super Serial Circuit Card

This is a new circuit card that replaces the multiport serial circuit card.

Switch Interface Circuit Card

In addition to connecting through the multiport serial circuit card, the system can be connected to a switch using a:

- DCIU circuit card
- Digital station interface circuit card

DCIU Circuit Card

The DCIU circuit card allows connection to switches such as the following:

- System 75
- System 85

Digital Station Interface Circuit Card

The digital station interface circuit card allows connection to switches such as the following:

- NORTEL MERIDIAN 1
- MERIDIAN SL-1

Ethernet LAN Circuit Card

The ethernet local area network (LAN) circuit card is a 10/100-MB per second circuit card that supports TCP/IP for use with the customer's LAN, Text-to-Speech, Enhanced List Application (ELA), Intuity Message Manager, and Intuity AUDIX Internet Messaging. For more information, see [System Features Description](#).

SSP Circuit Card

The speech and signal processor (SSP) circuit card provides for up to 30 text-to-speech channels. The SSP circuit card is available on the MAP40P and the MAP/100P configurations. For more information, see [System Features Description](#).

Comparison of Intuity AUDIX System Platforms

Intuity AUDIX provides the MAP/5P, MAP/5PV3, MAP/40P, and MAP/100P system platforms and they differ in several areas. Among these differences include:

- Weight and Space Considerations (page 39)
- Power Requirements (page 40)
- Platform Components and Capacities (page 40)

Weight and Space Considerations

The following table lists the approximate weight, size, and depth of the monitor and keyboard that are standard with any MAP. The size and weight of the maps are not standard across each Map, the MAP 5 is much smaller than the MAP 100

Note:

If additional hardware, such as hard disk drives or circuit cards, is added to the system, the actual weight of a platform can increase from 10% to 20%.

Table: Space Requirements for the MAP Monitor and Keyboard

Equipment	Weight	Height	Width	Depth
Monitor	15 lb (6.7 kg)	13.5 in. (34 cm)	13 in. (33 cm)	14.5 in. (37 cm)
Keyboard	5 lb (2.3 kg)	2.5 in. (6.4 cm)	19 in. (48 cm)	8 in. (20.5 cm)

Power Requirements

See [Power Requirements](#) for a comparison of power consumption and dissipation of the MAP/5P, MAP/5PV3, MAP/40P, and MAP/100P.

Platform Components and Capacities

The following table shows the differences between the hardware components and capacities of the different Intuity AUDIX platforms.

Table: Platform Comparison Table

Component	MAP/5P and MAP/5PV3	MAP/40P	MAP/100P
CPU	450-MHz Pentium	200-MHz Pentium	200-MHz Pentium
RAM (new systems)	128 MB 1 x 128 MB	128 MB 2 x 64 MB	128 MB 2 x 64 MB
Hard disks (maximum)	13 GB 1	4.5 GB 1 (2)	4.5 GB 3 (5)
Maximum number of bays available for optional hard disks	0	1	2
RAID	N/A	RAID Level 1	RAID Level 5

Table: Platform Comparison Table

Component	MAP/5P and MAP/5PV3	MAP/40P	MAP/100P
Hours of storage			
■ Non-RAID	175	600	N/A
■ RAID Level 1 (MAP/40P only)	N/A	175	N/A
■ RAID Level 5 (MAP/100P only)			
3 Disks (required)	N/A	N/A	600
4 Disks			1,000
5 Disks			1,400
IMAPI sessions (used for Message Manager, ARIA Interface, Internet Messaging, and ELA)	32	64	96
Trusted servers supported	32	64	96
Trusted servers simultaneous sessions	4	4	6
Text-to-Speech channels	4	4 30 with SSP	4 30 with SSP
Slots available for optional circuit cards	4	8	12
System serial ports	COM1–Available COM2–Dedicated unless MERLIN LEGEND integration	COM1–Available COM2–Dedicated unless MERLIN LEGEND integration	COM1–Available COM2–Dedicated unless MERLIN LEGEND integration
Maximum number of optional multiport cards	1	1	1
Available system serial port totals with optional multiport card	9	9	9
Maximum number of networking ports (non-TCP/IP)	4	8	12
Maximum number of optional TCP/IP networking channels	4	4	4
Maximum number of networked systems	500	500	500

Table: Platform Comparison Table

Component	MAP/5P and MAP/5PV3	MAP/40P	MAP/100P
Maximum number of IVC6 voice cards (no optional circuit cards present)	3	7	11
Maximum number of EICON cards	1	1	1
Digital networking channels	8	12	12
Maximum number of high-speed (DCP) networking channels	4	8	12
Maximum number of low-speed (RS232) networking channels	4	8	12
Nominal voice and networking ports	12/4	30/8 36/4 42/0	64/12
Maximum analog voice and fax ports	18	42	64
Maximum analog voice and fax ports with ARIA	18	30	42
Intuity AUDIX users	15,000	15,000	20,000
Remote users	100,000	100,000	100,000
Intuity Message Manager clients	1,000	2,000	4,000
Lodging subscribers - maximum	1,500	4,000	4,000
Voice Director			
■ Maximum Windows NT computers	8	8	8
■ Maximum sessions	16	16	16
■ Maximum names database size	20,000	20,000	20,000

Software Components

The Intuity AUDIX system has both standard and optional software components. Adding some optional software could involve installing the software from a diskette or CD-ROM and the installation of additional hardware, such as a hard disk drive. Other optional features come bundled as part of the standard software package and are activated by a remote support center once purchased. You can view both the standard and optional software components from the View Installed Software Results window. Among these include:

- Standard Software Components (page 43)
- Switch Integration Packages (page 43)
- UnixWare Applications (page 44)
- Optional Software (page 44)

Standard Software Components

All standard software is loaded on to the Intuity AUDIX system before the system is shipped to the customer.

Switch Integration Packages

The switch integration package is mandatory for the Intuity AUDIX system to work. However, you can choose from one of the following switch integration packages:

- Switch Integration Package for DCIU Switches
- Switch Integration Package for Integrations with a Digital Station Interface Circuit Card (VB-PC)

- Switch Integration Package for Inband and Serial Switches

UnixWare Applications

The following UNIX base-system software is standard:

- Networking Set
 - Remote Procedure Calls
 - Internet Utilities
 - Ethernet Hardware Support
 - Commands Networking Extension
- Basic Development Set
 - Software Packaging Tools
 - Optimizing C Compilation System
- Multiuser Set
 - User Upgrade

Optional Software

The Intuity AUDIX system accommodates a number of optional components beyond the base configuration software.

Some optional software is loaded on the system by CD-ROM or diskette. Others are remotely enabled by technicians.

The following optional software packages are available for Intuity AUDIX systems:

- FAX Messaging
- Internet Messaging
- Intuity Software Text-to-Speech
- Enhanced List Application (ELA)
- Intuity Lodging
- Intuity Lodging FAX Messaging
- Digital Networking
- Intuity RMB Integration Software

- www.messenger

System Features Description

The customer can select from various optional software and hardware components to build a Intuity AUDIX system. Some components are optional units, usually made up of hardware and software, which can be added to the base system. The primary software applications reside on the same platform. This allows users to share resources, such as hard disk space, the Remote Maintenance Board, and database information.

Intuity AUDIX system features related to administration, maintenance, and reliability are discussed in [Administration](#).

Topics include:

- [Messaging Overview](#)
- [Voice Messaging](#)
- [FAX Messaging](#)
- [Message Manager](#)
- [Internet Messaging](#)
- [Enhanced List Application](#)
- [Intuity Lodging and Lodging FAX Messaging](#)
- [Voice Director](#)

Messaging Concepts

Intuity AUDIX Messaging provides electronic mail (email) messaging and integration with other email systems. Intuity AUDIX is a true multimedia messaging platform. It integrates voice, fax, and email messages into a single system and offers subscribers enhanced flexibility to manage multimedia messages from their telephones or personal computers.

The systems can be scaled to meet customer needs on a system level, as well as a user level. This enables the Intuity AUDIX system to serve a 30-member firm as well as a 500,000-member, multi location corporation.

A few basic overview topics include:

- What Is a Message in a Intuity AUDIX System? (page 49)
- What Is a Mailbox? (page 50)
- Telephone Access (page 52)
- PC Access (page 53)

What Is a Message in a Intuity AUDIX System?

With the Intuity AUDIX system, a message is not limited to voice or fax media type components. A message can now contain up to four *media type* components, specifically:

- Voice
- Fax

- Text (created through a supported email application or Intuity Message Manager)
- File attachment (a software file, such as a spreadsheet or word processing file)

A message can consist of a total of four components, one component of each media type. For example, a sales manager might want to inform the distributed sales force of a new compensation plan. The details of the compensation plan are in the form of a text message created in Intuity Message Manager. Using Intuity AUDIX, the sales manager can send a message that consists of both voice and text components. The voice component of the message might be, "This message is going to all members of the Northeast Sales region. Congratulations on your excellent results last year. As of January 1, the compensation plan for new product sales will be changed. Please print the attached text message for detailed information." The text component of the message would then be used to specify the details.

When a message is sent, the Intuity AUDIX system adds descriptive information to the message consisting of the following information:

- Header

The header consists of the time and date of delivery, the type of message, and a listing of all message components. The system automatically creates a header for each message sent. If a message is addressed to more than one recipient, the system creates a header for each recipient.

- Message Body

The message body consists of the caller's spoken message or a voiced rendering of a text message, if using Text-to-Speech. In the case of a nondeliverable message, the message body consists of a standard system message.

What Is a Mailbox?

A mailbox is a storage area on a computer disk for messages, personal greetings, and mailing lists. All Intuity AUDIX subscribers automatically receive a mailbox when they are administered on the system. Mailboxes are divided into two sections, the incoming mailbox and the outgoing mailbox.

Each subscriber accesses his or her mailbox through a private password. After a subscriber logs in, the system voices the name of the subscriber (if recorded) and reports the number of new messages received (if any).

Incoming Mailbox

The incoming section of a mailbox receives messages from other subscribers, the Intuity AUDIX system, and callers redirected to the mailbox because no one answered the telephone. The subscriber can save, delete, reply to, forward, and in other ways manipulate these messages.

A subscriber's incoming messages fall into three categories:

- New

A message and header the subscriber has not yet listened to. The Message Waiting Indicator (MWI) on the subscriber's telephone turns on when a new message is present and turns off after the subscriber has listened to it.

- Unopened

A message whose header has been listened to, but not the message itself. The MWI does not stay on for this type of message.

- Old

A message the subscriber has listened to, but has not deleted.

Outgoing Mailbox

The outgoing section of a mailbox stores messages a subscriber creates, sends, or forwards. In most cases, these messages remain in the outgoing section until they are delivered. Outgoing messages are of the following types (listed in the default order in which subscribers review outgoing messages). The system administrator can change this order, if desired.

- Files

Messages that subscribers create and save in the outgoing section of a mailbox. Later they can access these messages to modify, address and send again, or delete.

- Undelivered

Messages that have not yet been sent (for example, those scheduled for delivery at a future time or date). Subscribers can review, change, or cancel messages and their addresses at any time before delivery.

- Nondeliverable

Messages that the system could not deliver. The system attempts to deliver a message up to 10 times (or the administered number

of times) then places the message in this category. Usually this indicates that the intended recipient's incoming mailbox is full, that the recipient's system cannot recognize or accept a message component (for example, the system is not fax-enabled), or that there were transmission problems (for example, with an AMIS analog line).

Messages defined as "nondeliverable" can be rescheduled for delivery with a new address, or altered to allow forwarding, if needed.

■ **Delivered**

Message headers that identify messages delivered but not yet listened to or that identify messages containing components that could not be delivered. The latter type of message header is an *Incomplete Delivery* header. For example, if a message contains more than the four components allowable (that is, a voice, fax, text, and file attachment), the additional components are not delivered, and the message header indicates that a component was not delivered.

■ **Accessed**

Message headers that identify messages that have been listened to. A message is considered accessed even if only the header has been listened to.

Telephone Access

All message components can be manipulated from the telephone. The basic nature of the telephone interface remains the same, regardless of the component media type. Normally, messages are created, addressed, delivered, received, and replied to or forwarded. The following table shows how these actions are implemented when messages are accessed through the telephone.

Table: Message Manipulation from the Telephone Interface

Action	Component			
	Voice	Fax	Text (created via Message Manager or an email application)	File Attachment
Create?	Yes	Yes (requires FAX Messaging)	No	No

Table: Message Manipulation from the Telephone Interface

Action	Component			
Address?	Yes	Yes	N/A	N/A
Receive?	<ul style="list-style-type: none"> ■ Hear Message header ■ Hear voice 	<ul style="list-style-type: none"> ■ Hear message header ■ Print to fax machine 	<ul style="list-style-type: none"> ■ Hear message header ■ Hear voiced rendering of message (requires Text-to-Speech) ■ Print to fax machine (requires FAX Messaging) 	<ul style="list-style-type: none"> ■ Hear message header
Reply/Forward?	Yes (can also include a fax annotation)	Yes (can also include a voice annotation)	Yes (can also include a voice annotation)	Yes (can also include a voice annotation)

In summary, voice and/or fax messages can be created using a telephone, but text messages and file attachments cannot. When retrieving messages, voice and text messages can be listened to, and the text message can be printed to a fax machine.

PC Access

Intuity AUDIX provides the following methods for managing messages from a PC:

- Intuity Message Manager
- Intuity Electronic Mail Integration
- [www.messenger](#) - this method needs additional hardware. See the documentation that is provided with the product.

Intuity Message Manager

Intuity Message Manager is a software application that runs on a Windows-based PC and connects with the Intuity AUDIX messaging system through a TCP/IP LAN. The program uses a graphical interface to enable subscribers to view a list of their messages on their personal computers. Subscribers can choose messages in any order and, by selecting icons using a mouse, perform all messaging tasks — everything that can be done with a telephone keypad, and more.

There is a difference between Intuity Message Manager and an email system, however Message Manager can be used to send messages to subscribers on the same Intuity AUDIX system or to networked and administered remote Intuity AUDIX systems. A supported email system, however, can be used to send messages to systems external to the Intuity AUDIX, for example, the Internet or other email systems. Intuity Message Manager also supports this if Intuity Internet Messaging is enabled. See [Intuity Message Manager: Overview](#) for a complete overview of the Intuity Message Manager.

Electronic Mail Integration

In many situations, a customer site may have a voice mail system and a separate email messaging system. To retrieve all messages, subscribers must access each system individually. Intuity AUDIX alleviates this problem with an optional feature known as Electronic Mail Integration. This optional feature provides a gateway through which the Intuity AUDIX system can send and receive messages across an email network.

As with Intuity Message Manager, subscribers can choose messages in any order and, by selecting icons using a mouse, perform all messaging tasks — everything that can be done with the telephone keypad. See [Intuity Internet Messaging: Overview](#) for a complete overview of the Intuity Internet Messaging feature.

Voice Messaging

In Intuity AUDIX system, voice messaging is provided by AUDIX software on the system. Subscribers can record a spoken message, address it, and then send it to other Intuity AUDIX voice messaging subscribers or to Internet email users (if Internet Messaging has been purchased for the system). These users can receive the message on their local machine or on networked Intuity AUDIX systems.

Subscribers instruct the Intuity AUDIX voice messaging system by pressing the keys on their touchtone telephones in response to detailed voice prompts from the system.

The Intuity AUDIX system software uses a high-quality voice-encoding algorithm known as Code-Excited Linear Prediction (CELP). CELP captures the nuances and subtle inflections of the human voice, which is an integral part of person-to-person communication.

Note:

Subscribers who have access to Intuity Message Manager can accomplish the same messaging functions from their PCs as described in [Internet Messaging](#).

Topics include:

- Voice Messaging Features (page 56)
- Voice Messaging Requirements (page 58)
- Voice Messaging Feature Operation (page 58)
- Voice Messaging Languages (page 60)
- Voice Messaging Planning Considerations (page 61)
- Voice Messaging Security (page 61)

Voice Messaging Features

Voice Messaging provides the customer with four primary features:

- Voice Messaging
- Call Answer
- Automated Attendant
- Bulletin Board

Voice Messaging

Voice Messaging is similar to an electronic mail system in that messages can be sent to others without needing to call the recipient directly. The message is then stored in the recipient's voice mailbox or PC (email or Message Manager) mailbox, if applicable. Recipients can access stored messages at their convenience.

Voice Messaging enables the subscriber to:

- Send messages to other AUDIX and email or Message Manager subscribers.
- Listen to messages received from other AUDIX and email or Message Manager subscribers.
- Forward messages received with comments attached.
- Reply to messages received from other AUDIX and email or Message Manager subscribers.
- Create mailing lists containing up to 250 recipients.

In addition to these basic capabilities, Voice Messaging also enables the subscriber to:

- Automatically place a call from Intuity AUDIX to the subscriber when there are messages waiting.
- Specify the telephone number to be called by Intuity AUDIX when messages are waiting (can be an office, home, cellular telephone, or pager).

Call Answer

Call Answer enables subscribers to:

- Have the AUDIX system answer incoming telephone calls.
- Create personal greetings that Intuity AUDIX voice messaging uses to answer incoming calls.

In addition to these basic capabilities, Call Answer also enables the subscriber to:

- Disable call answer so that a caller hears a greeting but cannot leave a message.
- Customize a set of standard greetings.
- Record up to nine different personal greetings using the Multiple Personal Greeting feature.
- Play a single greeting for all calls or assign various personal greetings to play in response to different types of calls, for example, internal and external, busy and no answer, or out-of-hours.

Automated Attendant

An automated attendant is an interactive telephone answering system. It answers incoming calls with a prerecorded announcement and routes the calls based on the caller's response to menus and prompts.

The system administrator sets up an automated attendant so that callers hear a menu of options. Callers then press the button on their telephone keypad that corresponds to the menu option they want, and the automated attendant executes the selected option. Those calling from rotary telephones are typically told that they can hold or call another number to speak with a live attendant.

An automated attendant menu system, or *menu tree*, can be designed to contain subordinate layers of menus or bulletin boards. These submenus, or *nested menus*, play additional options that can include a choice leading to another nested menu.

The voiced menu options that callers hear are actually personal greetings that the subscriber records for the automated attendant's extension. The text of the message can be changed just as easily as any personal greeting can. The Multiple Personal Greetings feature can be used to provide different menus and options for different types of callers.

If the Intuity AUDIX system has multiple language sets available, the menu options can include a choice that routes callers to a submenu voiced entirely in another language. The Multiple Personal Greetings feature can also be used to record menus in various languages. For more information, see [Automated Attendants and Bulletin Boards](#).

Bulletin Board

A bulletin board is an electronic message system that callers can access to hear messages. Callers dial the bulletin board telephone number, and the system answers and presents a recorded message. The major difference between a bulletin board and an automated attendant is that a bulletin board does not have an option to route to a live attendant. For more information, see [Automated Attendants and Bulletin Boards](#).

Voice Messaging Requirements

Voice Messaging is part of the base configuration of the Intuity AUDIX system. Therefore, with at least one voice card and switch integration, its requirements have already been met. The Voice Messaging software can accommodate more subscribers and messaging traffic through the addition of speech storage hours on the hard disk drives and through pairs of voice ports on voice cards. See [System Components and Capacities](#) for additional options.

Voice Messaging Feature Operation

With Voice Messaging — Voice Mail, Call Answer, Multimedia Automated Attendant, and Bulletin Board — use similar base functions to perform messaging operations. This section describes those operations.

Note:

The discussions of Voice Mail and Call Answer in this section assume that the person being called and the person retrieving messages are administered on the system as subscribers and are administered on the switch with primary call coverage to the Intuity AUDIX system.

Voice Mail Operation

Voice Mail allows subscribers to send and retrieve messages. Voice Mail operates in the following manner:

1. The subscriber dials the Intuity AUDIX system hunt group extension.
2. The switch locates a free analog line.
3. The call is transferred to the identified analog line.
4. The subscriber logs in using his or her password, listens to the messages in the mailbox, and hangs up.
5. The Intuity AUDIX system signals over the data link to turn off the Message Waiting Indicator (MWI).
6. The analog line is made available for another call to the AUDIX Voice Mail.

Call Answer Operation

Call Answer answers an incoming call when a dialed extension is busy or not answered.

Call Answer for Data Communications Interface unit (DCIU) Switches

See How Call Answer Works with a DCIU Integration (page 64).

For DCIU switches, the Call Answer operates in the following manner:

1. The subscriber's call coverage assignment within the switch sends the call to the Intuity AUDIX hunt group. The switch and software locate a free analog line (voice channel) within the hunt group and connect the call to the Intuity AUDIX.
2. At the same time, the switch sends information about the call, such as the extension number called, through the Intuity AUDIX system digital connection on the GPSC-AT/E switch integration card.
3. When the Intuity AUDIX system is connected over the analog line, it opens the appropriate mailbox (based on the data received over the digital link) and plays the subscriber's greeting.
4. When the caller hangs up, the Intuity AUDIX system closes the mailbox and sends a signal via the data link to activate the MWI.
5. The analog line is then made available for another call to the Intuity AUDIX software application.

Call Answer with a Switch Integration Device (SID)

See How Call Answer Works with a SID Integration (page 65).

For switches that are used with a Switch Integration Device (SID), the Call Answer feature operates in the following manner:

1. The call coverage assignment within the switch sends the call information to the SID.
2. The SID assembles call information from the switch into the Simplified Message Desk Interface (SMDI) protocol.
3. The SID finds and seizes an available analog line and sends call information to the switch integration software inside the Intuity AUDIX system.
4. The switch then transfers the call to the identified analog line.

Automated Attendant

Automated Attendant (automated attendant) answers incoming calls with a recorded announcement and routes calls based on a caller's response to menus and prompts. An automated attendant is administered on the Intuity AUDIX system as a special kind of user. It is a mailbox with unique capabilities to route calls using nested menus and commands.

1. The caller dials the automated attendant extension.
2. The automated attendant's extension call coverage assignment on the switch is administered to be forwarded immediately to the Intuity AUDIX system.

3. When the Intuity AUDIX system is contacted, it opens the automated attendant mailbox and plays the automated attendant's menu. The menu that is voiced is actually the personal greeting for that mailbox.
4. The actions each automated attendant performs when specific keys are pressed are administered by the system administrator. An automated attendant can be administered to transfer the caller to another extension or voice mailbox, play an informational message, or go to a subordinate menu of options.
5. When the caller hangs up or transfers to another extension, the Intuity AUDIX system closes the mailbox.
6. The analog line is then made available for another call to the Intuity AUDIX software application.

Just as with a regular subscriber's mailbox, multiple people can access the automated attendant at the same time.

Bulletin Board

The Bulletin Board feature answers incoming calls and plays recorded messages. Callers cannot leave messages or transfer to a live attendant.

1. The caller dials the bulletin board extension.
2. The bulletin board's extension call coverage assignment on the switch is administered to be forwarded immediately to the Intuity AUDIX system.
3. When the Intuity AUDIX system is contacted, it opens the bulletin board mailbox and plays the bulletin board's message. The message that is voiced is actually the personal greeting for that mailbox.
4. When the bulletin board is finished playing its message it disconnects the caller and the analog line is made available for another call to the AUDIX feature package.

Voice Messaging Languages

The AUDIX Voice Messaging application is provided with a standard American English announcement set. This announcement set can be replaced or augmented with one of an ever-expanding number of options, including non-English languages and Teletypewriter (TTY) for the hearing impaired. Account representatives have the most recent list.

Multilingual Support

With the optional multilingual feature, a subscriber can install up to nine languages on the Intuity AUDIX system and operate them simultaneously. Callers can interact with the AUDIX system using different languages.

For example, callers can follow voice prompts in languages that may or may not match the language of the people they are calling.

Subscribers can record personal greetings in two different languages. Any prompts are also in the selected languages.

Customized Announcements

Announcements are composed of sets of spoken instructions or voice prompts in the AUDIX Voice Messaging application. Some examples of announcements are:

- “To access your mailbox, press star R.”
- “To record messages, press 1. To get messages, press 2. To administer your personal greeting, press 3.”

A system administrator can change any of the announcements and customize them to suit individual business needs. This ability applies regardless of the language being used.

Voice Messaging Planning Considerations

To operate Voice Mail and Call Answer, the system requires:

- Hours of speech — provided by the hard disk drives and sold in 5-hour increments.
- Voice ports — provided by the IVC6 card interface with the voice channels. Each IVC6 card provides two ports with three logical channels per port.
- Switch link (for integration with all switches other than the MERLIN LEGEND) — provides the called number information from the switch to AUDIX, allowing AUDIX to respond appropriately to an incoming call.

The account representative works with the customer to determine the optimal configuration of software and hardware to meet the customer's present needs and future plans. See [System Components and Capacities](#) topic which contains information comparing system capacities and capabilities for when various features are running on the platform.

Voice Messaging Security

Customers are responsible for configuring their Intuity AUDIX system to minimize unauthorized use. Three major areas of concern apply to voice messaging:

- The switch
- Logins and passwords

- Transfers and outcalling

The following list briefly describes some topics to consider and actions to take to secure the system. Each of these and other points are covered in depth in the [Security Handbook](#). See [Security](#) topics which discusses security for all Intuity AUDIX features.

Switch Administration

In addition to restricting toll areas and creating lists of disallowed and allowed numbers, customers should consider implementing the following switch administration options when configuring an Intuity AUDIX system:

- Restrict outward dialing. When outcalling is used only to alert on-premise subscribers who do not have AUDIX MWIs on their telephones, assign an outward-restricted Class of Restriction (COR) to the AUDIX ports.
- Block use of Trunk Access Codes (TACs). Station-to-trunk restrictions can be assigned to disallow stations from dialing specific outside trunks. Callers then cannot transfer out of AUDIX to an outside facility using TACs.
- Assign low Facilities Restriction Levels (FRLs). The switch treats all the PBX ports used by voice mail systems as stations. Therefore, each voice mail port can be assigned a Class of Service (COS)/COR with an associated FRL. FRLs range from 0 to 7, with each number representing a different level of restriction. The higher the FRL number, the greater the calling privileges. For the purposes of AUDIX administration, all FRLs between AUDIX and the switch should be the same low FRL.

Automated Attendant

When an automated attendant answers a call, the caller is generally given several options. On some PBXs, button 9 is used to access the dial tone. If the system is not properly configured, a caller who presses 9 is passed back to the PBX. The PBX reacts to the 9 as a request for a dial tone. The hacker then enters the digits of any local, long-distance, or international telephone number, and the call is completed. To reduce the risk of this scenario occurring, customers should administer their switch as suggested in Switch Administration.

Voice Port Administration

Some measures that can minimize the security risk include:

- Restricting outward dialing. A voice port with outward restriction cannot make any outside calls unless an allowed number list is administered for specific area codes and/or exchanges.
- Restricting toll areas. Toll calls cannot be made from a voice port with toll restriction, but local calls can be made. However, toll restriction can prevent or limit outcalling and AMIS networking.

- Creating lists of disallowed and allowed numbers. When a voice port is unrestricted or has no toll restriction, a disallowed number list can be used to prevent calls to specific numbers or exchanges within all area codes. When a voice port is outward or toll restricted, an allowed number list allows calls to specific area codes or exchanges.
- Restricting AMIS networking number ranges. To increase security for AMIS analog networking, including the fax message delivery service, restrict the number ranges that can be used to address messages.
- Administering Transfer Security to restrict subscriber or digit ranges allowed for fax call delivery machines.

Logins and Passwords

Intuity AUDIX provides new levels of login and password security. These include new subscribers and system administrator login compliance guidelines, and trusted server login.

The system does not allow the use of the following types of passwords:

- The same number as the extension (for example, extension 34555 cannot use password 34555)
- Repeated digits (for example, 77777)
- Consecutive digits (for example, 12345)

You can administer the Intuity AUDIX system to “age” user passwords so that after the administered time has elapsed, users must select a new password.

- System administrator compliance guidelines. All of the user compliance guidelines apply, including password aging for both the system administrator (sa) and voice mail (vm) logins.
- Trusted server logins. You control trusted server access to the Intuity AUDIX server by administering a password that must, in turn, also be administered on the trusted server by that server’s administrator. Additionally, there is a secondary level of trusted server access security called the IMAPI password. While administration of this secondary password is optional, it is strongly recommended to help ensure system security.

Figure: How Call Answer Works with a DCIU Integration

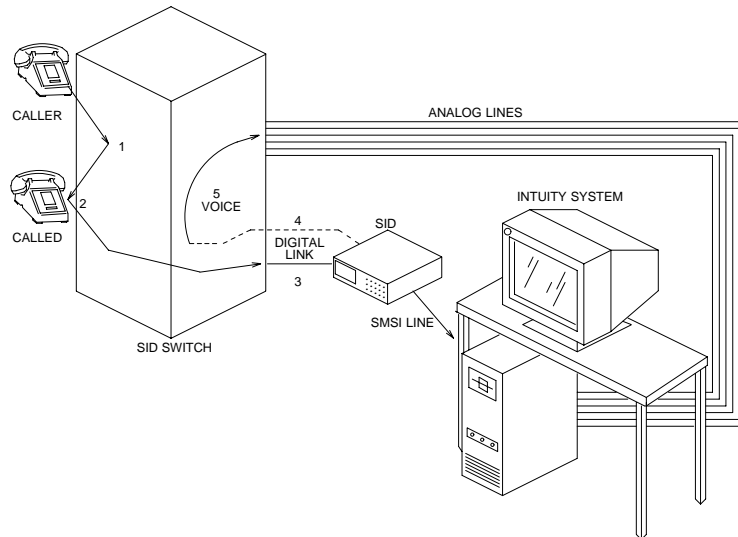
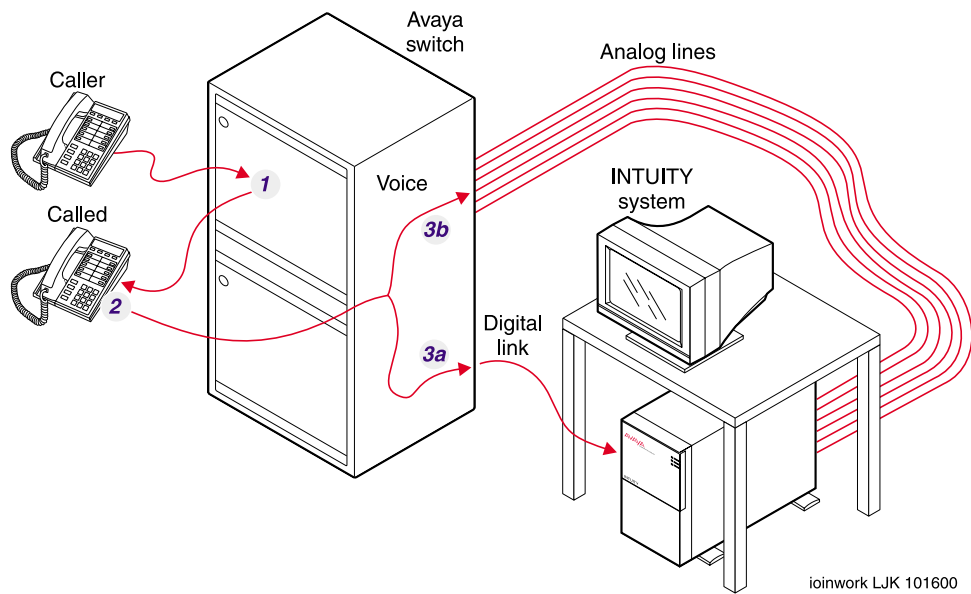


Figure: How Call Answer Works with a SID Integration



FAX Messaging

FAX Messaging 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 voice messaging.

Topics include:

- Capabilities (page 67)
- Requirements (page 69)
- Operation (page 70)
- Planning Considerations (page 71)

Capabilities

When you upgrade to or purchase Intuity AUDIX Release 5.1, fax messaging now includes; fax extended dialing. Fax extended dialing is optional.

Fax extended dialing capabilities include:

- Intuity AUDIX TUI interface for addressing fax destinations, for printing faxes from a mailbox, or for setting fax related mailbox options
- Failed fax message delivery notification
- GUI interface on Message Manager for addressing to a fax destination
- Web User Interface (WUI) interface on www.messenger for addressing to a Fax destination.

Installation of the enhanced fax delivery requires several changes to the Intuity AUDIX which affects the interface currently used by Intuity AUDIX subscribers. The most significant changes are in the TUI where a new procedure will be used to specify the destination numbers for printing and delivering faxes to fax destinations. Also, Subscribers encounter several new announcements to guide them through fax related TUI procedures.

In order to minimize the impact of the enhancement on our existing customer base, a provision has been made. This provision allows existing fax addressing methods to coexist with the enhanced capabilities provided in the release. Customers who upgrade to Release 5.1 can have the option to enable this feature when convenient.

Customers enjoy this new feature because of its simplified administration, addressing flexibility and administrative control over international and long distance fax calls.

Currently with fax messaging you can:

- Create and send a fax to an Intuity AUDIX, Message Manager subscriber, or email recipient or broadcast a fax to multiple recipients in the same manner as a voice message is sent.
- Receive faxes in their mailboxes.
- Print a fax from their mailboxes to a fax machine, a PC with a fax modem, a LAN printer, or a fax-enabled system such as another Intuity AUDIX system.
- Administer their mailboxes to scan incoming messages and automatically print a fax when it is received.
- Administer their mailboxes to automatically delete the fax message after it is printed.

Fax as a Secondary Extension

For subscribers who receive a high volume of faxes, the system administrator can create a phantom extension on the switch to which fax calls are directed. The second extension forwards to AUDIX so that the subscriber has *two* extensions but only *one* mailbox.

The primary extension is administered for call answer, personal greetings, and other messaging services. The secondary fax extension provides only a brief greeting that reveals the subscriber's name and invites the caller to leave a fax. Voice messages cannot be recorded at this secondary extension, nor can other subscribers address messages to it.

Guaranteed Fax

The Guaranteed Fax provides coverage for busy or out-of-service fax machines, such as a stand-alone fax machine or a fax modem on a PC. If the fax machine is unavailable, Guaranteed Fax redirects the fax to a different mailbox for temporary storage.

Guaranteed Fax can be administered as a secondary extension or as an ordinary subscriber.

- Secondary extension

When Guaranteed Fax is administered as a secondary fax extension, the mailbox is treated as a printer. Voice messages, file attachments, and email components of incoming calls are ignored. The fax data is recorded and the fax machine is tried repeatedly until the fax can be delivered. No other messaging features are available on a secondary fax extension.

- Ordinary subscriber

When Guaranteed Fax administered as an ordinary subscriber, the fax machine is treated as an Intuity AUDIX extension. For example, a fax can be sent directly to the fax machine's extension as a message to the Intuity AUDIX. On the other hand, voice messages sent to this mailbox (for example, as attachments to forwarded fax messages) remain in the mailbox.

Guaranteed Fax must be administered by a system administrator. For information on administering Guaranteed Fax, see [Administering Guaranteed Fax](#).

Requirements

Other than a fax machine (or a printer for subscribers with Message Manager or an integrated email system), no additional hardware or software is required to use fax messaging capabilities. Fax messaging is remotely enabled by technicians when a customer purchases it.

If a customer adds fax messaging to an existing Intuity AUDIX system, it is recommended that additional voice ports and hours of speech storage be purchased. The storage requirements of a fax page depends on the image content of the page as well as its resolution. A page containing graphics requires more space in a subscriber's mailbox than a page that does not contain graphics.

The following rule is generally useful when doing system planning for fax messaging:

- One standard-resolution textual fax page is equivalent to a voice message of from 20 to 30 seconds. One fine-resolution fax page is equivalent to a voice message of from 40 to 60 seconds.

To apply this rule to an actual business setting, consider a company with 100 employees, all administered on the same Intuity AUDIX system. If 40 of those employees receive five two-page standard-resolution faxes per day, the system has to be capable of storing an additional 130 to 200 hours of speech per day. Also, while some subscribers delete the fax message

after printing (indeed, subscribers can administer their mailboxes to print and delete faxes automatically), others will forward the fax message, complete with voice annotation.

Operation

The fax messaging enables a subscriber to control the creation, sending, receiving, and printing of faxes from the telephone. If a subscriber has Message Manager Release 2.0 or later or has purchased Internet Messaging to integrate AUDIX with an email application, faxes can also be viewed on a PC.

Instead of physically checking the fax machine to see if a fax has come in, subscribers can dial their AUDIX mailboxes or click an icon on their PC screens.

Fax Call Delivery

A fax message can be directed to any of the following locations:

- A stand-alone fax machine
- An individual PC fax modem
- A shared LAN multipoint fax server
- A fax port on a fax-enabled messaging system such as a fax-enabled Intuity AUDIX system at another location

Networking

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

Creating and Sending a Fax

Using the telephone keypad of a fax machine, subscribers can create and send messages containing just a fax component, or they can also include a voice component.

Subscribers can use the full mailing list and addressing capabilities of the messaging feature. Sending a fax to their AUDIX mailboxes, subscribers annotate fax messages with a voice message and broadcast the combined voice and fax message to a mailing list.

A fax message can be marked as priority and/or private, scheduled for later delivery, or stored in the subscribers Intuity AUDIX mailbox “file cabinet.”

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

Receiving a Fax

The Intuity AUDIX receives an incoming fax in a manner similar to the way it receives other calls. When a fax tone is received, the Intuity AUDIX records the incoming fax, sends it to the subscriber's mailbox, and notifies the subscriber, via the message waiting indicator, that a fax has been received.

Retrieving and Printing a Fax

Subscribers retrieve and print faxes through their telephones or PCs if their systems are equipped with Message Manager Release 2.0 or later or the Internet Messaging product integrated with an email application.

From the telephone, subscribers can print a fax to a default print destination or to another fax machine. Subscribers can also set the fax messaging capability to automatically print new faxes to a default print destination when faxes are received.

From their PCs, subscribers can view faxes and print faxes if the options are properly administered for their email application or from the Message Manager.

Planning Considerations

Fax messaging uses the same voice ports and message storage that the Intuity AUDIX system uses. Fax messaging increases the number of voice ports and the hours of speech that the system needs to operate effectively.

The account representative works with the customer to determine the optimal configuration of software and hardware to meet the customer's present needs and future plans. [System Components and Capacities](#) contains information comparing system capacities and capabilities when various capabilities are running on the platform.

Message Manager

Message Manager is a combination of communications systems that function as one software application from a PC. Subscribers with Message Manager can create, send, and receive compound messages containing multiple media types—voice, fax, text, or file attachments (attached software files).

Message Manager is a Windows-based graphical user interface (GUI) that allows the Intuity AUDIX system messages to be viewed on a PC screen through a local area network (LAN) or dial-up connection.

The visual aspects of Message Manager distinguishes it from other voice messaging products. Message Manager allows you to view who sent the message, a brief subject describing the message, the time and date the message was received, and the type of message received. This information helps subscribers prioritize how they access messages and develop mailing lists more easily.

Message Manager (Release 4.1 and later) is available in seven languages—English, French, Spanish, Brazilian Portuguese, German, Dutch, and Czech. Additional languages are being considered for future releases.

Topics include:

- Capabilities and Benefits (page 74)
- Requirements to Run Message Manager (page 74)
- Messaging Enhancements (page 77)
- Planning Considerations (page 80)

Capabilities and Benefits

Message Manager offers product capabilities that benefit subscribers in organizing their text, fax, or the messages.

Capabilities

Message Manager includes the following basic capabilities:

- Visual display of the Intuity AUDIX mailbox, with the ability to play or view any component, including voice through a simple GUI
- A Personal Phonebook for storing addresses and important information on a PC, independent of the Intuity AUDIX server
- Sound card support for playing and recording messages, greetings, and names on a PC
- Remote, off site access to your messages through a high-speed modem
- The ability to receive, create, and send text messages and attached files
- Message annotation
- Nonsequential message retrieval
- Advanced playback controls
- Archival of the Intuity AUDIX messages to the PC hard drive

Extended Capabilities

Customers have a choice of extended capabilities to:

- Add fax messaging capabilities, depending on the release and configuration of the Intuity AUDIX server. Subscribers can receive, forward, delete, print, or create fax messages.
- Send and receive email messages through Message Manager with Internet Messaging.

Note:

For a more detailed description on Message Manager features, see Messaging Enhancements (page 77).

Requirements to Run Message Manager

Message Manager requires client software and minimum hardware standards and a LAN connection to the Intuity AUDIX server.

**Software and
Hardware
Requirements**

The following hardware and software is necessary to support Message Manager.

- One of the following compatible operating systems:
 - Windows for Workgroups Version 3.11 (or higher) for Message Manager 4.3 or earlier
 - Windows NT Version 3.51, Version 4.0, or Windows 95 for Message Manager 4.5 or later
- Minimum of a 486, 66-MHz PC with 16 MB of RAM and 10 MB of available hard disk storage
- VGA or higher monitor (color recommended)
- LAN interface card
- Windows Sockets (WINSOCK.DLL) access to TCP/IP (either through a Netware Loadable Module or TCP/IP protocol stack)

For Message Manager 4.5 the following requirements necessary to support Message Manager:

Verify you have the following minimum hardware and software:

One of the following compatible operating systems:

- Windows NT Version 3.51, with Service Pack 5, Windows NT Version 4.0, or Windows 95
- Minimum of a 486, 66 MHz PC with 16 Mbytes of RAM and 19 Mbytes of available hard disk storage (assuming a Personal Address Book with 400 entries). Exceptions:
- The tutorial requires an additional 10 Mbytes of disk storage.
- Your operating system may recommend additional RAM for better performance (for example, 32 Mbytes of RAM for Windows NT).
- VGA or higher monitor (color recommended)
- LAN interface card
- Windows Sockets (WINSOCK.DLL) access to TCP/IP (either through a NetWare Loadable Module or TCP/IP protocol stack)
- Recommended: Mouse supported by Microsoft Windows
- Optional: Speakerphone, telephone headset, or a Microsoft Windows-compatible soundcard with speakers, microphone, or a computer headset for hands-free operation

LAN and the Intuity AUDIX Server Requirements

Requirements for the local area network (LAN) include:

- LAN configuration that provides TCP/IP transport between the Intuity AUDIX server and client PC (Ethernet networks such as the Novell Netware 3.11 operating system have been tested)
- Ethernet network with valid physical connection: 10BaseT twisted-pair for a DEFINITY AUDIX server, and either 10BaseT, 10Base2 (thin coax), or 10 Base5 (thick coax) for an Intuity AUDIX server
- A customer-provided router or other device to convert token-ring protocol to the required Ethernet protocol if Message Manager is to communicate with a token-ring network

Internet Messaging Requirements

Message Manager Release 4.3 and above supports Internet Messaging if the following requirements are met:

- Intuity AUDIX Release 4.2-5 or higher within the U.S. and Canada, or Release 4.3 or above for all countries
- Internet Messaging for Intuity AUDIX software and site license
- Two dedicated trusted servers
- NetCare (highly recommended) for consultation and implementation assistance

System Capacity

The following system capacities apply:

- *Up to 4000 clients can be registered at one time.* A client is registered when a subscriber starts the client application from a PC, which invokes a TCP/IP session. (Subscribers must exit the client application to “de-register” the client.)
- *Up to 96 Intuity AUDIX login sessions can be in progress at any one time,* depending on the Intuity platform used. An Intuity AUDIX login session starts when a subscriber logs in to an Intuity AUDIX mailbox from a PC. The Intuity AUDIX server terminates a login session if a session has been inactive for the amount of time set in the LAN Session Timeout field on the System-Parameters IMAPI-Options screen. However, the client registration is still active, and an Intuity AUDIX login session is established automatically again when the client starts using Intuity Message Manager.
- *As many audio sessions as voice ports purchased can be in progress at any one time.* This means a subscriber is logged in to the Intuity AUDIX (one of the up to 96 login sessions) and an audio session is active (for example, a subscriber is listening to a voice mail message). When the audio session is completed, Intuity AUDIX disconnects the voice port. The client application

remains one of the Intuity AUDIX login sessions until the inactivity time out takes effect or Message Manager is minimized or closed.

Messaging Enhancements

Every Message Manager release offers features that add to the efficiency of any work environment. These features are summarized in the section that follows.

New Message Notification

Subscribers of Message Manager receive a notification when a new message is received. This notification is either a small icon that appears in the toolbar or a pop-up window that appears on the PC screen.

From the main Message Manager screen, subscribers can view the:

- Media type component or components included in the message
- Sender of the message
- Subject of the message
- Time and date received
- Status of the message: priority, private, or partial delivery

Play or View a Message

After you select a folder, the messages stored within the folder are displayed. You can select one of the messages to play or to view its contents. The following explains the options available for playing or viewing a message.

- Voice

The system plays the message through an audio connection or the sound card, depending on the selected option.

- Fax

The Fax Viewer displays the fax on the screen. You can read the fax on the screen or print its contents.

- Text

The Text Viewer displays the message on the screen. You can read the text on the screen or print its contents. If you receive email messages through Message Manager, the message is displayed as a text component.

- Attached Files

You can view several types of files. Once you select a file from the list, you can start the program and view the file or you can export the file to your own computer.

Reply to or Forward a Message

After you play or view a message, you may want to add your comments and respond to the sender or mail it to another Intuity AUDIX subscriber.

- Reply to Sender

You can create a message to send back to the sender using automatic addressing. Include any or all of the original message components, plus any new components.

- Forward

You can add your comments to the message you received and then send them and the original message to another Intuity AUDIX subscriber or to an email address (if Internet Messaging is installed).

Send Messages to Multiple Recipients

You can create and send a message to one or several people, with one or more message components. The message is delivered as soon as possible or can be scheduled for a later delivery time.

Addressing

You can send the message to just one person, a list of people, or to someone who has email on a remote system.

Send Faxes

The optional fax software for Message Manager is used to create and send a new fax message. After the fax is sent, you can use the Outgoing Folder to check the status of the fax.

Fax from Other Applications

Although faxes can be stored in and sent from Message Manager, creating and sending a new fax is actually done from any other application that allows printing.

Create a Custom Fax Cover Page

You can use the Fax Cover Page Designer to add text or bitmap graphics to the fax cover page. You can also use the Designer to change the location and size of the Message Manager text display areas.

Send and Receive Email

If your server is set up for Internet Messaging, you can send and receive email messages. An email message is like any other Message Manager message except that you address it differently from the way you address mail sent internally.

Use the Outgoing Folder	<p>After a message is sent, you can check its delivery status by opening the Outgoing Folder. The Outgoing Folder lists all the messages you have sent, indicates the time they were sent, and confirm whether the recipient has received or accessed the message. In this folder, more delivery information is available by double-clicking a message or by highlighting a message and selecting the View Delivery Report option under the Activity pull-down menu.</p>
Build Personal Phonebook	<p>You can use the Personal Phonebook in Message Manager to store “cards” with the addresses of the Intuity AUDIX subscribers, as well as other numbers and notes. Once subscribers are added to the Phonebook, you can quickly add them to an address list. The Personal Phonebook is stored on your PC and can be used while working offline.</p>
Build Intuity AUDIX Lists	<p>With Intuity AUDIX lists, you can store the addresses of sets of people to whom you want to send messages all at once, such as a project team or a corporate department. You can quickly address a message to an entire address list. Intuity AUDIX lists are stored on the Intuity AUDIX server and are not available offline.</p>
Work Offline	<p>If you work away from the office, you may want to edit messages you have received or compose new messages, and then log in later and send them during a single telephone call. This saves toll charges because an Intuity AUDIX server connection is not required.</p>
Minimize or Lock Message Manager	<p>You can minimize Message Manager and still be notified of new messages throughout the day. Log in to Message Manager and minimize Message Manager. Later, you can restore the program to retrieve messages or to create and send new messages.</p> <p>For enhanced security, Message Manager has a Lock feature. When you select the icon, the application is minimized and requires your Intuity AUDIX password to be restored. Locking Message Manager prevents others from accessing your Intuity AUDIX mailbox. This capability is inactive while you work offline.</p>
Record Your Name or Greetings	<p>When you install Message Manager, you can use your name and personal greeting that were recorded through the Intuity AUDIX telephone interface. However, you can select a menu option to record your name or display a screen to record and manage greetings. The Intuity AUDIX server uses the choices you make in Message Manager for playing names or greetings to your callers.</p>
Outcalling	<p>If you are away from the office, Message Manager can still notify you of new Intuity AUDIX messages. Use the Outcalling feature to enter a telephone or pager number that the Intuity AUDIX server dials to notify you of new messages.</p>
Sound Card	<p>Message Manager uses an audio connection to your telephone to play or record voice messages or greetings. However, you can use your</p>

computer's sound card with speakers and a microphone instead. This is also the only way to play or record your voice messages while you work offline.

Planning Considerations

An account representative works with the customer to determine the optimal configuration of software and hardware to meet present needs and future plans.

Planning the integration of Message Manager with the Intuity AUDIX system can involve the customer's PC/LAN system administrator. Another important planning consideration is understanding that customers are responsible for installing Message Manager. This is true whether the installation is on a PC or on a server for access by subscribers over a LAN. The application can be installed from diskettes, from a CD, or from a LAN file server.

The following sections highlight some of the major considerations customers should be aware of in order to take full advantage of a multimedia messaging system, such as Message Manager.

Message Size

A multimedia message created using Message Manager can have a significant impact on the space allocated for subscriber mailboxes. The following table provides a comparison of message length to mailbox size.

Table: Message Manager and Intuity AUDIX Mailbox Size

Mailbox Size	Maximum Message Length
4800 sec (1:20 hr)	2.4 MB or 1200 sec (20 min)
3600 sec (1:00 hr)	1.8 MB or 900 sec (15 min)
2400 sec (0:40 hr)	1.2 MB or 600 sec (10 min)

LAN Impact

The Intuity AUDIX system is viewed as a server on a LAN. The PC/LAN system administrator at a customer's site should handle LAN installation, administration, and troubleshooting.

Use the information in the table for Impact of Message Manager on LAN Traffic (page 81) to calculate how much of the LAN traffic on a system is expected to be comprised of Message Manager messages (including messages with attached components) based on the messages a typical subscriber generates during a busy hour.

Table: Impact of Message Manager on LAN Traffic

Component Type	Packet Size Distribution	Message Manager (Packets per Hour)	Message Manager (Packets per Second)
Voice (without sound card)	<ul style="list-style-type: none"> 96% small packet messages (100 bytes) 4% large packet messages (1KB) 	102 (without sound card)	102 (packets/hour/subscriber) <i>times</i> number of subscribers <i>divided by</i> 3600 (seconds/hour)
Voice (with sound card)	<ul style="list-style-type: none"> 50% small packet messages (100 bytes) 50% large packet messages (1 KB) 	111 (with sound card)	111 (packets/hour/subscriber) <i>times</i> number of subscribers <i>divided by</i> 3600 (seconds/hour)
Fax	<ul style="list-style-type: none"> 33% small packet messages (100 bytes) 67% large packet messages (1 KB) 	20	20 (packets/hour/subscriber) <i>times</i> number of subscribers <i>divided by</i> 3600 (seconds/hour)
Message Manager text message	<ul style="list-style-type: none"> 33% small packet messages (100 bytes) 67% large packet messages (1 KB) 	25	25 (packets/hour/subscriber) <i>times</i> number of subscribers <i>divided by</i> 3600 (seconds/hour)

Voice Director

Voice Director has the following capabilities including:

- Voice Director Release 1 (page 83)
- Capabilities of Spoken Name Addressing and Name Dialing (page 84)
- Components of Spoken Name Addressing and Name Dialing (page 84)
- Hardware and Software Requirements (page 85)

Voice Director Release 1

Voice Director Release 1 introduced speech recognition to the Intuity AUDIX messaging products. This provides enhanced speech recognition capabilities, Spoken Name Addressing, and Name Dialing for the Intuity AUDIX system. Spoken Name Addressing and Name Dialing allow the caller to specify an Intuity AUDIX subscriber by speaking the subscriber's name rather than using touchtones that correspond to the extension or spell the name.

Spoken Name Addressing enables a subscriber to:

- Address a message.
- Transfer a call.
- Create a mailing list.

Currently, a subscriber on the Intuity AUDIX system can address a voice mail message by using the telephone touchtones and keying in the extension or name of the recipient. Voice Director allows the subscriber to address the message using spoken input instead of telephone touchtones.

Spoken Name Addressing recognizes the spoken name and delivers the message to that person's mailbox.

Name Dialing is available as a separate application on the Intuity AUDIX system. Name Dialing answers the telephone, allows the caller to speak a name, speaks the name back to the caller, and then transfers the call to the extension associated with the spoken name.

Capabilities of Spoken Name Addressing and Name Dialing

The following list provides several characteristics of Spoken Name Addressing and Name Dialing;

- After a name is spoken, the recorded name is voiced back to the caller for acceptance.
- Spoken Name Addressing uses the same mechanism as non-speech-enabled Intuity AUDIX systems if more than one name matches the spoken input.
- You have the ability to customize subscriber names using a pronunciation editor. For example, if a subscriber's name is William Smith, the customized Voice Director name could be Bill Smith.
- The Name Dialing application can work with Intuity AUDIX systems as well as non-Intuity AUDIX systems networked to the Intuity AUDIX system through an Intuity Interchange.

Components of Spoken Name Addressing and Name Dialing

The Voice Director speech recognition application runs on a Windows-based workstation. It is easy to install, configure, and administer.

The components that make up the Voice Director system include:

Name Dialing Application	Allows callers to speak names for call transfers
Spoken Name Addressing feature in the Intuity AUDIX Application	Allows callers to speak names when addressing, transferring calls, or creating mailing lists
Voice Director Names Database	Generates a list of names based on the Intuity AUDIX subscriber database that can be recognized by the system
Voice Director Administration Screens	Provides administration data to the Voice Director system

Voice Director Windows Application	Provides speech recognition for the Voice Director system
Voice Director Pronunciation Editor	Allows access to the Voice Director names database for customization of name pronunciation

These components are combined to form four distinct units:

Intuity AUDIX Platform	The Intuity AUDIX platform can be any Intuity AUDIX Release 5 system with an Intuity AUDIX voice messaging telephone user interface (TUI) and Name Dialing.
Voice Director Server	The Voice Director server is a Windows-based workstation. It is a separate system that hosts the large vocabulary speech recognition application.
Voice Director Pronunciation Editor	The Voice Director Pronunciation Editor is an application that can be loaded on any multimedia Windows-based platform, including Windows NT, Windows 95, and Windows 98. This tool is used for editing the pronunciation of names located in the Voice Director subscriber database.
The Local Area Network (LAN)	The local area network connects the Intuity AUDIX system with the Voice Director server.

Hardware and Software Requirements

The Avaya Voice Director Spoken Name Addressing and Name Dialing features use a client-server architecture to provide speech-enabled messaging solutions. The client is the messaging platform, in this case, the Intuity AUDIX system. The server is a Windows-based workstation that supports the Voice Director speech recognition feature.

The Voice Director configuration consists of:

- An Intuity AUDIX system

This system can be any Intuity AUDIX platform configuration.

- A Windows-based workstation

The customer provides and maintains this component.

- An Ethernet TCP/IP network card

This card connects the Windows workstation with the Intuity AUDIX system. A network card must be located in both the Intuity AUDIX machine and the Windows workstation.

The following tables summarize the minimum hardware and software requirements for the Voice Director server.

- Windows NT 4.0 Workstation Minimum Requirements for Two Channels of Speech Recognition and 5,000 Names or Less (page 86)
- Windows NT 4.0 Workstation Minimum Requirements for Four Channels of Speech Recognition and 5,000 Names or Less (page 87)
- Windows NT 4.0 Workstation Minimum Requirements for Six Channels of Speech Recognition and 20,000 Names or Less (page 87)
- Personal Computer Minimum Requirements (page 88) (when only the Pronunciation Editor is installed)

Note:

It is recommended that workstations configured as Voice Director servers be used exclusively for Voice Director. Loading additional programs impact system performance.

Table: Windows NT 4.0 Workstation Minimum Requirements for Two Channels of Speech Recognition and 5,000 Names or Less

Intuity AUDIX System	Voice Director Server	LAN
Hardware <ul style="list-style-type: none">■ An Intuity AUDIX MAP/5P, MAP/5PV3, MAP/40P, or MAP/100P Software <ul style="list-style-type: none">■ Intuity AUDIX Release 5 base system software	<ul style="list-style-type: none">■ Pentium II 300 MHZ■ 128-MB memory■ 10-MB LAN card■ 2-GB hard disk space■ Windows NT 4.0 Workstation operating system■ NT 4.0 Service Pack 4 or later■ NT 4.0 Workstation Resource Kit Version 4■ CD-ROM drive■ Sound card required if using the Pronunciation Editor; otherwise, not required	Ethernet TCP/IP network Note: It is recommended that the Intuity AUDIX and Voice Director systems be placed on the same LAN segment with no routers, repeaters, or bridges.

Table: Windows NT 4.0 Workstation Minimum Requirements for Four Channels of Speech Recognition and 5,000 Names or Less

Intuity AUDIX System	Voice Director Server	LAN
Hardware <ul style="list-style-type: none"> An Intuity AUDIX MAP/5P, MAP/5PV3, MAP/40P, or MAP/100P Software <ul style="list-style-type: none"> Intuity AUDIX release 5 base system software 	<ul style="list-style-type: none"> (1) Dual Pentium II 300 MHZ or (1) Dual Pentium II 400 MHZ 128 MB memory 10-MB LAN card 2 GB hard disk space Windows NT 4.0 Workstation operating system NT 4.0 Service Pack 4 or later NT 4.0 Workstation Resource Kit Version 4 CD-ROM drive Sound card required if using the Pronunciation Editor; otherwise, not require 	<p>Ethernet TCP/IP network</p> <p>Note: It is recommended that the Intuity AUDIX and Voice Director systems be placed on the same LAN segment with no routers, repeaters, or bridges.</p>

Table: Windows NT 4.0 Workstation Minimum Requirements for Six Channels of Speech Recognition and 20,000 Names or Less

Intuity AUDIX System	Voice Director Server	LAN
Hardware <ul style="list-style-type: none"> An Intuity AUDIX MAP/5P, MAP/5PV3, MAP/40P, or MAP/100P Software <ul style="list-style-type: none"> Intuity AUDIX release 5 base system software 	<ul style="list-style-type: none"> 633 MHZ Alpha 21164 CPU or better or Dual 450 MHZ Intel Pentium II CPU 128 MB memory 10-MB LAN card 2 GB hard disk space Windows NT 4.0 Workstation operating system NT 4.0 Service Pack 4 or later NT 4.0 Workstation Resource Kit Version 4 CD-ROM drive 	<p>Ethernet TCP/IP network</p> <p>Note: It is recommended that the Intuity AUDIX and Voice Director systems be placed on the same LAN segment with no routers, repeaters, or bridges.</p>

Note:

Alpha workstations do not support sound cards. To use the Pronunciation Editor, an additional Windows workstation needs to be added to the network.

If you are installing only the Pronunciation Editor, the personal computer requirements include:

Table: Personal Computer Minimum Requirements

- Pentium 133 MHZ
 - 32 MB memory
 - 60 MB hard disk space
 - Network interface card
 - TCP/IP with a 1.1-compatible Winsock
 - Windows NT 4.0, Windows 95, or Windows 98
 - VGA monitor
 - Windows-compatible mouse
 - Sound card
-

Internet Messaging

Internet Messaging for the Intuity AUDIX builds on the multimedia capabilities of Intuity AUDIX to provide exchange of voice, fax, text, and binary components over the Internet.

Topics include:

- Internet Messaging Features (page 89)
- What Internet Messaging Can Do for You (page 90)
- Web-based Administration (page 92)
- Planning (page 93)
- Security Issues (page 95)

Internet Messaging Features

Internet Messaging has the following characteristics:

- Internet Gateway

AUDIX subscribers gain an Internet email address and can send or receive messages over the Internet. Internet Messaging uses Extended Simple Mail Transport Protocol (ESMTP), a standard TCP/IP-based mail protocol.

- Mailbox access through POP3 clients

In addition to the telephone user interface (TUI) and Intuity Message Manager 4.3 and greater, subscribers can also select one of the currently available POP3 email client programs to check their messages. For example, Netscape Mail or Microsoft

Outlook can be used to receive and respond to messages through the Intuity AUDIX server.

- **Avaya Voice Player**

With this player, Internet email users can play and respond to messages received from Intuity AUDIX senders. If subscribers have a microphone, they can create voice messages directly on their personal computers.

- **Web browser administration of Internet Messaging**

Internet Messaging features can be updated or changed through a Web-based graphical user interface (GUI). This simplifies administration, since Web browsers can display visual information, link easily to other relevant screens, and be used from any location with a modem and Internet access.

What Internet Messaging Can Do for You

Internet Messaging can:

- Provide access for Intuity AUDIX subscribers to any of the more than 60 million email users worldwide through the Internet.
- Increase the number of choices that subscribers have to access messages, including telephone, Intuity Message Manager, and industry-standard email platforms.
- Save costs by allowing message transport through existing, shared Internet facilities.
- Simplify administration of the feature through a Web-based, graphical user interface.
- Simplify distribution of the Voice Player through an automatic email response system.

Sending and Receiving Email

Internet Messaging gives Intuity Message Manager and Post Office Protocol 3 (POP3) client subscribers full Internet email capabilities through the Intuity AUDIX. Multimedia messages can be sent from the Intuity AUDIX to any email address. The recipients can access these messages as multipart MIME messages using commercially-available email software. Voice components are played with the Voice Player (VP), which is distributed without charge and uses the same voice compression algorithm as the Intuity AUDIX system.

The following apply:

- Message Manager subscribers can send and receive all four component types to and from Internet email users, as with any other Intuity AUDIX destination. These component types include voice, fax, text, and file attachments.
- POP3 client subscribers can use their browser to access their Intuity AUDIX mailboxes. The LVP plays and records voice components, with the right computer hardware configuration. Graphics programs display fax files. Text and attached files are handled as with any other email.
- Non-Intuity AUDIX users access messages using the same message-rendering tools as POP3 client subscribers, except the messages are delivered through their own Internet service provider.

Email Access Through the Telephone

With Internet Messaging for Intuity AUDIX, subscribers can use the telephone to manage messages received at their AUDIX mailbox. The MWI is activated to alert the subscribers to the arrival of new messages.

The message can contain up to four media types, specifically voice, text, file attachments, and fax. However, message feature operation varies little from that of voice or fax message handling. From the telephone, subscribers can:

- Receive an email message that can contain up to four media type components.
- Listen to a voiced rendering of the text component (if the Intuity AUDIX Text-to-Speech feature is available).
- Print the text and/or fax component of an email message to a fax machine.
- Reply to an email message at the sender's address on the Intuity AUDIX network or to an Internet email address.

A message is treated as a single entity when accessed via a telephone. Thus, when subscribers access their mailboxes to listen to a message, all components that can be voiced are played in serial fashion. When subscribers play a message that contains a voice, a fax, a text, and a file attachment component, they will hear the voice component, followed by a voiced summary of the fax component, followed by the spoken translation of the text component (if enabled), followed by a voiced summary about the attached file.

Optional Email Features

Two features, if not already purchased for use with other Intuity AUDIX features, provide additional, useful access to message information.

- Text-to-Speech (TTS) conversion is an optional feature that enables subscribers to listen to a voiced rendering of email and

Intuity Message Manager text messages received in their AUDIX mailboxes.

Message components are rendered as follows:

- The subject line of an email message is read as part of the message header.
 - The body of the text message is voiced.
 - If a file attachment is included in the email message, that component is not voiced. The subscriber hears summary information regarding the size of the file.
 - Fax components are also summarized regarding the number of pages contained in the fax.
- Text-to-Fax (TTF) enables subscribers to print the text and/or fax component of an email message to a printer or fax machine. For the text component, the Intuity AUDIX system uses the Text-to-Fax feature to translate the component into printed form.

Messages are printed in plain text, that is, without formatting and special attributes such as bold type and tab settings.

Web-based Administration

Although it is possible to administer Internet Messaging through the Intuity AUDIX system console, a simpler graphical interface has been developed for you to use with a Web browser. This tool enables you to accomplish administration with these additional capabilities:

- A common interface across platforms
- Remote access from any location using a telephone line, a modem, and an Internet connection
- Graphical displays of data that show relationships between variables that cannot be derived through a textual interface
- Electronic links to and from additional screens or useful locations
- Context-sensitive Help, with online, interactive procedures and troubleshooting steps

The following browsers are known to function properly for Internet Messaging administration:

System	Netscape	Microsoft
Microsoft Windows	Netscape Navigator 3.01 or Communicator 4.04	Internet Explorer 3.0 or 4.0
Apple PowerMac	Netscape Navigator 3.01	
Sun Solaris	Netscape Navigator 3.01 or higher	

Planning

Before you install Internet Messaging, there are several things you should do:

- If you purchased an offer from Avaya Netcare Services, an appointment with a consultant should have been scheduled in advance to assist with the activation. Contact your account representative, if you did not contract with Netcare Services) to have Internet Messaging activated and administered.
- Either confirm the availability of or schedule the purchase of two additional trusted servers. Trusted servers are an additional, software-only security feature required for communication between systems. Internet Messaging requires two dedicated trusted servers. If they are not available, schedule their purchase and activation with your account representative.
- Check with your account representative to confirm whether a sufficient quantity of additional IMAPI sessions are available. IMAPI sessions are required for use with trusted servers.
- Determine whether a TCP/IP host address must be added.

Note:

If you currently use Intuity Message Manager, the TCP/IP host address has already been added.

- If you plan to enable Text-to-Speech (TTS) capability through the Telephone User Interface (TUI), schedule the purchase and activation of TTS with your account representative.
- Plan for security issues. Decisions must be made about how Internet Messaging is operated. Some of the decisions could require compromises that management might not want to make. See Security Issues (page 95) for more information.

- Use the [Internet Messaging Worksheets](#) to gather detailed information required during the activation and administration of Internet Messaging.

Email Message Size

Email messaging can have a significant impact on the size set for a subscriber's mailbox. An email message can be a short memo or can include attachments of software files of considerable size. If subscribers send fax and voice messages, planning is more difficult.

AUDIX converts all message components into seconds of space in the mailbox. The following table shows some typical average mailbox sizes and corresponding maximum email and maximum message length capacities.

Table: Email Messaging and AUDIX Mailbox Size

Mailbox Size	Maximum Email Size	Maximum Voice Message Length
2400 sec (0:40 hr)	1.2 MB	600 sec (10 min)
3600 sec (1:00 hr)	1.8 MB	900 sec (15 min)
4800 sec (1:20 hr)	2.4 MB	1200 sec (20 min)

LAN Impact

Use the following table to calculate how much of the LAN traffic on the system will be comprised of email messages (including email with attached components).

Table: LAN Impact of Email Messaging

Voice	Fax	Email
60 seconds = 13 2 1-KB packets	3 pages = 145 1-KB packets	5 KB = 5.5 1-KB packets ¹

1. A typical spreadsheet or word processing file is approximately 150 KB.

Subscriber Planning

Prepare subscribers by taking the following steps:

- Give the messaging trusted server name (established during Internet Messaging installation) to Intuity Message Manager subscribers for use in addressing their Internet-bound messages.
- Allow Intuity Message Manager subscribers to add email addresses to their personal address books or their Intuity AUDIX lists to simplify addressing.
- Determine whether to allow Intuity AUDIX subscribers to access messages in their Intuity AUDIX mailbox with a POP3 email program. The Intuity AUDIX system can send messages similar

to any mail gateway, but allowing this access presents certain security risks. See Security Issues (page 95) for more information.

- When a message is sent from an AUDIX subscriber to recipients in both AUDIX and the Internet, the AUDIX recipients are not listed on the Internet recipient's email To: list. Therefore, the email recipients do not know which AUDIX subscribers also received the message and cannot use the email application's Reply All function to send a reply to the AUDIX recipients of the original message.

Security Issues



WARNING:

Toll fraud is the theft of long distance service. When toll fraud occurs, your company is responsible for charges. See [Overview of Security](#) or the [BCS Products Security Handbook](#) for information on how to prevent toll fraud, or call the Avaya Technologies National Customer Care Center at 1-800-643-2353.

Using Internet Messaging and the Internet presents certain security issues. Your company is responsible for any damages that could arise as a result of the use of Internet Messaging. However, you can administer your system to minimize these risks. You need to be concerned with:

- Disabling POP3 Access

On the General Options and Settings screen, if the POP3 enabled? field is set to **Yes**, hackers could determine a subscriber's login name and password, and then commit toll fraud through the subscriber's mailbox. Use Internet Messaging only behind a corporate firewall and restrict external Internet access to the POP3 port.

If your company is concerned with subscriber login security, consider turning the POP3 interface off or exclusively using POP3 clients such as Qualcomm's Eudora client that support the APOP (encrypted password) login mechanism.

- Login requirement

On the Login Requirement screen, if the Require Administrators to Login? field is set to **No**, any subscriber with the correct URL can log in to the Intuity AUDIX system and change the Internet Messaging options. The default setting is **Yes**. Use the Administration interface only behind a corporate firewall.

- Viruses

The ease with which messages can be broadcast and transmitted over the Internet simplifies the distribution of computer viruses. Enact a policy to ensure that subscribers check incoming messages and files for viruses.

- Spoofing or Sending Email Under a False Name

Internet email addresses are not validated for identity. As a result, the identity of the message sender is not guaranteed. Warn your subscribers not to respond to messages from unverified sources, especially if the message contains requests for private information or any form of payment. The name of the machine that delivered a message to the Internet Messaging server can be checked by reading the message's header information.

Enhanced List Application

The Enhanced List Application (ELA) greatly expands the capability to deliver messages to large numbers of recipients. A single enhanced list can contain 1500 addresses. The system administrator can create up to 100 such lists.

Topics include:

- Features (page 97)
- Concepts (page 98)
- Implementing (page 99)
- Security Considerations (page 101)

Features

The Enhanced List Application (ELA) provides the following features:

- Up to 1500 recipients can be contained in an enhanced list (compared to 250 addresses in a standard Intuity AUDIX mailing list).
- Up to 100 enhanced lists can be created on an Intuity AUDIX machine.
- Changes in an enhanced list propagate to all lists that refer to the changed list.
- Access to enhanced lists is possible from anywhere within the Intuity AUDIX network (standard Intuity AUDIX mailing lists are only accessible to those subscribers with mailboxes on the same machine as the lists).

- Messages can be delivered to local and remote Intuity AUDIX, email, and remote AMIS pre administered subscribers.
- Messages can be delivered across domains from an email trusted server to Intuity AUDIX. This enables email subscribers to access the Enhanced Lists.

With ELA you can:

- Distribute messages to a targeted audience.

You can create a list of people to whom you send messages frequently. Then, you can send them all the same message by entering one enhanced list address.

- Centralize messages in one Intuity AUDIX mailbox.

First, select one office as your primary location. Then create an enhanced list at each secondary location that has as its only member the number of your primary office location. When a mailbox at a secondary location receives a message, ELA puts it into the mailbox for the primary office.

- Forward messages to support staff automatically.

If you frequently forward incoming messages, you can create an enhanced list mailbox that automatically forwards messages to other subscribers. These subscribers can review the messages and then respond to them as they normally would.

- Nest (or embed) enhanced lists.

A list with 1500 addresses can be a list contained within another list. So, a subscriber can record a message, address it to the parent enhanced list, and send it to nearly 150,000 people — just as easily as if the message were being sent to one person sitting at the next desk.

All subscribers administered in Intuity AUDIX (including email and remote subscribers) can send messages to the recipients in enhanced lists. Or, you can administer your system to allow only selected subscribers in your Intuity AUDIX network access to the enhanced lists.

Concepts

This section defines some terms that are used in the following discussion:

- A *trusted server* is a computer or a software application in a domain outside of Intuity AUDIX. It uses its own login and password to launch an Intuity messaging application programming interface (IMAPI) session and access Intuity

AUDIX mailboxes. The ELA software, acting as a trusted server, can access and manipulate an Intuity AUDIX message just as the Intuity AUDIX application does.

- For the purposes of ELA, a *domain* is a logical boundary defined by the application. Intuity AUDIX voice and fax mail messaging are one domain, and ELA is another domain. The two domains are linked to allow messages to be distributed between them.

Implementing

ELA is a powerful messaging tool that can distribute large quantities of messages. Consider the following items to ensure effective implementation and use of the Enhanced List Application.

Planning with Professional Services

ELA requires some solid planning to ensure your system makes effective use of the feature. You can contract with Professional Services to work with you to plan and administer ELA, or you can do the planning and administration yourself using ELA worksheets that your account representative provides.

Administering Intuity AUDIX for ELA

The tasks involved with administering Intuity AUDIX for ELA are listed below and described fully in [Administering Intuity AUDIX for ELA](#). The following steps are required to administer the ELA trusted server and functionality for Intuity AUDIX:

- Verify that ELA is enabled for your system.
- Increase the number of mailing lists Intuity AUDIX allows on the system.
- Define an ELA Class of Service.
- Set up ELA and shadow mailbox Community IDs.
- Administer TCP/IP on the Intuity AUDIX server.
- Set up IMAPI sessions for ELA server access to Intuity AUDIX.
- Define two ELA trusted servers to the Intuity AUDIX server and administer access (including the surrounding security requirements).

Administering ELA for Intuity AUDIX

Once the Intuity AUDIX system knows about the ELA trusted servers, you can do the initial administration of the ELA system. The tasks involved with administering ELA for Intuity AUDIX are listed below and described fully in [Administering ELA for Intuity AUDIX](#). To make ELA fully functional, you must:

- Define the Intuity AUDIX server for ELA, administer access, and select the shadow mailbox extension.

- Create enhanced lists.
- Add members to enhanced lists.
- Record a name for the enhanced lists (optional).
- Test your enhanced list setup.

**Scheduling ELA
Message Delivery**

We recommend that you schedule delivery for large enhanced lists during off-peak hours. This is because during peak traffic hours, your system processes other subscriber-generated messages. ELA intentionally slows delivery of messages to large enhanced lists during peak traffic so your system can continue to process these other messages.

**Hardware and
Software
Requirements**

ELA runs on the same machine as Intuity AUDIX. ELA must be installed on a Intuity AUDIX Release 4.2—5 or later machine. If your site has an earlier release, contact your service representative to obtain the necessary upgrade. ELA is not available for pre-Release 4 Intuity AUDIX systems.

**Local Area
Networks**

If your configuration includes a local area network, ELA implementation should involve your PC/LAN administrators to ensure that Intuity AUDIX and the network are not adversely affected. The amount of traffic on your LAN from ELA messages could increase if ELA sends messages for delivery to email or Message Manager recipients or to TCP/IP-networked remote machines. If none of these are valid for your site, ELA will not cause any increase in LAN traffic.

Remote Messages

If your site is networked, estimate the increase in the amount of remote traffic first by determining the percentage of current traffic that is remote and calculating the number of messages per minute that percentage represents. When ELA is actively sending messages, add that number of messages to the traffic estimate for remote message delivery.

Port Usage

Voice port usage increases as recipients retrieve messages sent by ELA. Plan for the increase with Professional Services when you purchase ELA. After installation, monitor your system to determine if your Grade of Service (GOS) falls below acceptable levels. If that happens frequently, particularly during the peak busy hour, contact your account representative to purchase more ports.

IMAPI Session Requirements

An IMAPI session is invoked when an email trusted server, Message Manager, Aria TUI, or the ELA trusted server needs to communicate with the Intuity AUDIX server. The Intuity AUDIX server must have a sufficient number of IMAPI sessions administered to provide adequate access for all IMAPI requests. Additionally, the ELA server must be registered as an Intuity AUDIX trusted server.

Shadow Mailbox

The *shadow mailbox* is a special mailbox that ELA uses to distribute messages. The use of a shadow mailbox prevents replies to ELA delivered messages from being sent back to the entire enhanced list. However, you can administer enhanced lists so that recipients can reply to the person who originally sent the message. The shadow mailbox must belong to a community that cannot receive messages.

For a complete description of this Intuity AUDIX feature, see [Overview of Enhanced List Application \(ELA\)](#).

Security Considerations

When securing a system that allows access from another domain, you must consider both internal and external security.

External Security

The ELA application runs as a trusted server. The trusted server makes requests of the Intuity AUDIX server via IMAPI to distribute messages to designated recipients. The trusted server can do anything to an ELA mailbox that an Intuity AUDIX can do.

Passwords

Two levels of security are available to administrators to prevent unauthorized access to the Intuity AUDIX from an external source system:

- Trusted server password

The trusted server password is administered on both the Intuity AUDIX server and on the trusted server. The trusted server must use this password when it connects to Intuity AUDIX.

- IMAPI password

The IMAPI password is an optional, secondary level of security used to prevent an unauthorized source external to Intuity AUDIX from starting an IMAPI session. It is *strongly recommend* that you take advantage of this extra protection.

If you choose to administer an IMAPI password, it is recommended that you change it on a regular basis, for example, monthly.

Note:

If you change the IMAPI password in Intuity AUDIX, all trusted servers must be administered with the new password.

Community Sending Restrictions

External security also involves administration to prevent access from an unauthorized source. These sources can include a subscriber who is administered to use email or remote AMIS analog networking. Users might send “mail bombs” to an enhanced list. Mail bombs are harassing messages that not only do not serve your business needs, but also impose unnecessary traffic on your system.

ELA mailboxes are no more vulnerable to unauthorized use than other voice mailboxes. However, the impact on system performance can be many times greater.

To prevent unauthorized access to an ELA mailbox from an external source such as email users or remote AMIS Analog networking users, you can place those subscribers in a community with sending restrictions.

Internal Security

Internal security focuses on preventing or recovering from damage if a breach occurs, for example, if a virus is transmitted in a message component such as an attached software file.

Intuity AUDIX allows for the transmission of two message components, text (originating from Message Manager or email) and binary file attachments (software files, such as a spreadsheet or word processing file). With these components come related security considerations, namely, the inadvertent delivery of a computer virus that could be embedded in a file attachment. This can occur in any system that supports the delivery of software files. While the AUDIX machine cannot be infected with viruses embedded in these software files, client machines can become infected when a user launches the application associated with the software file.



CAUTION:

ELA does not perform any virus detection. The customer should evaluate the security risks of file attachments carefully and make provisions for virus detection software on PCs running Message Manager or an email application supported by Intuity AUDIX.

At a minimum, advise your users to detach (not launch) file attachments and scan them for viruses before use.

Intuity Lodging and Lodging FAX Messaging

Intuity Lodging is a simple, easy to use voice message and call answer application designed for hotels and other lodging providers, including hospitals and colleges. Lodging is ideal for situations in which the same voice extension or mailbox needs to be turned on, turned off, and assigned to different people. The guest voice message interface is multilingual. Guests can choose a language from those installed in which they want to hear the system instructions spoken. Intuity Lodging also provides the ability to interface with a property management system (PMS) to activate, deactivate, and set preferences for a voice mailbox when guests check in or check out.

Lodging FAX Messaging provides fax call answer and retrieval as an option with the Lodging feature.

The Intuity Lodging application is recommended for situations in which the population is transient, requires a simplified interface, and does not require full messaging capabilities such as annotating and forwarding messages. It does not interact with other applications such as Intuity AUDIX Digital Networking. The Intuity AUDIX application, however, does interact with the other applications. Therefore, since the system can operate both voice messaging applications simultaneously, guests or temporary residents can be equipped with Lodging services while the staff is equipped with Intuity AUDIX services from the same Intuity system.

Topics include:

- Features (page 104)
- Requirements (page 105)
- Available Languages (page 106)

Features

The Intuity Lodging application provides:

- Call Answer (page 104)
- Voice Messaging (page 104)
- Optional PMS Interface (page 105)
- Simplified Guest Interface (page 105)
- Broadcast Messaging (page 105)

Call Answer

Call Answer provides an answering service for unanswered extensions. Callers reaching Call Answer can either record a message or press 0 to transfer to an operator or attendant. The system administrator establishes the extension numbers that callers will reach when they press 0. Callers can press 0 at any time to be transferred to an attendant or operator for assistance. If they stay on the line after leaving a message, record the maximum length message, or remain silent instead of speaking, the system automatically transfers the call to an attendant.

Voice Messaging

Voice messaging for the Intuity Lodging application consists of retrieving, playing, and optionally saving the messages. The customer administers the system to determine whether or not guests are permitted to save messages and if they need a password to retrieve them.

The Intuity Lodging application offers several ways for guests and temporary residents to retrieve their messages:

- From their rooms, guests can call the system directly. The system then plays any messages in the order established by the system administrator, that is, either the oldest or the newest message can be played first.
- From outside the facility or from the facility lobby, guests can call the system, enter a password, and retrieve their messages. The system must be configured and administered to support this retrieval.
- Guests can ask an attendant to connect them to the system or direct the attendant to retrieve messages for them.
- Attendants can restore the deleted messages for guests, provided that they receive the request prior to midnight of the day that the message was deleted. Attendants can also retrieve guest messages up to 24 hours after the guest has checked out.

Voice messaging for the Intuity Lodging application also includes text and fax notification. While the application does not store text and fax messages, it does store a tally. Attendants can enter the number of

messages and activate the message-waiting indicator to notify the guest of text and fax messages.

Optional PMS Interface

The Intuity Lodging application can operate with or without an active interface to a property management system (PMS). The optional interface to the PMS keeps the voice messaging database synchronized with the property's main registration system without intervention from an administrator. In configurations using a PMS interface, the Intuity system is the slave, and the PMS system is the master. The PMS terminal is the single point of control for both the PMS and the Lodging application for checking guests in and out, and for assigning preferences such as language and password.

Simplified Guest Interface

Intuity Lodging Release 1.1 and later allows guests to record customized greetings to which callers can listen before leaving a message. The standard system greeting is played if a guest does not record a personal greeting and in Release 1.0 application. System administrators can change the system greeting for both Release 1.0 and release 1.1 and later releases.

Broadcast Messaging

System administrators can use the Intuity Lodging application to create messages describing services, opportunities, or events and send the message to a selected group of guests or to all guests.

Requirements

Intuity Lodging requires:

- At least one tip/ring circuit card
- Hours of storage
- A switch integration package

Since the Intuity system uses universal ports on the tip/ring circuit cards, no specialized circuit cards are needed. Note, however, that older voice circuit cards from previous products cannot be migrated to the Intuity system.

The number of channels supported for Intuity Lodging depends on the size of the MAP. Each platform can be configured with a limited number

of tip/ring circuit cards. Each card can have six channels. See the following table for channel information.

Table: Hardware Platform Channel Information

Hardware Platform	Number of Tip/ring Circuit Cards	Number of Lodging Channels Supported
MAP/5P and MAP/5PV3	3	18
MAP/40P	7	42
MAP/100P	11	42

The administration on the switch or PBX depends upon whether or not both voice messaging software applications are installed on the Intuity system.

When Lodging is co-resident with Intuity AUDIX:

- All subscribers are placed in the same coverage path into the Intuity hunt group number.
- Each subscriber is entered in the database of only one application, Intuity AUDIX or Intuity Lodging.
- AUDIX subscribers call the Intuity hunt group to get their messages; Lodging subscribers call a dummy number that is forwarded to the hunt group number.

When Lodging is not co-resident with Intuity AUDIX:

- All guest telephones are placed in the coverage path of the Intuity main number.
- All guests call the main number to get their messages.

The Intuity system also requires a link to the PMS if the Lodging application will be interacting with it.

Available Languages

The following languages are available for the Intuity Lodging application:

- American English
- British English
- Canadian French
- Greek
- Japanese

- Mandarin Chinese
- Spanish
- Brazilian Portuguese

Contact your sales representative for additional information about available languages.

Networking

Networking provides the capability to transfer message components between customers located on different systems. These components include voice messages, faxes, text messages, and attachments (software files).

This section provides the basis on which to plan for networking a new Intuity AUDIX messaging system, including network capacities, connectivity, channel support, features, and operation.

Topics include:

- [Digital Networking](#)
- [AMIS Analog Networking](#)
- [TCP/IP Local Area Networking](#)

Digital Networking

Intuity AUDIX Digital Networking is an optional feature package that provides customers with the ability to exchange messages with customers on other Intuity and AUDIX systems. The remote system can be collocated with or geographically distant from the local Intuity system.

Topics include:

- Description (page 111)
- Requirements (page 112)
- Capacities (page 112)
- Connectivity (page 113)
- Channel Support (page 114)
- Features (page 115)
- Operation (page 117)

Description

Intuity AUDIX Digital Networking uses the proprietary AUDIX digital protocol to exchange messages, subscriber profiles, and message status information with other machines. The digital protocol uses a digital file format, similar to a data file transfer between two computer systems, to transmit the information. Digitally transmitted messages are communicated quickly and with excellent sound quality.

Digital networking provides customers with the ability to exchange:

- Voice, fax, text messages, and attached files from networked sources, including:

- Messages from subscribers on other Intuity AUDIX systems
- Message Manager text components
- Networked Internet Messaging subscribers
- Voice and fax messages with customers on Intuity AUDIX R3 or later systems
- Voice messages with customers on Intuity AUDIX, Definity AUDIX R3.2 or later, and AUDIX R1V3 or later systems (AUDIX systems)

Requirements

All Intuity platforms support Intuity AUDIX Digital Networking. Intuity AUDIX Digital Networking requires the base platform configuration. The following table provides the base platform configuration.

Table: Intuity AUDIX Digital Networking Requirements

Requirement	Notes
Networking card (ACCX or LAN)	—
UNIXware Networking Set	<ul style="list-style-type: none">■ Remote procedure calls■ Internet utilities■ Ethernet hardware support■ Commands Networking extension
One of the following modems or data modules (or others that can be certified in your area): AT&T Paradyne 3820	Required for RS-232 asynchronous connections
Intuity AUDIX Digital Networking software package	Must be purchased
Intuity Digital Networking	Documentation provided with the networking product

Capacities

The Intuity AUDIX Digital Networking feature supports a maximum of 485 remote machines. The system supports a maximum of 100,000 administered and nonadministered remote subscribers. The total number of networked systems and remote subscribers depends on the:

- Amount of available storage
- Available networking ports

■ Type of ports

The Intuity AUDIX system provides a maximum capacity of 64 ports with 12 channels of digital networking. The following table summarizes the Intuity AUDIX system capacities for a system using digital networking.

Table: Intuity System Capacities with Digital Networking

Component	MAP/5P	MAP/40P	MAP/100P
Voice channels (ports) available for voice messaging	18	42	64
Maximum networking channels (four channels per ACCX networking card)	8	12	12

Connectivity

The Intuity AUDIX Digital Networking feature package provides different types of network connections using the Digital Communication Protocol (DCP) or the Electronic Industries Association (EIA) RS-232 protocol or the TCP/IP protocol over an Ethernet connection to local and wide area TCP/IP networks. Data connections serve both local and remote networking, depending on the customer's system configuration.

Connection Types

The following table briefly describes the different types of network connections.

Table: Network Connections

Connection	Description
DCP mode 1	A connection using a data rate of 56 Kbps
DCP mode 3	A connection using a data rate of 64 Kbps
RS-232 low speed	An asynchronous RS-232 connection using data rates of 9.6 Kbps or 19.2 Kbps through a modem
TCP/IP LAN	A connection using the customer's LAN/WAN Note: The optional feature Enhanced List Application (ELA) requires the administration of a TCP/IP address but does not require a physical connection.

Connection Use

The type of data connection used depends on the facilities of the site and how the customer plans to connect with remote sites. The customer does not have to use the same type of data connection for all networking channels. Each channel can have a different type of data connection. For example, a customer may dedicate channel 1 for a local stacking arrangement. A customer could use Channel 3 as an RS-232 channel for

connecting to a remote machine that does not have a digital switch with DCP capabilities.

To use DCP mode 1, the Intuity AUDIX system must connect to a digital switch with DCP capabilities. These switches include the System 75, System 85, or DEFINITY Communication Systems Generic 1, 2, or 3.

To use DCP mode 3, the Intuity AUDIX system must connect to a digital switch with DCP capabilities. These switches include the System 75, System 85, or DEFINITY Communication Systems Generic 1, 2, or 3. Use DCP Mode 3 to create a stacked arrangement.

Use low-speed RS-232 connections when DCP switch facilities are not available or if a TCP/IP Intranet is unavailable.

Use either DCP (mode 1 or mode 3) or RS-232 to any Definity AUDIX R3.2 or AUDIX R1 system. These systems do not support TCP/IP networking.

Use TCP/IP to directly connect two or more machines when LAN/WAN facilities are available. The TCP/IP throughput is higher and more cost effective than DCP.

Channel Support

The Intuity AUDIX system allows combinations of DCP and RS-232 in two-channel increments through the ACCX circuit card. Each ACCX circuit card terminates four data channels in one of the following combinations. See Digital Networking Connectivity (DCP and RS-232) (page 118).

- Two DCP ports, each providing two Interface channels (I-channels) for data. Depending on the version of the switch the customer has, only one of the two I-channels of each DCP port can be used as shown in the following list:
 - System 75 R1V3, DEFINITY G1 R1V4, and DEFINITY G3i, G3s, or G3vs Version 1 only support one I-channel per DCP port
 - DEFINITY G3i, G3s, and G3vs Version 2 can use both of the I-channels. The option must be purchased, installed, and administered on the switch before Intuity system administration is performed. Contact your account representative for more information on the I-channel option for the Intuity AUDIX Digital Networking feature package.
- Four RS-232 ports.
- One DCP port (two I-channels) and two RS-232 ports.

- When using TCP/IP, an ACCX card can take the place of up to four TCP/IP channels, through the Ethernet LAN card. If no ACCX card is used, then all 12 networking channels can be configured as TCP/IP.

The Sales and Design Support Center (SDSC) or the International Technical Assistance Center (ITAC) works with the customer to help determine the best configuration.

Features

Subscribers who want to send Intuity AUDIX Digital Networking messages to recipients on administered remote systems can:

- Address their messages by name.

Note:

This feature applies *only* to administered remote recipients. *Administered* refers to remote subscribers that have been entered in the database of the local Intuity system either manually or through an automatic update.

- Include the names and telephone numbers of remote recipients in their personal mailing lists.

Note:

Nonadministered remote recipients can be included only by telephone number.

- Hear the spoken name of the person to whom they are addressing mail or are looking up in the directory.

Note:

If the administrator has not recorded these names or if the names have not been received in a remote update, subscribers hear only the remote mailbox ID.

- Use the names and number directory ([*] [*] [N]) to look up telephone numbers by name.
- Assign aliases to any remote recipients on systems administered for Intuity AUDIX Digital Networking. Administered remote recipients can be included by name or telephone number. Nonadministered remote recipients can be included by telephone number only.
- Use automatic addressing to reply to incoming messages.

Digital networking enhances AUDIX Messaging in these ways:

- Customers with business offices in more than one location, whether in the same building or in different cities, can exchange messages with all locations.
- Customers who exceed the capacity of one Intuity AUDIX system at a location can network multiple machines together to enable subscribers to exchange messages as if they were on the same machine.

The following message-exchange features can be used for messages exchanged between remote subscribers:

- The ability to address a message by entering a subscriber's name. This is called *name addressing*.
- The ability to play a recorded name, if a name is recorded for the remote subscriber, when a subscriber addresses a message to the remote subscriber or when the subscriber receives a message from the remote subscriber.
- The ability to forward messages to one subscriber or a group of subscribers, respond to messages, and create group mailing lists.

Note:

Mailing lists cannot be shared across the network, unless the optional feature Enhanced List Application (ELA) is purchased. For more information on ELA, see [System Features Description](#).

- The quality of the voice message received is the same as when it was recorded, no matter how many times the message is forwarded. This is true for voice messages exchanged between Intuity AUDIX systems and between Intuity AUDIX and DEFINITY AUDIX systems. Voice messages exchanged between Intuity AUDIX and AUDIX R1 systems use the AUDIX R1 voice messaging encoding. This type of encoding is not of as high a quality as that used by the Intuity AUDIX voice messaging system.
- Local and remote subscriber databases are updated automatically with the remote update feature.
- Customers with businesses that operate in different time zones can send or receive messages any time of day or night.
- All a digital networking subscriber needs to know to exchange messages with remote subscribers is the machine prefix and remote subscriber extension or, if using the name addressing feature, only the subscriber's name.
- Subscribers can exchange fax messages with Intuity AUDIX Release 3 and later systems that are enabled for fax.

- Subscribers can exchange text and/or file attachments with Intuity AUDIX Release 4 and later systems if both systems.

Operation

Before subscribers can exchange messages, the machine name, machine extension length, dial string, and starting and ending extensions must be administered for each machine.

Because an administrator sets up the Intuity AUDIX system with remote machine and subscriber information, all a subscriber needs to know to send a message to a remote subscriber is his or her name or machine prefix and extension.

Encoding Methods

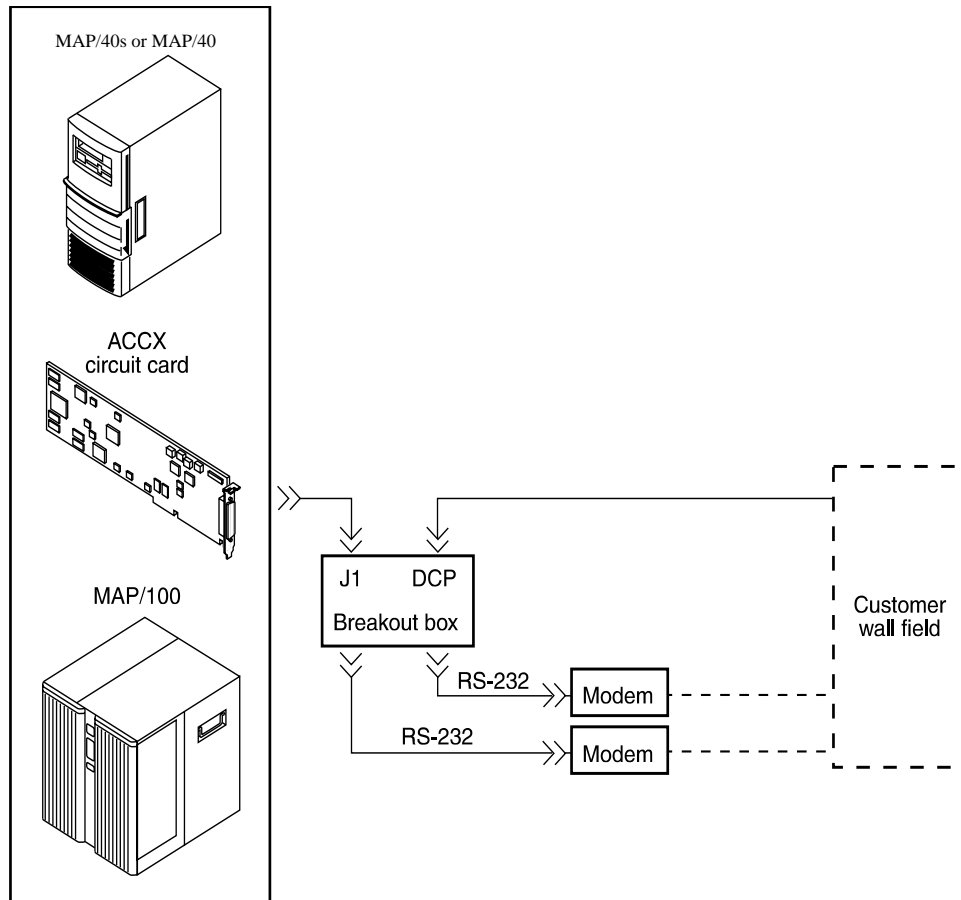
The Intuity AUDIX system can accommodate messages encoded using the code-excited linear prediction (CELP) encoding algorithm or the subband algorithm. Because AUDIX utilizes only the sub-band algorithm, outgoing messages transmitted from a Intuity system to an AUDIX system are converted from CELP to sub-band format as they are sent to the remote system. Incoming messages are stored in the format received, either CELP or subband. Transcoding is made possible by the ACCX circuit card and the Intuity AUDIX Digital Networking feature package software.

The following table shows the encoding methods for the Intuity AUDIX Digital Networking package.

Table: Encoding Methods for Intuity AUDIX Digital Networking

Voiced Entity	Path	Encoding Method
Voice messages	Local	CELP
Digitally networked voice messages	Intuity to AUDIX	Transcoded from CELP to SUB-BAND during transmission
	AUDIX to Intuity	SUB-BAND
	Intuity to Intuity	CELP
	AUDIX to AUDIX	SUB-BAND
AMIS analog networked voice messages	Intuity to Other	N/A

Figure: Digital Networking Connectivity (DCP and RS-232)



AMIS Analog Networking

Audio Messaging Interchange Specification (AMIS) analog networking is also available on the Intuity platform. For detailed information on AMIS analog networking, see AMIS Analog Networking, 585-300-512.

AMIS analog networking provides Intuity customers with the ability to exchange voice messages with people who use other systems with AMIS, including non-systems that use the AMIS standard.

Topics include:

- Description (page 119)
- Requirements (page 120)
- Connectivity (page 120)
- Features (page 120)
- Operation (page 121)

Description

The AMIS analog networking feature permits subscribers to exchange voice mail messages with other voice messaging systems that have AMIS analog networking capabilities.

The AMIS analog networking feature is especially useful to the following Intuity AUDIX customers:

- Intuity AUDIX system customers who want to exchange voice mail messages with DEFINITY AUDIX systems or with non-Avaya voice messaging systems that cannot be digitally networked. The Intuity AUDIX system supports both digital

networking and AMIS analog networking. Both types of networking can be used on the same machine.

- **DEFINITY AUDIX system** (prior to Release 3.2) customers who want to exchange voice mail messages with Intuity AUDIX systems, other DEFINITY AUDIX systems, or with non-Avaya voice messaging systems.

Requirements

The following table lists the required components for AMIS analog networking.

Table: AMIS Analog Networking Requirements

Component	Notes
Base platform configuration	—
Switch integration	—
Voice card (IVC6)	At least one is required. If adding AMIS to an existing configuration, consider adding more voice ports to accommodate increased traffic.
<i>AMIS Analog Networking, 585-300-512</i>	This book is provided with the networking product.

Connectivity

The AMIS analog networking feature package requires no additional hardware or connections beyond the standard configuration.

Features

AMIS analog networking provides for Message Delivery using preadministered or casual addressing. This section briefly describes these features. For more detailed information on the AMIS analog networking feature, see *AMIS Analog Networking, 585-300-512*.

Message Delivery

Message Delivery permits subscribers to send messages to any telephone that generates touchtone signals and has a number within the range of allowable numbers defined by the system administrator. This capability is automatically available when the AMIS analog networking capability is activated.

Preadministered and Casual Addressing

The system administrator can administer remote AMIS analog networking systems for one-step (*pre administered*) or two-step (*casual*) addressing. This section describes the features of AMIS analog networking when pre administered addressing is used.

For pre administered, one-step addressing, local subscribers typically enter the remote machine's prefix (if assigned), followed by the recipient's mailbox ID and the [#] key. However, subscribers who want to send AMIS analog networking messages to recipients on remote systems administered for one-step addressing can also:

- Address their messages by name only.

This feature applies to administered remote recipients *only*. *Administered* refers to remote subscribers who have been entered in the local Intuity AUDIX system's database.

- Include the names and telephone numbers of remote recipients in their personal mailing lists.
- Provide for unadministered remote recipients to be included by telephone number only.
- Hear the spoken name of the person to whom they are addressing mail or whose name they are looking up in the directory.

If the administrator has not recorded these names, subscribers hear only the remote mailbox ID.

- Use the names and number directory, [*] [*] [N], to look up telephone numbers by name.
- Assign aliases to any remote recipients on systems administered for AMIS analog networking. Administered remote recipients can be included by name or telephone number. Non administered remote recipients can be included only by telephone number.
- Use automatic addressing to respond to incoming messages.

Operation

AMIS analog networking transfers analog voice files, not digital files and communicates with other systems including Intuity AUDIX Release 1 or later, DEFINITY AUDIX prior to Release 3.2, and some non-Avaya systems. AMIS analog networking operates in the following manner:

1. A local subscriber records and addresses a message to a remote AMIS analog networking subscriber.
2. AMIS analog networking dials the number of the subscriber machine to which the message was addressed.

3. The AMIS analog networking system on the remote machine answers the call, exchanges protocols with the local machine, and allows the local AMIS Analog Networking machine to play the message.
4. The remote AMIS analog networking machine records the message in the mailbox of the subscriber to whom the message was addressed.
5. The remote subscriber can now listen to the message.

Voice ports are used for AMIS analog connections. Protocol information is sent between systems through touchtone signals, and the messages are played by the sending system and recorded by the receiving system. This industry standard for intervender networking is defined in the AUDIO Messaging Interchange Specification (AMIS) document. Intuity AUDIX supports AMIS analog networking connectivity with the following vendors:

- Centigram
- Comverse
- Digital Sound
- Northern Telecom
- Rolm

TCP/IP Local Area Networking

TCP/IP is supported for use with an Ethernet LAN circuit card. This card enables the Intuity AUDIX system to connect to a customer's LAN and support Windows-based applications such as Message Manager, Voice Director, Internet Messaging, and Enhanced List Application (ELA).

- Intuity Message Manager Release 2.2 or greater is an optional windows application that operates with Intuity AUDIX and Intuity FAX messaging.
- Intuity AUDIX supports integration with other email trusted servers when the Internet Messaging option is purchased.
- Enhanced List Application (ELA) is an optional feature that makes it possible to create mailing lists of up to 1500 recipients per list.
- Voice Director is an optional feature that supports spoken name addressing and dialing.

Types of LAN Connections

The three possible types of LAN connections are:

- 10Base2 BNC (RG-58 50-ohm thin wire coaxial cabling)
- 10Base 5 using an Auxiliary Unit Interface (AUI). The AUI is also called a transceiver or patch cable (RG-8 or RG-11 50-ohm thick wire coaxial cabling)
- 10BASE-T twist.

For more information regarding software and hardware requirements for the Message Manager application, see [Internet Messaging](#).

For more information regarding software and hardware requirements for the ELA application, see [Enhanced List Application](#).

Switch Integration

The Intuity AUDIX system must be correctly integrated with the switching system so that the two can share call information.

Switch integration refers to the sharing of information between a voice messaging system and a switch to provide a seamless interface to callers and system subscribers. A fully integrated voice messaging system answers each incoming telephone call with information taken directly from the switch. Switch integration is required in every Intuity AUDIX system configuration. It supports integration with Avaya and non-Avaya switches.

This topic includes high-level planning information for use in configuring a Intuity AUDIX system with various switches.

- [Supported Features](#)
- [Supported Integration Methods](#)
- [Switch Integration Hardware Devices and Connections](#)
- [Distributed Communications System \(DCS\)](#)
- [Centralized Voice Mail with Mode Code Network](#)

Supported Features

A fully integrated switch can access the following features of the Intuity AUDIX Voice Messaging system:

- **Call answer**

Call answer allows subscribers to:

- Leave a message.
- Transfer to another extension.
- Transfer to an attendant.
- Administer multiple personal greetings (not supported for some switches).

- **FAX messaging**

A system subscriber with fax permissions can use the same extension number to receive fax and voice messages.

- **Voice or multimedia mail**

Voice mail services allow subscribers to:

- Send voice, text, or fax messages to other subscribers.
- Listen to received messages.
- Forward messages received with comments attached.
- Reply to messages (not supported for some switches).
- Send the same message to more than one person using mailing lists.

- Message waiting indication

A message waiting indicator (MWI) is typically in the form of a lamp on a subscriber's telephone that lights to indicate the presence of a message. It can also be a stutter dial tone or a message on a display set.

- Bulletin board service

Bulletin board service allows you to record a message. A caller reaching a bulletin board listens to this message and is then disconnected.

- Automated attendant

An automated attendant directs callers through a series of menu selections to reach a desired compartment, extension, or attendant.

Note:

Interactions through the telephone sets can vary from one switch to another and from one telephone set to another.

Supported Integration Methods

The Intuity AUDIX system supports the following integration methods:

- Inband Signaling (page 129)
- Serial Interface (page 129)
- Digital Communications Interface Unit (DCIU) Interface (page 130)
- Digital Station Interface Circuit Card Interface (page 130)
- LAN Interface (page 130)

Inband Signaling

Inband integration is possible on supported switches through the use of dual-tone multifrequency (DTMF) signaling. Strings of DTMF tones are transmitted on the analog voice channel after the channel connects to answer the call, but before the voice is cut through. Typically, the string contains the calling party identification (CLI), the called party identification (CP), and the reason for the call (redirection or direct call).

See Configuration for Inband Switch Integration (page 132).

Serial Interface

Serial integration can be of two types:

- Proprietary

Serial integration requires an RS-232 interface. The elements of the serial protocol are typically a superset of those in the inband signaling, with the addition of a field describing channel

information. When the call is forwarded to the system, a packet of information is sent through an RS-232 standard serial cable, providing the integration data for the channel the call arrives on.

- **Simplified message desk interface (SMDI)**

SMDI is an integration protocol that controls the exchange of integration information through a serial interface. It is an industry standard typically used by central office (CO) switches.

Some serial Centrex integrations require use of a modem or protocol translator placed in the RS-232 link.

See Configuration for Serial Switch Integrations (page 133).

Digital Communications Interface Unit (DCIU) Interface

The DCIU integration is a proprietary data interface supported by DEFINITY switches. Intuity provides integration using the DCIU interface for DEFINITY switches.

See Configuration for DCIU Integrations (page 134).

Digital Station Interface Circuit Card Interface

The digital station interface circuit card provides digital station interface with a variety of switches. This card is designed to work as a digital voice and data interface card. However, in Intuity AUDIX systems, it is supported as a data interface only. The primary function of this circuit card is to provide call data for calls landing at the Intuity AUDIX voice ports. In these integrations, each tip/ring port on the system is connected to the switch through an analog line as an analog station. Each of the ports on the digital station interface card is connected to the switch as a digital station through a digital line.

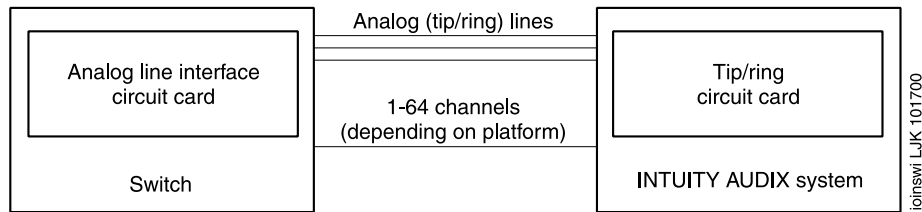
See Configuration for Integrations with a Digital Station Interface Circuit Card (page 135).

LAN Interface

The LAN link allows the DEFINITY ECS and the Intuity AUDIX system to communicate over a private, dedicated LAN, or using a customer's LAN. The DEFINITY ECS is a server, and the Intuity system is a client that always initiates the communications session. This link uses a LAN circuit card installed in the Intuity AUDIX system and a C-LAN circuit

pack (TN799) installed in the DEFINITY ECS. The two systems use TP/IP and a specialized DEFINITY protocol to communicate. The LAN link provides the same functionality as a DCIU link.

Figure: Configuration for Inband Switch Integration



If a modem or protocol translator device is used, it is placed in the RS-232 link.

Figure: Configuration for Serial Switch Integrations

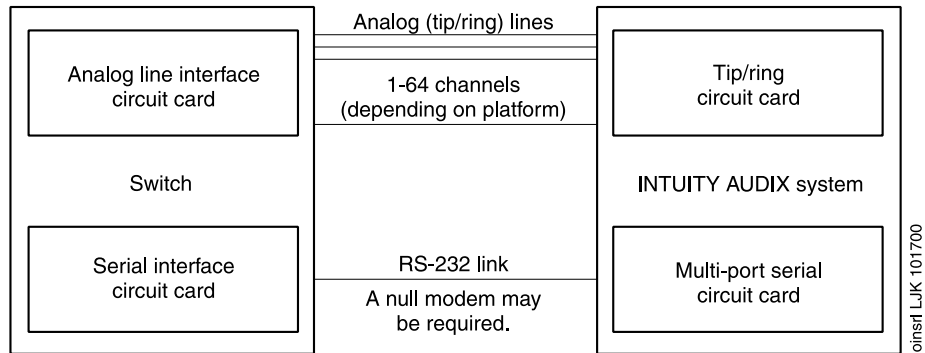
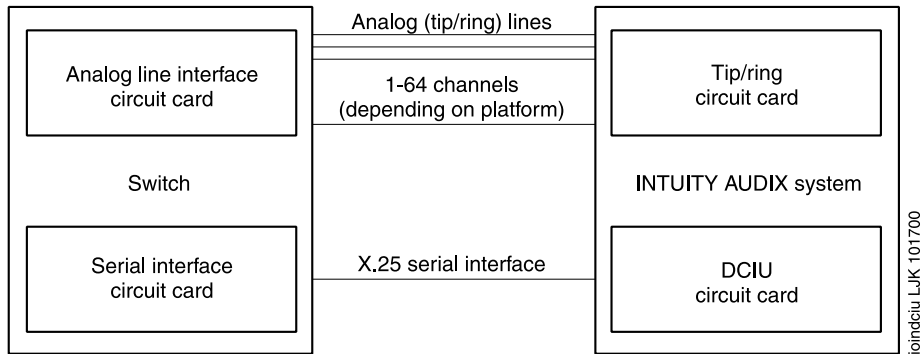
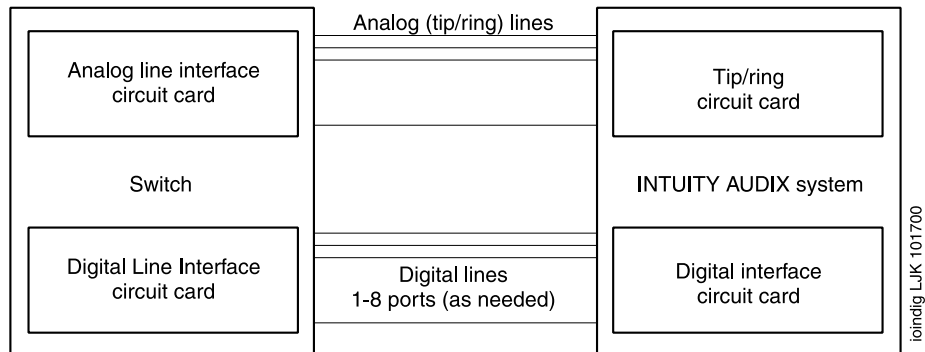


Figure: Configuration for DCIU Integrations



The connection is either through an isolating data interface (IDI) or a modular processing data module (MPDM), which is placed on the X.25 serial interface link.

Figure: Configuration for Integrations with a Digital Station Interface Circuit Card



Switch Integration Hardware Devices and Connections

The switch and integration type determine the hardware and software required for the integration. The Intuity AUDIX system supports the following devices:

- LAN circuit card

This circuit card is the hardware device through which information is exchanged between the Intuity AUDIX Release 5 system and the DEFINITY ECS 6/7/8/9 switches equipped with a C-LAN circuit card.

- EICON or GP Synch circuit cards

This circuit card is the hardware device through which information is exchanged between the Intuity AUDIX system and the Avaya System 75 switch, the Avaya System 85 switch, and the Avaya DEFINITY G1, G2, and G3 switches.

- 3A translator

This is a protocol converter BRI to SMDI. There is one at each end of the circuit although the one at the 5E is inside the switch. A Serial interface card is required in the Intuity AUDIX for this type of integration, the card is a Equinox board with eight ports.

- 202T modem

This device links to the Intuity AUDIX system through the serial interface circuit card to get information from the Northern Telecom (Nortel) DMS-100 and Nortel SL-100 switches. The card is a Equinox board with eight ports. It is imperative that the modems on a Nortel Centrex integration be identical on both ends (they are always used in pairs). It can also be used with the Avaya 5ESS® switch.

- Digital station interface circuit card (VB-PC card)

This circuit card is the hardware device through which information is exchanged between the Intuity AUDIX system and the Nortel Meridian 1 and Rolm/Siemens as well as other switches. See Requirements for Other Supported Switches (page 141) for information.

- Direct connection

The Nortel DMS-100 and Nortel SL-100 switches can connect to the serial interface circuit card without any intervening hardware, only when they are within 50 feet of each other.

- Inband connection

Ordinary tip/ring analog wiring (via the analog voice ports) to connect the Intuity AUDIX system and the switch communicate via DTMF tones. That is all that is required for inband integrations with the following switches:

- Avaya MERLIN LEGEND®
- Avaya System 25
- Avaya DEFINITY R6csi and later and DEFINITY Mode Code
- Nortel Norstar DR3/DR6
- Siemens Hicom 150/200/300

Note:

The Hicom 300 referenced is sold outside North America. There is a Hicom 300 sold in North America with different integration requirements.

In the table for Requirements for Supported Avaya Switches (page 139) lists the Avaya switches. In the table for Requirements for Other Supported Switches (page 141) lists the other switches that the Intuity AUDIX system supports. It includes the switch hardware and software requirements, the Intuity AUDIX system hardware and software requirements, and supporting documentation.

Table: Requirements for Supported Avaya Switches

Switch	Interface, Integration, and Protocol	Switch Requirements	Intuity AUDIX Requirements	Supporting Documentation
Avaya DEFINITY G3i, G3R, G3S, and G1	X.25/DCIU Out-of-band DCIU	<u>Software:</u> All.	<u>Software:</u> DCIU switch integration package <u>Hardware:</u> DCIU circuit card	<i>Intuity Messaging Solutions R5 DCIU Integration with System 75 and DEFINITY Systems</i>
Avaya DEFINITY G2	DCIU	<u>Software:</u> All.	<u>Software:</u> DCIU switch integration package <u>Hardware:</u> DCIU circuit card	<i>Intuity Messaging Solutions System 85, and DEFINITY Communications System Generic 2 Integration, 585-310-256.</i>
Avaya DEFINITY R6csi and later (ProLogixs and DEFINITY BCS)	Tip/ring Inband Mode code	<u>Software:</u> Release 6.2 and above.	<u>Software:</u> Serial/inband switch integration package	<i>Intuity Messaging Solutions R5 Mode Code Integration with DEFINITY</i>
DEFINITY R7.1, 8, and 9				
System 25	Tip/ring Inband Proprietary	<u>Software:</u> R3V3.	<u>Software:</u> Serial/inband switch integration package	<i>Intuity Messaging Solutions R5 Integration with System 25</i>
System 75	X.25/DCIU Out-of-band DCIU	<u>Software:</u> R1V3, issue 1.7 and above. <u>Hardware:</u> Processor interface (PI) card Some early versions of the System 75 R1V3, models 1A, 1B, 2A, and 2B carriers might not support the PI card. These carriers might not have a PI/EIA port for IDI connectivity, and customers must use the MPDM option.	<u>Software:</u> DCIU switch integration package <u>Hardware:</u> DCIU circuit card	<i>Intuity Messaging Solutions R5 DCIU Integration with System 75 and DEFINITY Systems</i>

Table: Requirements for Supported Avaya Switches

Switch	Interface, Integration, and Protocol	Switch Requirements	Intuity AUDIX Requirements	Supporting Documentation
System 85	X.25/DCIU Out-of-band DCIU	<u>Software:</u> R2V4 and above.	<u>Software:</u> DCIU switch integration package <u>Hardware:</u> DCIU circuit card	Same as DEFINITY G2.
MERLIN LEGEND R2 and later Avaya MERLIN LEGEND R1.2i and later	Tip/ring Inband	<u>Software:</u> Release 2.1 and later (U.S.). Release 1.2i and later (non-U.S.). System programming and maintenance terminal emulation package (to allow administration of the switch through the Intuity AUDIX system). <u>Hardware:</u> BTM-012 or BTM-016 module.	<u>Software:</u> Serial/inband switch integration software package	<i>Intuity Messaging Solutions R5 Integration with MERLIN LEGEND and MERLIN MAGIX Systems</i>
MERLIN MAGIX				<i>Intuity Messaging Solutions R5 Integration with MERLIN LEGEND and MERLIN MAGIX Systems</i>
Prologix	C-LAN	<u>Software:</u> Intuity Software 4.4 or higher. Switch software 7.01 or higher.	<u>Software:</u> C-LAN Unix LANset Package	<i>Intuity Messaging Solutions R5 LAN Integration with DEFINITY Systems, 583-313-604</i>

Table: Requirements for Other Supported Switches

Switch	Interface, Integration, and Protocol	Switch Requirements	Intuity AUDIX Requirements	Supporting Documentation
Alcatel	Inband			
Ericsson MD110 Model 20, 40, 50, or 90 This is for Asia/Pac	Serial Out-of-band Proprietary (ICU)	<u>Software:</u> Version BC5.3 or later. Programming units in the LIM with the ICU: IHAH, IH, DIM, and ILP. Programming units in each LIM: DIR and MWP. <u>Hardware:</u> ELU analog station line circuit card (version R1A) for Intuity voice ports. ICU circuit card (version R1A). SFU circuit card for serial interface.	<u>Software:</u> Serial/inband switch integration package <u>Hardware:</u> Multiport serial circuit card	<i>Intuity Messaging Solutions R5 Integration Using Inband and Serial Interfaces</i>
Intercom S/80, S/40, S/10, S/80+	Serial Out-of-band Proprietary (VMP)	<u>Software:</u> Version 10.1.2 and later. Voice messaging product (VMP) interface. <u>Hardware:</u> Octal STE OPX or equivalent line circuit cards for Intuity AUDIX voice ports. QALTA I/O port for serial interface.	<u>Software:</u> Serial/inband switch integration package 4.4 or higher <u>Hardware:</u> Multiport serial circuit card	

Table: Requirements for Other Supported Switches

Switch	Interface, Integration, and Protocol	Switch Requirements	Intuity AUDIX Requirements	Supporting Documentation
Lucent 5ESS Centrex	BRI-to-SMDI protocol conversion (3A translator) SMDI	<p><u>Software:</u></p> <p>Release 5E4 (2), version 4.2 or later.</p> <p>Business and residence customer services (BRCS) package I, II, or III.</p> <p>ISDN package I.</p> <p>ISDN message service (also called Delux MSS).</p> <p>Basic rate interface (BRI)</p> <p>T-interface or U-interface line set up in office-dependent data (ODD) as an applications processor interface (API) as OB + D (data only) with D-channel packet switching (3Aa translator).</p> <p><u>Hardware:</u></p> <p>202T modem or 3A translator.</p> <p>NT1U-200 or NT1U-220 network terminating unit (if distance requires it).</p>	<p><u>Software:</u></p> <p>Serial/inband switch integration package</p> <p><u>Hardware:</u></p> <p>3A translator or 202T modem</p> <p>Multi-port serial circuit card</p>	<i>Intuity Messaging Solutions R5 Centrex Integration</i>
5ESS Centrex (Continued)		<p>ISDN SM optical remote module (ORM) to support the BRI/API link.</p> <p>One two-way analog station line for remote alarming and for access to services personnel.</p> <p>Analog station lines (matched to the number of Intuity voice ports) in a multiline hunt group with the number of queue slots in each group based on traffic.</p>		
Mitel SX200D/200 Lite	Serial Inband	<p><u>Software:</u></p> <p>Generic 1004 F41.0</p> <p><u>Hardware:</u></p> <p>ONS circuits, one per Intuity port.</p> <p>Right-angle, 25 pair male-amphenol cables, one per IVC6</p> <p>DTMF senders and receivers</p>	<p><u>Software:</u></p> <p>Serial/inband switch integration package</p> <p>Version 4.4 or higher</p> <p><u>Hardware:</u></p> <p>Voice Port Cards (IVC6, six analog connections per card.</p>	<i>Intuity Messaging Solutions R5 Integration Using Inband and Serial Interfaces</i>

Table: Requirements for Other Supported Switches

Switch	Interface, Integration, and Protocol	Switch Requirements	Intuity AUDIX Requirements	Supporting Documentation
NEC Neax 2000	Serial Inband	<p><u>Software:</u></p> <p>Software series 1200 and higher, Release 2</p> <p><u>Hardware:</u></p> <p>Standard, single-line extension appearances, (4LCx supports 4 ports per card, the x denotes the version of the board.</p> <p>One I/O AP00 port for RS232 data link</p> <p>One RS-RVS-4S-CA-C cable</p> <p>One P/N NR559037-107 or NR553925-110 cable for the data link.</p>	<p><u>Software:</u></p> <p>Serial/inband switch integration package</p> <p>Version 5.0 or higher</p> <p><u>Hardware:</u></p> <p>Voice Port Cards (IVC6, six analog connections per card.</p>	<i>Intuity Messaging Solutions R5 Integration Using Inband and Serial Interfaces</i>
NEC NEAX 2400	Serial Out-of-band Proprietary (MCI)	<p><u>Software:</u></p> <p>Message center interface (MCI) link support.</p> <p>Models SIM and IMG: software level 5200 or above.</p> <p>Models MMG and UMG: software level 4000 or above.</p> <p><u>Hardware:</u></p> <p>Analog ports (PA-16LCQ) or equivalent recommended with loop disconnect signaling for connection to the Intuity AUDIX system.</p>	<p><u>Software:</u></p> <p>Serial/inband integration package</p> <p><u>Hardware:</u></p> <p>Multi-port serial circuit card</p>	<i>Intuity Messaging Solutions R5 Integration Using Inband and Serial Interfaces</i>

Table: Requirements for Other Supported Switches

Switch	Interface, Integration, and Protocol	Switch Requirements	Intuity AUDIX Requirements	Supporting Documentation
NEC Neax 7400 Australia only	Serial Inband	<p><u>Software:</u></p> <p>Software series 1200 and higher, Release 2.</p> <p><u>Hardware:</u></p> <p>Standard, single-line extension appearances, 16LC-BE or 16LC-Q.</p> <p>One analog port for remote service access.</p> <p>One NEC I/O Board Ap00-A using NEC cable NR553925-110 for RS-232 data link.</p> <p>One P/N NR559037 or NR553925-110 cable for the data link.</p> <p>80 Vdc power supply model 15842-001 (for messaging-waiting on single-lines).</p> <p>Notes: If an additional I/O card must be ordered, also order a MISC TTY CA.</p> <p>The 2 ports I/O CA is used with the I/O-19 card, and the 68PH S 2PORTS CA-A is used with the I/O-24 card as the MISC TTY CA.</p>	<p><u>Software:</u></p> <p>Software Release 4.4 or later platform software</p> <p>Serial/inband integration package.</p> <p><u>Hardware:</u></p> <p>Voice Port Cards (IVC6, six analog connections per card.</p> <p>Multi-Port Serial Card (provides 8 RJ11 connections.)</p> <p>DB9 to DB25 pin Serial cables.</p>	<i>Intuity Messaging Solutions R5 Integration Using Inband and Serial Interfaces</i>
NEC SDS Japan only	Inband	<p><u>Software:</u></p> <p>ATC-26 analog interface</p> <p>SW 2470</p>	<p><u>Software:</u></p> <p>Serial/Inband package</p> <p>SW 4.4 or higher</p>	<i>Intuity Messaging Solutions R5 Integration Using Inband and Serial Interfaces</i>

Table: Requirements for Other Supported Switches

Switch	Interface, Integration, and Protocol	Switch Requirements	Intuity AUDIX Requirements	Supporting Documentation
Nortel DMS-100 and SL-100 Centrex	Serial (with or without 202T modem) Out-of-band SMDI	<p><u>Software:</u></p> <p>BCS24 through BCS28 and BCS32 or later packages for the SMDI data link.</p> <p>NTX100 Meridian digital Centrex basic (IBN) package.</p> <p>NTX101 Meridian digital Centrex enhanced business services (IBN) package.</p> <p>NTX119 Message Service package.</p> <p>NTX730 ASCII driver.</p> <p>NTX732 SMDI package.</p> <p>Plain old telephone service (POTS) only: NTX220 vertical services package or NTX806 enhanced call forwarding package.</p> <p><u>Hardware:</u></p> <p>202T-compatible modem at the switch (if distance requires it).</p>	<p><u>Software:</u></p> <p>Serial/inband switch integration package</p>	<i>Intuity Messaging Solutions R5 Centrex Integration</i>
Nortel DMS-100 and SL-100 Centrex (Continued)		<p>ntix67fa terminal circuit card (1200-baud link) or nt1x89AA/AB or high-vintage MPC card (2400-baud link).</p> <p>829 channel interface unit, OMNI port, or other equivalent repeater (in some configurations based on the distance between the switch and the Intuity AUDIX system).</p> <p>B25 A or equivalent cable when connecting the 202T modems to the repeater.</p> <p>DMS-100 circuit cards ntix67bc and ntix67bd are not compatible with the Intuity AUDIX system.</p>		

Table: Requirements for Other Supported Switches

Switch	Interface, Integration, and Protocol	Switch Requirements	Intuity AUDIX Requirements	Supporting Documentation
Nortel Meridian 1, and SL-1 only if the M1 can support the QPC cards we can interface to those cards.	Digital station interface circuit card Station emulation Proprietary	<p><u>Software:</u></p> <p>Generic 11, Release 15 and above with options 11, 21, 21a, 51, 61, 71 and 81.</p> <p>Option 19 package for digital display (DDSP).</p> <p>Option 46 package for message center (MWC).</p> <p>Line disconnect tone allowed (LDTA) package (required in some countries).</p> <p>Switch releases 15 and 16 support silence disconnect only and do not support LDTA.</p> <p><u>Hardware:</u></p> <p>Meridian 1:</p> <p>NT8D09 or NT8D03 circuit card for analog connections to the Intuity AUDIX system.</p> <p>NT8D02 circuit card for digital connections to the Intuity AUDIX system.</p>	<p><u>Software:</u></p> <p>Digital station interface circuit card switch integration package (VB-PC)</p> <p><u>Hardware:</u></p> <p>Digital station interface circuit card</p>	<i>Intuity Messaging Solutions R5 Integration Using Digital Station Interface</i>
Nortel Norstar DR3/DR6, Centrex	Tip/ring Inband Proprietary (VMI)	<p><u>Software and hardware:</u></p> <p>Voice message interface (VMI) unit.</p>	<p><u>Software:</u></p> <p>Serial/inband switch integration package</p>	<i>Intuity Messaging Solutions R5 Integration Using Inband and Serial Interfaces</i>
Rolm 8000	Tip/Ring analog Telephone Emulation	<p><u>Software:</u></p> <p>Supported Releases 8003 or higher</p> <p>Message-Waiting software (MSG CTR)</p> <p><u>Hardware:</u></p> <p>One Digital Interface channel per VB-PC Port.</p> <p>Analog ports, one per Tip/Ring port.</p> <p>Conference Card.</p> <p>Message-Waiting hardware as needed.</p> <p>25-pair, right-angle, male-Amphenol cables.</p>	<p><u>Software:</u></p> <p>Intuity Software Release 4.4</p> <p>RLMTL Set Switch Integration Software.</p> <p><u>Hardware:</u></p> <p>Tip/Ring line cards (IVC6), six analog connections per card.</p> <p>VB-PC card for ROLM 8000 (Provides 8 digital RJ11 connections).</p>	

Table: Requirements for Other Supported Switches

Switch	Interface, Integration, and Protocol	Switch Requirements	Intuity AUDIX Requirements	Supporting Documentation
Rolm 9000	Telephone Emulation	<p><u>Software:</u> Release 9005 and below Message-Waiting software (MSG CTR)</p> <p><u>Hardware:</u> One Digital Interface channel per VB-PC Port. Analog ports, one per Tip/Ring port. Conference Card. Message-Waiting hardware, as needed.</p>	<p><u>Software:</u> INTUITY™ Software Release 4.4. RLMTL Set Switch Integration Software.</p> <p><u>Hardware:</u> Tip/Ring line cards (IVC6), six analog connections per card VB-PC Card for ROLM 9751 (Provides 8 digital RJ11 connections)</p>	VB-PC
Siemens Hicom 150E/150/200 /300	Tip/ring Inband Proprietary (VMie)	<p><u>Software:</u> Voice mail interface enhanced (VMie) package.</p> <p><u>Hardware:</u> SLMA-16 card for analog ports.</p>	<p><u>Software:</u> Serial/inband switch integration package</p>	<i>Configuration notes shipped with product.</i>
Siemens Hicom 300E	Telephone Emulation	<p><u>Software:</u> 9006i</p>		VB-PC

Distributed Communications System

The Intuity AUDIX system can serve more than one switch when the switches are part of a distributed communications system (DCS) network. These include:

- Description (page 149)
- Host Switches (page 150)
- Configuration (page 150)
- Operation (page 150)
- Requirements (page 151)
- Connectivity (page 151)

Description

The DCS network feature on Avaya switches allows multiple switches to work together as one switch. The switches can be in the same location or distributed between sites. All switches in a DCS network share the same uniform dialing plan. Switches share call information over a DCIU link. Subscribers receive calls from remote subscribers as they would receive calls from their local switch. The switch sends caller names or extensions to the subscribers' telephone displays and can use leave-word calling and other switch features.

The DCS feature package allows a single Intuity AUDIX system to integrate with up to 20 of the switches on the DCS network. The DCS feature package provides called-party information to the Intuity AUDIX system from all the switches on the DCS network.

If a customer has a DCS network, subscribers—regardless of location—can include each other on mailing lists, forward and reply to each others' messages, and have calls routed to them efficiently and accurately.

Host Switches

The switch that hosts the Intuity AUDIX system connects it to the other switches in the network. The system uses the existing DCS trunks of the switch for both data and voice communications. The following switches could be the host and/or a remote switch for the system in a DCS environment:

- System 75
- DEFINITY G1, G3i, G3r, G3s, or G3vs

Configuration

There are two possible configurations for a system in a DCS network:

- Using BX.25 data channels
- Using ISDN-PRI D-channel (DEFINITY G3i, G3r, G3s, and G3vs only)

Operation

How DCS Networking operates on a system depends on the DCS configuration.

DCS Configuration Using BX.25 Data Channels

One system residing on a switch can support up to 20 remote switches in a DCS network. A remote switch does not have a direct data link connection to the system. The remote switch passes data through the host switch to the system through a channel over the DCS BX.25 data link. The Intuity AUDIX system on the host switch has separately administered channels to each of the supported remote switches. These *hop channels*, provided by the host switch, are used to control message waiting indicators (MWIs) and to identify remote switches to the system. The host switch then provides the voice port and system connections for all switches in the DCS network that communicate with the system on the host. All Intuity AUDIX system features can be activated from both the host and remote switches.

The remote Intuity AUDIX system hunt group can be a coverage point in a call coverage path at a remote switch not connected directly to the system. The remote switch must be in the DCS network.

**DCS Configuration
Using ISDN-PRI
D-Channel
(DEFINITY G3i, G3r,
G3s,
and G3vs only)**

This configuration uses BX.25 connectivity between the Intuity AUDIX system and the host switch. The ISDN-PRI connectivity is used between the host switch and the remote switches in the DCS network. This configuration requires the same hardware as the DCS Over ISDN-PRI D-channel feature. Intuity AUDIX system messages are transported to the remote switch via administered non-call-associated temporary signaling connections (NCA-TSCs) between nodes supporting ISDN-PRI D-channel. An administered NCA-TSC is established between two administered NCA-TSC endpoints on two different PBXs and remains up or enabled for a period of time depending on administered translations. The connection may be administered on an as-needed or permanent basis.

These same configurations are available on the remote switch. See “DCS and AUDIX Networking” in *DEFINITY Enterprise Communications Server R6 Administration and Feature Description*, 555-230-522, for detailed examples of DCS in the following configurations:

- Traditional DCS network
- D-channel DCS network (private network only)
- D-channel DCS network (public network access/egress)
- Integrated DCS network (private network only)
- Integrated DCS network (public network access)

Requirements

All the Intuity AUDIX system platforms support DCS networking. DCS networking requires the base platform configuration with switch integration and the associated software package.

For U.S. customers, the Sales and Design Support Center (SDSC) designs a multinode DCS arrangement with a Intuity AUDIX system. The International Technical Assistance Center (ITAC) provides this service for customers in other countries.

Connectivity

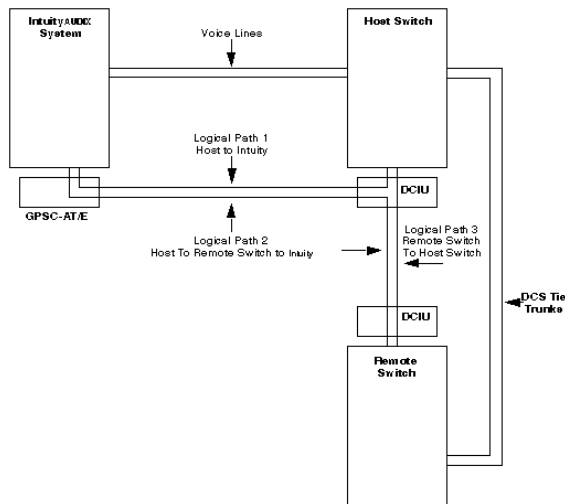
The figure shows the connectivity for providing Intuity AUDIX Voice Messaging transparency in a DCS network. Click to view the High-level DCS Connectivity with a Intuity AUDIX System (page 153). The connectivity consists of a single Intuity AUDIX machine connected to multiple switches via a host or gateway switch. The voice lines to and from the Intuity AUDIX system all terminate in an Automatic Call Distribution (ACD) group on the host switch. Thus, the host switch is a tandem point for all voice connections between the Intuity AUDIX system and the other remote switches in the DCS arrangement. The DCS

tie trunks provide voice lines between the host switch and the remote switches.

In a DCS network, logical channels on the physical link provide connectivity for the transmission of voice messages between the switches and the Intuity AUDIX system. The DCIU on the host switch is used for these communications. These logical channels are rerouted from the host switch to each of the remote switches. Thus, logical paths can be established between each switch and the Intuity AUDIX system:

- The host switch and the Intuity AUDIX system exchange voice messages through logical path 1.
- The remote switch and the Intuity AUDIX system exchange voice messages through logical path 2.
- The host switch and the remote switch exchange voice messages through logical path 3.

Figure: High-level DCS Connectivity with a Intuity AUDIX System



Administration and Maintenance

This section describes the features provided to administer and maintain a Intuity AUDIX system. These features include remote and local administration and maintenance access through terminals, utility programs, and screens.

Intuity AUDIX system features related to primary software applications and features available are discussed in the [System Features Description](#).

Topics include:

- [Administration](#)
- [Reports](#)
- [Administration Tools and Utilities](#)
- [Maintenance](#)

Centralized Voice Mail with Mode Code Network

Intuity AUDIX can serve as a centralized voice messaging system within a communications network that used Mode Code signaling.

In the communications system and network MERLIN LEGEND and MERLIN MAGIX systems can communicate with a DEFINITY ECS system via mode codes. In such a network the Intuity AUDIX system is integrated with the DEFINITY ECS system but supports other nodes of the network that communicate by the mode code. The AUDIX system does not really know about the remote switches, it only knows about the host switch. That switch takes care of how to communicate with all of the remote switches.

The mode code (inband) like allows the Intuity AUDIX system and a DEFINITY ECS to communicate using the same analog telephone lines that connect the two systems for call answer and message retrieval. This integration uses touch-tone signalling, call progress signals, and switch hook flashes over the ordinary tip and ring analog wiring to transfer information about the telephone call between the two systems. This integration does not require a separate signaling link as needed for DCIU or LAN integrations.

As a centralized voice mail system nodes in the network can use the following features that Intuity AUDIX supports for the node network:

- fax as well as voice mail
- messaging waiting light activation
- remote coverage to voice mail

Note:

It does not support transfer into voice mail.

For more information for setting these features up, see the *Intuity Messaging Solutions Mode-Code Integration with DEFINITY Systems* book, and the *MERLIN LEGEND Switch* documentation.

Administration

Intuity AUDIX contains a variety of topics that relate to initial and ongoing administration.

Topics include:

- Administrative Interfaces (page 159)
- Help (page 163)
- Remote Access (page 164)
- Internet Messaging Administration (page 165)

Administrative Interfaces

The system provides three interfaces for accessing and administering Intuity AUDIX features. These interfaces are:

- A telephone
- A console consisting of a dedicated monitor and keyboard for local administration access to a system of windows, menus, and screens
- A Web browser

Most of the platform and networking administration is done through the administration windows. The customer administration and messaging administration are carried out through the administration screens.

Three customer administration logins allow varying levels of access to the features and capabilities:

- System administrator (sa)

- Voice mail (vm)
- Craft

Internet Messaging gives Intuity Message Manager and Post Office Protocol 3 (POP3) client subscribers full Internet email capabilities through the Intuity AUDIX. The Internet Messaging feature is administered and maintained through a World Wide Web browser interface. This interface can be used from any location with access to the internal LAN or the Internet.

Administration from the Telephone Interface

The system administrator performs some administrative tasks using the telephone, including recording:

- Subscribers' names (this is optional; customers can record their own names.)
- Networked machine names — for information on networking, see [Digital Networking Administration: Overview and Purpose](#).
- Automated attendant menus and options.

The voiced menu options that callers hear are actually personal greetings that the customer records for the Automated Attendant's extension. The Multiple Personal Greetings feature can also be used to provide different menus and options for different types of callers. For an overview of the Automated Attendant features, see [Automated Attendants and Bulletin Boards: Overview](#).

- Bulletin Board announcements.

As with Automated Attendants, the system administrator records Bulletin Board messages. For more information and procedures, see [Automated Attendants and Bulletin Boards: What Is a Bulletin Board](#).

- Enhanced List Application (ELA) mailbox names.

The Enhanced List Application (ELA) is a powerful messaging tool that can distribute large quantities of messages. To AUDIX, ELA mailboxes look and act like any customer mailbox. The system administrator records a name for a mailbox so that customers hear a meaningful name when sending messages for distribution. For more information and procedures, see [Enhanced List Application: Guidelines for Naming Enhanced Lists](#).

- Announcement fragments and announcements.

An *announcement fragment* is a recorded voice segment, and an *announcement* is a set of rules for determining when a specific fragment is to be played. For more information, see [Customizing](#)

[Announcements: About Fragments, Announcements, and Announcement Sets.](#)

Administration from Intuity AUDIX Windows

Most Intuity AUDIX platform administration tasks are performed using windows accessed by selecting options from the main menu. Through the Intuity AUDIX windows the system administrator can:

- View information, enter information, access menus, select an option to display another window or menu, or select available system options.
- Display more than one screen or menu concurrently, although only the last window displayed is active.
- Cancel the active window to return to the previous menu or window.
- Use function keys to perform commands.
- Access online system Help and field Help for data entry fields in the window.

The following table describes the layout and components of the Intuity AUDIX Administration menu and window.

Table: Intuity AUDIX Administration Window Layout and Components

Window/Menu Component	Description
Menu	A special type of window that contains a list of options. A menu differs from other windows in that you cannot enter data into a menu.
Window	That bounded portion of the administrative interface through which the customer can view system information or status. A window differs from a screen in that a screen fills the monitor viewing area while a window has an edge and is displayed only on a portion of the monitor viewing area.
Window Title	The part of the window or menu that shows the name of the window or menu.
Scroll Bar	the part of the window that indicates when a window contains more than one screen of information. The customer can scroll forward and backward through the information.
Message Line	A line of text that contains a brief message about how to use the window.
Function Key Labels	Boxed labels that correspond to the first eight function keys (F1 through F8) on the keyboard that comes with the system. Each label represents a command that is executed when the corresponding function key is pressed. If no command label appears for a given function key, that key is not available.

Administration from AUDIX Screens

The system administrator administers most aspects of Intuity AUDIX messaging using Intuity AUDIX administration screens. When the customer first accesses the AUDIX administration screens, a blank screen is displayed. From this screen, the customer enters commands that cause the system to display other screens, such as Machine Profile, Subscriber, and Class of Service screens. These screens allow the system administrator to enter or view information or to select available system options.

Each screen has a name, which is part of the command that is used to display that screen. As with the administration windows, online Help and field Help for data entry fields are available.

The following table describes the layout and components of the Intuity AUDIX Administration screen.

Table: Intuity AUDIX Administration Screen Layout

System status line	This line displays Intuity AUDIX system information, including the machine name, application status, any active alarms, and the number of people logged in to the system.
Command history line	This line displays the fully expanded command currently entered in the command line and the current page number and page count (for example, <code>change subscriber "Jane Doe" Page 1 of 2</code>). If the active screen is a Help screen, this line contains the title of the screen or field Help (for example, <code>change subscriber "Jane Doe": field help Page 1 of 1</code>).
Activity area	The activity area displays: <ul style="list-style-type: none">■ Data-entry fields used to specify new or changed parameter values■ Display-only fields, which contain current parameter values that cannot be changed from this screen■ Report results, which display requested system information■ Screen and field Help activated with the <i>Help</i> or <i>Choices</i> keys
Help/error message line	This line displays system feedback (for example, <code>Command Successfully Completed</code>), error messages, and prompts.
Command line	This line is used to enter commands to access a new screen or exit AUDIX Administration.
Function key labels	This portion of the screen shows labels for function keys F1 through F8. The labels indicate the actions invoked by pressing the function keys while a screen is active.

System Logins

There are three logins that provide varying levels of access to the features and capabilities of the Intuity AUDIX system. This layered login approach provides a means to limit access to certain features.

VM Login

The voice mail (vm) login permits:

- Administration of the Intuity AUDIX voice messaging feature package through the AUDIX administration screens
- Access to selected maintenance logs

SA Login

The system administrator (sa) login permits:

- Administration of all the Intuity AUDIX feature packages and systemwide features through both the Intuity AUDIX windows and the AUDIX administration screens
- Access to selected maintenance logs

Craft Login

The services craft login permits:

- Administration of all the Intuity AUDIX feature packages and systemwide features through both the Intuity AUDIX windows and the AUDIX administration screens
- Access to all maintenance logs

Note:

The craft login is reserved for services personnel.

Administrative Access by More Than One Person

A system allows more than one person to perform the same function on the same screen, for example, adding a customer to the Intuity AUDIX Voice Messaging database. However, when two people happen to be editing the same profile, only the changes made by the person who saves the screen *last* are written to the hard disk. The other changes are lost.

Help

Help is available at three levels:

- When using a computer or terminal, Help can be activated for any window, screen, or field. Use the Help and Choices keys for the purpose of obtaining assistance.

- The Help key provides general system information, navigation suggestions, and data entry overviews.
- The Choices key is active when the cursor is in a field, window, or screen and provides specific information for the field, window, or screen.
- Help can be obtained from the Intuity AUDIX documentation set. This set of documents contains detailed administrative and diagnostic procedures.
- When using a telephone, Help can be obtained by calling the remote services center, which is open 365 days a year.

Remote Access

Remote access allows system administrators to perform administrative duties from a console that is not part of the Intuity AUDIX system. For example, system administrators can use a console at their desks for remote access. There are two types of remote access: services remote access and customer remote access.

Services Remote Access

Technicians can access a system remotely through the asynchronous port on the remote maintenance circuit card. If installed, this card uses the second communications port (COM2).

Note:

A Remote Maintenance circuit card might not be available. Check with an account representative for availability.

With the Access Security Gateway (ASG) feature, you can secure the administration and maintenance ports on the Intuity AUDIX server. Whenever a subscriber begins a session on the server for purposes of administration or maintenance, the subscriber must enter a valid login ID. If the ASG interface is installed, the server issues a numerical challenge. The subscriber must enter the correct numerical response in order to access the Intuity AUDIX administration and maintenance features. Using ASG reduces the possibility of unauthorized access to the system. See [Administering the ASG Gateway](#) for procedures for using the ASG interface.

Customer Remote Access

The customer can access the Intuity AUDIX system remotely through a terminal and modem connected to the first serial port on the CPU or to the multi-port serial card.

The following table lists the remote access requirements.

Table: Remote Access Requirements

Components	Notes
Multiport serial card	Provides eight serial ports; required if COM1 is already in use
Multiport serial card software	Required with the multiport serial card
One of the following connection types: <ul style="list-style-type: none"> ■ US Robotics Sportster modem ■ Paradyne Comsphere 3820 modem ■ Paradyne Comsphere 3910 modem (or other locally certified modems outside the U.S.) ■ 7400A and 7400B data modules ■ ADU 	Required if the remote terminal is greater than 50 feet (15 meters)
One of the following terminals: <ul style="list-style-type: none"> ■ Avaya 386 ■ Avaya 4410 (for PROCOMM PLUS 4410 or Terranova emulation) ■ Avaya 513 (for Terranova emulation) ■ Avaya 715 ■ Avaya 4425 ■ vt100 	

Internet Messaging Administration

The system administrator can administer the operation of Internet Messaging through a World Wide Web browser interface. Where possible, default values or a list of selections are provided. However, some fields require that an entry be made, after which the system will operate properly. To move from one screen to the next, click the **Next** link at the bottom of each page. For additional information on Internet Messaging, see [Overview of Activating Internet Messaging](#).

Administration Tools and Utilities

Intuity AUDIX provides several tools and utilities that are available to enhance the system administration environment including:

- AUDIX Administration and Data Acquisition Package (page 167)
- Call Accounting System (page 168)
- Backup and Restore (page 169)

AUDIX Administration and Data Acquisition Package

The AUDIX Administration and Data Acquisition Package (ADAP) is part of the standard Intuity AUDIX system configuration. ADAP is a collection of software programs installed on a customer-provided PC. ADAP uses a command-line language interface and allows the customer's system administrator to download traffic data, subscriber data, and other system data from the messaging database files on the Intuity AUDIX system to a PC or printer for further processing.

Administration of the ADAP software is the customer's responsibility.

ADAP Connectivity

There are two ways to connect the customer-provided PC to the Intuity AUDIX system. Connections can be established either directly through an RS-232 port (COM1 or the multiport serial card) or indirectly using remote access capabilities as discussed in the section [Remote Access](#). The customer's system administrator logs in to the voice messaging system using an ADAP-supplied command.

ADAP Data Management

Live data is the information maintained by the voice messaging system and stored on the Intuity AUDIX system itself. Except for database-modification commands and the system attendant reports, *ADAP*

does not work directly with live data in the voice messaging database. Instead, ADAP copies this data to the PC. Changing the data stored on the PC does not change the information stored on the voice messaging system.

With the command-line language, the customer's system administrator can retrieve and send data directly to the PC or to a printer for further processing.

ADAP Optional Components

To use ADAP's capabilities, it might be necessary to add some components to the standard configuration. The following table lists the ADAP requirements. For more information on ADAP, see *AUDIX Administration and Data Acquisition Package*, 585-302-502.

Table: ADAP Requirements

Component	Notes
Multiport serial card	Provides eight serial ports for multiple administration sessions and/or if COM1 is already in use.
One of the following connection types: <ul style="list-style-type: none">■ Paradyne Comsphere 3820 modem■ AT&T Paradyne Comsphere 3910 modem (or other locally certified modems outside the U.S.)■ 7400A data module	Required if the distance to the PC is greater than 50 feet (15 meters).
Personal computer (PC)	The ADAP software must be loaded on a computer that is separate from the Intuity AUDIX system.
ADAP software	Standard with the Intuity AUDIX system.
<i>AUDIX Administration and Data Acquisition Package</i> , 585-302-502	Documentation provided with the ADAP product.

Call Accounting System

The Intuity Call Accounting System (CAS) is a comprehensive software package designed to administer telephone expenses and track facility usage within an organization. CAS operates on a Intuity AUDIX system connected to the customer's MERLIN LEGEND, System 75, System 25, or DEFINITY G1 or G3 switch.

CAS works as follows:

- A telephone call placed on site is routed through the switch to its final destination or an incoming call is routed to an extension. These actions are called *transactions*.
- The switch prepares an electronic record of the transaction.
- CAS receives the electronic records from the switch and processes, costs, and stores them as call records.
- Reports of the call records can be accessed through the system.

Backup and Restore

If your platform is a MAP/5P or MAP/5PV3, backups are done using a tape cartridge backup. If your platform is a MAP/40P or a MAP/100P, the backup is done using a disk cartridge backup. There are two types of backups, unattended or attended backups.

Unattended Backup

The Intuity AUDIX system regularly and automatically backs up information critical to its operation. This is called an *unattended* backup. If the backup fills the tape or disk cartridge, the unattended backup alone might not completely restore the system to its previous state. However, it does contain all of the information necessary to bring the system back to working order. For example, unattended backups might not store all voice data. In the event of a system failure, some voice messages could be lost if you have not performed an attended backup.



CAUTION:

At a minimum, a 7-day backup should be maintained by the customer with a new tape or disk cartridge being used for each day. The backup tape or disk cartridge should be labeled and stored in a secure location. These tape or disk cartridges can be archived for longer than 7 days or can be rotated through the 7-day backup cycle.

Attended Backup

In addition to the information saved during the nightly backups, an administrator can copy other types of information from the Intuity AUDIX system to tape or disk cartridge storage for security and recovery purposes. This is called an *attended* or *manual backup*. An attended backup gives the administrator more options regarding which data to back up than does an unattended backup. For example, the administrator can back up all voice messages and other voice data using an attended backup.

Note:

Establish a regular, rigorous backup schedule based on the quality of service you plan to provide to your subscribers.

The customer's system administrator should perform attended backups at all of the following times:

- After making major system changes
- After entering new subscribers
- When experiencing system problems to avoid losing information entered since the last unattended backup



CAUTION:

The digital networking service go down momentarily during an attended backup; however, the network comes back on its own. This momentary loss of service not cause for alarm. Because of it, the customer's system administrator might want to perform attended backups during off-peak or out-of-business hours.

Maintenance

Intuity AUDIX provides special maintenance features including:

- System Maintenance (page 171) — describes the organization and function of the maintenance layer
- Logs (page 172) — describes the different types of logs in which the system records information about its activities
- Diagnostics (page 175) — describes the types of hardware diagnostics available
- Database Audits (page 178) — describes the types of database audits that run automatically or on demand to ensure the integrity of system data
- Remote Service Center (page 175) — describes the role of the remote service center in maintaining the system
- RAID (page 179) — describes the data-mirroring feature package
- Security (page 180) — describes a few security features
- Additional Maintenance Tools (page 183) — describes other products that the customer or field technicians can use in conjunction with the system, such as Trouble Tracker and the Inband PBX Configuration Tool.

System Maintenance

The customer services layer of the product is part of the platform and is common to all features and feature packages. Depending on its requirements, the feature or feature package uses the utilities offered by the maintenance layer.

This scheme provides the customer's system administrator with a single point of reference for maintenance and troubleshooting regardless of configuration. For example, the configuration includes Intuity AUDIX Voice Messaging, Intuity FAX Messaging, and Intuity AUDIX Digital Networking. All of these applications use the same alarm log to report problems occurring within the feature or in its interaction with other feature packages. This log:

- Receives entries from all areas of the system
- Prioritizes alarms according to severity
- Is accessible in an easy-to-read report

Reviewing the logs allows the customer's system administrator to reach a quick understanding of overall system status. This common maintenance platform offers a variety of other features aimed at efficient and effective maintenance and troubleshooting.

Logs

The system uses a series of logs as the central collection point for information flowing from all of the Intuity AUDIX features and feature packages. These logs provide a systemwide view of activities, errors, and alarms.

Messages in the logs range in importance from informational to critical. The logs vary based on audience (who can access them) and information type. The current system uses four logs:

- Activity Log

The activity log records a list of Intuity AUDIX mailbox-related events (for example, logins and message creation, receipt, and deletion). This log is useful for responding to subscriber-reported problems. The activity log is accessible to the vm, sa, and craft logins.

- Administrator's log

The administrator's log records informational messages that could require some action by the Intuity AUDIX system administrator. These messages might simply log a successful nightly backup or they could alert the system administrator that the system is low on disk space. The administrator's log is accessible to the vm, sa, and craft logins.

- Alarm log

The alarms signal a service-affecting or potentially service-affecting problem with the system. The alarm log records major, minor, and warning alarms generated by the system. The system automatically notifies a designated remote service center of all major and minor alarms. The customer is responsible for

resolving all warning alarms. The alarm log is accessible to the vm, sa, and craft logins.

- Maintenance log

The maintenance log records error occurrences, error resolutions, and informational events that can help Professional Services troubleshoot an alarm. The maintenance log is accessible only to the craft login.

Alarms

Errors found by the system are recorded in the maintenance log. The system then attempts to diagnose and isolate those problems and can send an alarm to the alarm log if it cannot correct the error automatically.

The contents of the alarm log represent all of the significant problems the system detects. Therefore, it is the starting point for troubleshooting the system.

Note:

Many alarm codes and alarm numbers have changed from previous releases. See [Alarms](#) for current alarm listings.

The alarm log holds two types of entries:

- Active alarms

An active alarm indicates a current problem in the system.

- Resolved alarms

Resolved alarms have been corrected either automatically or through a repair procedure.

Three alarm levels indicate the severity of an alarm:

- Major Alarms

Major alarms indicate problems that could affect key system components or features. For example, if more than 25% of the voice ports are out of service, a major alarm is generated. Major alarms are repairable by technicians.

- Minor Alarms

Minor alarms indicate problems that could affect full service but are not critical to system operation. For example, if a network connection occurs, a warning alarm appears. Minor alarms are repairable by technicians. Minor alarms are repairable by technicians.

- **Warning alarms**

Warning alarms indicate problems that could potentially affect system service if not resolved. For example, if the customer system administrator does not create a trusted server password and a trusted server tries to log in, a warning alarm is generated. Warning alarms are repairable by the customer.

When an active alarm is corrected, its status changes from “active” to “resolved.”

Alarm Resolution

If the customer purchases a maintenance service contract and activates the alarm origination feature, the system automatically sends major and minor alarms to a remote service center for correction. Warning alarms are not sent to a remote service center. Warning alarms must be corrected by the system administrator using the procedures detailed in [Alarms](#).

Alarm Notification

Viewing the administrator’s log and the alarm log on a daily basis is the best way to be informed of new entries. Active alarms (alarms that have not been resolved) and new entries to the administrator’s log are noted on the STATUS line.

The STATUS line can display multiple levels of alarms. The alarm level is important because it classifies problems within the system so that the most severe can be worked first. In most cases, the alarm level also marks the area between the responsibility of the system administrator (warning alarms) and the responsibility of the remote service center (major and minor alarms).

Remote Maintenance Circuit Card

The system can employ a remote maintenance circuit card. This card monitors a number of items including disk drive status and environmental conditions.

The remote maintenance circuit card:

- Provides a single point of remote alarming and service access to the system (this is accomplished through an on-board Hayes-compatible modem in the U.S. version and an external modem in the non-U.S. version)
- Provides dial-up access, even when the system is no longer responding to local control

- Has a UNIX-based remote console feature that allows remote service center personnel to remotely access the system almost as if they were at the local console
- Allows the remote service center to perform a reboot of the system
- Monitors voltage levels and fan status on the system

Note:

The remote maintenance circuit card also monitors the internal uninterrupted power supply on older models of the MAP/100p.

Remote Service Center

The remote service center plays a key role in maintaining and troubleshooting the system.

If a major or minor alarm remains active on a customer's system for at least five minutes, the Remote Maintenance circuit card automatically places a call to the remote service center designated on the Alarm Management screen. The modem on the Remote Maintenance circuit card that was used to place the call to the remote service center also allows remote service center personnel to log in to the system and correct the problem. Problems can usually be corrected without disrupting service.

Remote notification of alarms varies based on the terms of a customer's maintenance contract. If the customer selects the remote service center as the remote alarming center, alarms are sent to the remote service center, where they are tracked and resolved in a timely manner.

Diagnostics

The system provides utilities to manually test most of its hardware components and their physical links to other parts of the system.

- POST

Any time the Intuity AUDIX is booted or rebooted, a power-on self-test (POST) is performed. It checks the following components on a pass/fail basis: CPU, CMOS RAM, ROM checksum, memory refresh, DMA controllers, interrupt controller, keyboard, dedicated memory, base memory, extended memory, total memory, calendar/clock, diskette, and hard disk.

- Remote maintenance circuit card

This card, described in Remote Maintenance Circuit Card (page 174), automatically monitors a number of internal components, including:

- Temperature
- System clock
- Memory

Digital Networking

Several networking tests are available to diagnose networking problems.

Remote Connection Test

The remote connection test checks the transmission path from the local to the remote machine. This test can be performed on a remote machine with which the customer plans to exchange voice messages.

Channel Internal Loop-Around Test

The channel internal loop-around test checks the operation of an individual channel on the networking card. This test ensures that the board is operating correctly.

Modem Loop-Around Test

The modem loop-around test checks the connectivity between the networking card and the modem through a channel configured as RS-232. The test sends a signal from the networking card to the modem and back. This test ensures that the card and the modem are communicating and that the modem is configured correctly.

Network Loop-Around Test

The network loop-around test checks the data transmission path that connects the local Intuity AUDIX machine with the service office (SO) and the public network.

Note:

The system administrator might have to reset the networking card after performing a networking diagnostic test.

TCP/IP

The TCP/IP diagnostics can be used when subscribers are experiencing problems with Intuity Message Manager, Enhanced List Application (ELA), or mailbox synchronization with a supported email application. TCP/IP diagnostics are also used in connection with digital networking and Ethernet LAN connectivity, either as part of diagnosing a reported subscriber problem or as part of troubleshooting an alarm. These diagnostics allow you to:

- Test the system's TCP/IP software.
- Test the connection between the system and a subscriber's PC.
- View the statistics for the LAN card.

For more information, see [Intuity Digital Networking](#).

Voice Card and Connections

Voice card diagnostics check each channel on the voice card for loop current. Loop current is present on a channel when a live telephone line is physically connected between the voice port and a properly administered switch port.

Serial Port Circuit Card and Connections

The serial port circuit card is equipped with diagnostic utilities that allow a customer's system administrator to troubleshoot the circuit card, for example, to monitor lead status, view port parameter settings, and test functionality.

Serial Port External Loopback Test

This test is a program that writes a data pattern to one or more selected ports, reads the data back, and then compares the two sets of data. Before you can execute this test, the transmit and receive pins must be wired together.

Serial Port Internal Loopback Test

This test is the similar to the external loopback test, but it does not require that the transmit and receive pins be wired together. Because it does not test the full cabling of the port, the internal loopback test is not as thorough as the external loopback test.

Serial Port Send Test

The send test simply writes a continuous stream of printable alphanumeric characters to the specified port. This test is helpful when a new device is being added to the system and a continuous stream of data is required to resolve wiring issues.

Switch Integration

Switch integration is the mechanism by which the system and the switch share information to expedite and enhance call processing. At this time, switch integration diagnostic utilities are available for Data Communications Interface Unit (DCIU) integrations and Digital Station Interface circuit card integrations.

DCIU Integrations

Diagnostic utilities for DCIU integrations include:

- View switch link status.
- Diagnose the switch integration card.

- Reset switch integration hardware and software.
- Busy-out the switch integration link.
- Release the switch integration link.

For more information, see the switch integration documentation specific to the switch installed at the customer's location.

Digital Interface Circuit Card Integrations

Diagnostic utilities for digital interface circuit card integrations include the VBPC Link Status screen. This screen shows usage and status of the VBPC ports.

Note:

This is not a real-time display.

Database Audits

During normal operation, Intuity AUDIX databases work independently of each other under the direction of a set of software and hardware processes. These processes coordinate the files, databases, and system hardware.

Since databases are handled separately, it is possible for one database to contain information that conflicts with another database. For example, if a subscriber is removed from the Intuity AUDIX database, other databases could still contain messages addressed to that subscriber or mailing lists that include that deleted subscriber's name.

To reconcile possible conflicts among databases, software programs called *audits* run automatically (or can be performed on demand) to check for inconsistencies and, when possible, update information in databases to correct problems. For example, audits remove all references to a deleted subscriber which includes deleting the subscriber's name from mailing lists and canceling message deliveries to that subscriber.

Intuity AUDIX Voice Messaging Audits

The Intuity AUDIX feature package performs many regular internal audits on the databases of information it maintains. These databases include:

- Mailboxes
- Mailing lists
- Network data
- Personal directories
- Subscriber data

- Voice files

Note:

These audits can also be run on demand.

**Networking
Database Audits**

The networking database audit consists of a series of internal checks. These checks verify, for example, that files are not corrupted and that values within the files are within the proper ranges. The networking database consists of two parts: the networking administration database and the remote subscriber update status database.

**Switch Integration
Software Audits**

The switch integration software in the system is part of a layer that is accessible to all the software applications. Therefore, the software maintains its own database of subscribers to execute the switch-related requests from the applications. Subscribers are added to the switch integration database automatically after being added to an application, such as Intuity AUDIX.

Because the switch integration software maintains its own database, it must be synchronized periodically with the other application databases. This synchronization is accomplished through several audits.

**Lodging Mailbox
Database Audit**

The Lodging mailbox database audit consists of a series of internal checks between the Lodging speech database and the Lodging mail database. If the audit finds discrepancies, Lodging reports them. The administrator can then schedule a time to run the Audit and Fix Database command to resolve them.

RAID

The impact of disk failures is greatly reduced with the use of Redundant Array of Independent Disks (RAID). RAID is a method of providing complete data redundancy using a minimum amount of storage capacity for storing the information. RAID allows for greater disk capacity per disk and mirroring of the information contained on the disks. Two forms of RAID are available:

- RAID level 1 is offered on the MAP/40P models. RAID level 1 provides a high level of data availability through disk mirroring where a duplicate copy of the data from one disk drive is copied and stored on another disk drive.
- RAID level 5 is standard on the MAP/100P models. RAID level 5 provides data the highest read data transaction rate by allowing for concurrent read and write processes of data transfer.

Requirements

Mirroring requires the base platform configuration with switch integration. A mirrored system requires twice the disk capacity of a standard unmirrored configuration. Therefore, in most cases, the customer must also add one or more additional hard drives to the system.

Capacity

Mirrored disks provide no additional speech storage space since two copies of the exact same data are maintained. In fact, enabling mirroring could decrease the potential speech storage capacity of the system.

Note:

A portion of the first disk drive in any Intuity AUDIX system is dedicated to nonspeech data. See [System Components and Capacities](#) for more information.

The following table shows the differences in speech storage space between mirrored and unmirrored configurations.

Table: Mirrored and Unmirrored Speech Storage Comparisons

Platform	Number of 4.5 GB Disks	Speech Storage Space (hrs)	
		Mirrored	Unmirrored
MAP/5P and MAP/5PV3	1–2	None	155
MAP/40P	1–2	155	425
MAP/100P	3–6	455	1255

Connectivity

Besides the installation of additional hard disk drives, mirroring requires no additional hardware or connections beyond the standard configuration.

Security

The system is designed to be very secure. The following is a list of some of the security features.

Subscriber Passwords

Passwords protect all messaging mailboxes. The system offers password aging and password timeout mechanisms that can help restrict unauthorized subscribers.

Subscriber passwords must comply with the following guidelines:

- Passwords can be from five to 15 digits in length, although the system administrator can specify a minimum required length.
- A password cannot:
 - Be the same number as the extension (for example, extension 34555 cannot use password 34555).
 - Contain repeated digits (for example, 77777).
 - Be consecutive digits (for example, 12345).

The system administrator can administer the system to age subscriber passwords, at which time subscribers must select a new password.

Callers are given three attempts per call to enter their mailbox correctly before they are automatically disconnected. An administrator can also specify how many consecutive invalid attempts are allowed before a voice mailbox is locked.

Administrative Logins and Passwords

There are three logins to access the system. Each login has its own unique password and provides varying levels of access to the features and capabilities of the system. This layered approach limits access to particularly powerful features and is convenient when delegating system administrator responsibilities.

All of the subscriber password compliance guidelines apply, including password aging, for both the system administrator (sa) and voice mail (vm) logins.

Note:

Enhanced call transfer is available for DCIU or CLAN switch integration.

Enhanced Call Transfer

With Enhanced Call Transfer, the system uses a digital control link message to initiate the transfer. The switch then verifies that the requested destination is a valid extension in the dial plan. The system verifies that the digits entered contain the same number of digits as are administered on the Intuity AUDIX system for extension lengths. When callers request a name addressing transfer, the name must match the name of an Intuity AUDIX subscriber (either local or remote) whose extension number is in the dial plan.

Call transfers are subject to control by the customer system administrator. This administrative control is designed to encompass all of the numbers to which a caller can transfer.

Controlling Call Transfers Using Allowed and Denied Numbers

To transfer to another extension, the subscriber presses , the digits of the extension to which he or she wants to transfer, and . The system administrator can administer the Intuity AUDIX system to permit transfers to only certain allowed numbers or ranges of numbers. For example, the system administrator can administer the system to forbid call transfer to extensions beginning with 9, if dialing this number results in access to an outside line. See [Creating Restricted Number Lists](#) for additional information on establishing dialing restrictions.

If a caller enters an extension that is an allowed transfer, the switch completes the transfer, disconnects the Intuity AUDIX system, and sends a “disconnect — successful transfer” message to the system. If the number is not valid, the switch leaves the system connected to the caller

and sends a “fail” message to the Intuity AUDIX system. Then the system plays an error message to the caller and prompts for further activity.

Controlling Call Transfers Using “Subscribers versus Digits”

Allowing ☒ ☒ transfers increases the risk of toll fraud. If the customer decides to allow ☒ ☒ transfers, the system can be set to allow transfers by either *subscribers* or *digits*.

- Transfer by subscriber — in a system administered to allow transfer by subscriber, callers can only transfer to an administered AUDIX subscriber.
- Transfer by digits — in a system administered to allow transfer by digits, the destination telephone number must correspond to a pattern administered in the Allowed and Denied Numbers menus. It must also have the same number of digits as extension numbers within the Intuity AUDIX system.

Restricting call transfers to administered subscribers is the more secure of the two options. Fraudulent use of call transfer is virtually eliminated when the Intuity AUDIX system verifies that the specified destination is an administered number and denied numbers are administered carefully to include such things as a phantom mailbox beginning with 9. However, you must also consider that if digits *are* specified, the caller might find a way to access the switch and to use switch features and functions to complete fraudulent long-distance calls.

Switch Administration

The current Intuity AUDIX documentation set includes detailed instructions on how to administer switches to prevent toll fraud. For more information, see [Switch Administration Tasks Checklist](#) and the switch integration book for the specific switch at the customer’s site.

Outcalling

Toll fraud can be minimized when outcalling to Intuity AUDIX subscribers who are offsite and often have their message notification forwarded to a call pager. To do so, the outcalling:

- Ports can be assigned to a toll-restricted Class of Restriction (COR) that allows calling only within a local area.
- Numbers can be entered into an unrestricted calling list for either ARS or Toll Analysis.
- Numbers can be limited to 7 or 10 digits to restrict outcalling to, for example, international extensions.

Unattended Backups

The nightly unattended (automatic) backup that the Intuity AUDIX system performs might not have enough information to restore the system completely. However, the backup does contain enough information to

return the system back to working order should a problem occur. This offers customers the security of always having the previous day's messaging and system information available.

At a minimum, the customer should have enough tape or disk cartridges to complete seven backups (one for each night of the week). Depending on the needs of the business, these tape or disk cartridges can be archived for a longer length of time or can be swapped out daily. This ensures that the previous day's messaging and system information is available at any time.

**CAUTION:**

Unattended backups do not always store voice data. In the event of a system failure, all voice messages are lost unless you have also performed an attended backup.

Additional Maintenance Tools

Several other Technology products can enhance the Intuity AUDIX system maintenance environment.

Trouble Tracker

As described under Alarms (page 173), most system configurations will send alarms to a remote service center. However, as an option, the system can also send alarms to a Trouble Tracker system. Trouble Tracker is a Avaya product that uses databases to monitor a network. For more information on Trouble Tracker, see *Introduction to Trouble Tracker*, 585-225-021.

Inband PBX Configuration Tool

An administrative tool that is only used by Field technicians for providing services. This tool is used to administer inband parameters on the voice mail for inband switch integration.

New Installations

Intuity AUDIX new installation topics include:

- Analyzing Customer Needs (page 185)
- Platform Operating Requirements (page 186)
- Site Specifications (page 186)
- Switch Administration (page 186)
- Points of Demarcation (page 186)

Analyzing Customer Needs

To ensure the new Intuity AUDIX system meets the needs of the customer, an account representative conducts an in-depth analysis of the customer site and business requirements prior to installation. This analysis is provided by the Sales and Design Support Center (SDSC) for customers within the U.S. and by the International Technical Assistance Center (ITAC) for customers in other countries. It includes an evaluation of the following:

- Whether the business has a single location or multiple locations
- The number of end users (per site, if applicable)
- The estimated call volume
- The impact of any optional features purchased on the system capacity
- Any existing LAN or other networking configuration, and the information the technicians need to add a server to the system, such as TCP/IP addressing, Ethernet configuration, and so on

Note:

It is the customer's responsibility to install and configure the LAN hardware and software. Therefore, the customer's PC/LAN administrator and email administrator must be included in the planning phase.

- The number of Intuity AUDIX machines that will be required

The results of the analysis are recorded on a series of worksheets that the installation technicians use to configure the system when it arrives at the customer's site.

Platform Operating Requirements

Platform operating requirements vary based on the type of platform. See [Weight and Space Considerations](#) for a list of operating requirements for each of the Intuity AUDIX platforms.

Site Specifications

Several elements need to be considered when determining where to place the Intuity AUDIX platform. See [Environmental Considerations](#) and [Weight and Space Considerations](#) for requirements.

Switch Administration

Before an installation can begin, the switch or PBX must be administered. See [Switch Administration](#) for situations requiring switch administration.

Points of Demarcation

A demarcation point defines the extent of responsibilities for a product. Beyond this point, the customer is responsible for providing overall service.

When planning for an Intuity AUDIX system, be aware of the following demarcations:

- Switches
- Local area network (LAN) connectivity for Message Manager or other supported email application
- Intuity FAX Messaging demarcation
- Intuity Internet Messaging email demarcation

- Intuity Voice Director demarcation
- Intuity Message Manager demarcation

Non-Avaya Switch Demarcation

Service technicians dispatched for Intuity AUDIX system installation are not responsible for making any connections directly to a non-Avaya switch. The demarcation point for non-Avaya switches depends on the type of switch integration:

- Serial configurations—immediately following the null modem
- Serial configurations with peripheral hardware—immediately following the translator or the modem, as applicable
- Inband configurations—immediately before the modular connectors
- Digital station interface configurations—the end of the Avaya-provided connector cables

Note:

Joint acceptance testing is recommended for systems integrated with non-Avaya switches.

LAN Connectivity Demarcation

The demarcation point for TCP/IP networking is the point of connection into the LAN circuit card. The customer is responsible for:

- The LAN cable
- The connector at the end of the cable for connection to the Intuity AUDIX system
- LAN administration not performed on Intuity AUDIX
- Maintaining the TCP/IP addresses and administration on the Intuity AUDIX system after the cutover, unless otherwise specified by contract

Service technicians dispatched for Intuity AUDIX system installation are not responsible for troubleshooting the customer's LAN. When planning or installing an Intuity AUDIX system, it is vital to include the PC/LAN administrator and email administrator, as applicable, in the process.

Intuity FAX Messaging Demarcation

Intuity FAX Messaging uses the same equipment as Intuity voice messaging. The IVC6 universal ports support both voice and fax messages without additional cabling or hardware. As with Intuity AUDIX, the point of demarcation for Intuity FAX Messaging is the same as the switch integration point of demarcation, that is, the switch box (for non-Avaya switches).

Service technicians dispatched for Intuity AUDIX system installation are not responsible for troubleshooting the customer's fax machines.

**Intuity Internet
Messaging
Demarcation**

The demarcation point for Internet Messaging is the same as that listed for LAN connectivity. Internet Messaging can only trace delivery of a message to the trusted server, the last point before delivery to the Internet Service Provider (ISP) or Internet connection. Message status can be traced in the Messaging Logs. Given the nature of Internet delivery mechanisms, a message cannot be followed between endpoints. This is a distinct difference from the digitally networked aspect of an Intuity AUDIX network, in which it is possible to trace the delivery of a message from origination to endpoint.

**Avaya Voice
Director
Demarcation**

The demarcation point for Voice Director is the same as that listed for LAN connectivity described above. In addition, the customer is responsible for:

- Acquiring a Windows-compatible computer and installing the necessary hardware system
- Installing the operating system
- All aspects of the LAN that provide the communication between the Intuity AUDIX system and the Voice Director server
- Installing the Voice Director software on the Voice Director server if the Professional Services offer is not purchased

After installation, the customer is responsible for:

- Maintaining the TCP/IP addresses
- Administration on the Intuity AUDIX system unless otherwise specified by the contract
- Verifying the accuracy of subscriber names found in the Voice Director pronunciation database

Service technicians dispatched for Intuity AUDIX system installation and maintenance cannot troubleshoot the customer's LAN or Windows-based workstation unless specified by contract.

Prior to activating service to local subscribers, the customer is responsible for verifying the pronunciations for all subscribers' names in the Voice Director pronunciation database.

**Intuity Message
Manager
Demarcation**

Intuity Message Manager is a windows client software and must have the correct LAN connectivity and IMAPI turned on in the Intuity AUDIX server or some optional applications will not perform correctly. The www.messenger which is a separate NT server much like the Voice Director must have these connections set properly. This NT server contains a web application that communicates to the Intuity server and client workstation (Windows, mac, and Sun) through a browser.

Upgrades and Updates

When you upgrade or update your Intuity AUDIX system it requires changing either the hardware or software. These include:

- Upgrades (page 189)
- Updates (page 190)

Upgrades

An upgrade can apply to the hardware or software components of an Intuity AUDIX system. However, in most cases, an upgrade affects both the hardware and the software components of a system.

There are four types of upgrades.

- Staged Upgrade

A staged upgrade is the process used to upgrade a pre-Release 4 Intuity AUDIX system to a Release 5 system. This process involves shipping a new system to a subscriber's site and transferring data from the old system to the new system via a LAN connection.

- Software Upgrade

A software upgrade is the process used to upgrade an existing Release 4 system to a Release 5, non-RAID, system without changing the hardware model designation. The general process of a software upgrade is first to install a CD-ROM drive and a removable disk drive in the Release 4 system, back up the data to removable disks, load a basic Release 5 system on the original hard drive, and then to restore the backed-up data.

- Platform Upgrade

A platform upgrade is the process used to upgrade an existing Release 4 or Release 5 system to a different platform. The general procedure is to install a removable disk drive in the Release 4 system (if upgrading from a Release 4), back up the entire system to removable disks, move the peripheral hardware from the old system to the new Release 5 system, and then restore the backed up data.

- RAID Upgrade

A RAID upgrade is the process used when upgrading an existing Release 4 MAP/100P system to a Release 5 RAID system. The general procedure, similar to the software upgrade process, is to install a CD-ROM drive and a removable disk drive in the Release 4 system, back up the entire system to removable disks, reconfigure the existing disks as a RAID array, load a basic Release 5 system on the RAID array, and then restore the backed up data.

Updates

An update is available to subscribers who have a Intuity AUDIX Release 5 system and want to install new features on the existing system. A software update updates only software packages already installed on the system.

The procedures for updating software vary based on the type of update that needs to occur. The procedure can be as simple as making a backup of the old system and then restoring the data in the new system. Or the procedure can be as complicated as installing new hardware components in both systems, backing up the existing data from the old system, restoring the data to the new system, and then removing the hardware components.

Migrations

Migration refers to the process of moving data from a non-Intuity AUDIX system to an Intuity AUDIX Release 5 system. The new Release 5 system is then used to accept and store messages for subscribers.

When performing a migration, it is not always possible to transfer all types of data. Therefore, careful planning is required for each migration.

The planning you do and the procedures you follow for the migration of your data depend on the system from which you are migrating. To find out more about planning for a migration, see [Planning a Migration to Intuity AUDIX Release 5](#). The planning sections include information about the data that is transferred, the steps required to prepare and conduct the migration, and a comparison of the two system configurations and features.

Access Security Gateway

Access Security Gateway (ASG) is an authentication interface you can use to secure the administration and maintenance ports on the Intuity AUDIX server. Whenever a subscriber begins a session on the server for purposes of administration or maintenance, the subscriber must enter a valid login ID. If the ASG interface is installed, the server issues a numerical challenge. The subscriber must enter the correct numerical response in order to access the Intuity AUDIX administration and maintenance features. Using ASG reduces the possibility of unauthorized access to the system.

ASG parameters can be administered to specify whether access to the system administration interface or maintenance interface requires ASG authentication. This protection can be assigned to all administration maintenance ports or to a subset of those ports. If the port being accessed is not protected by ASG, the standard Intuity login and password procedure is satisfactory for the subscriber to enter the system. See [Administering the ASG Gateway](#) for procedures for using the ASG interface.

Trusted Server Security

A trusted server is a software application in a domain outside of Intuity AUDIX. A trusted server uses its own login and password to launch a Intuity Messaging Applications Programming Interface (IMAPI) LAN session and access Intuity AUDIX mailboxes. Examples of trusted servers are:

- Synchronizer software running on an email server
- Enhanced List Application (ELA) software running as a server on the Intuity AUDIX system

Trusted servers can access and manipulate an Intuity AUDIX message just as an Intuity AUDIX application can do. See [Electronic Mail: Overview](#) for information pertaining to trusted servers, domains, and integration of email and other trusted server software with Intuity AUDIX.

When securing a system that allows access from another domain, you must consider security from both an internal and an external perspective. Internal security focuses on preventing or recovering from damage if a breach occurs. For example, a breach can occur when a virus is transmitted in a software file attached to the Intuity AUDIX message. External security involves administration to prevent access from an unauthorized source, such as a trusted server or trusted server administrator. See [Trusted Server Security](#) for information specific to security.

There are two trusted server administration screens, the Trusted Server Profile screen and the IMAPI Password screen. Detailed information and procedures for completing these screens can be found in:

- [Setting the IMAPI Password](#)
- [Setting Up IMAPI Sessions for Trusted Server Access](#)

Unauthorized System Use

You can minimize the risk of unauthorized access to your system by implementing guidelines for your voice mail password and system administrator password. These guidelines should include [changing the default administrator password](#), [establishing administrator password standards](#), and [administering password aging](#).

Note:

The trusted server has direct access to Intuity AUDIX system and its functionality. See [Trusted Server Security](#) for security information specific to the trusted server.

Security and Administrative Passwords

Your Intuity AUDIX system comes equipped with administrative password features and options that you control to assist you in securing your system. These include:

- Changing the default administrator password
- Administrator password standards
- Administrator password aging

Changing the Default Administrator Password

When you first get your system, both the system administrator (sa) login and voice mail administrator (vm) logins come with default passwords. You are required to change these passwords immediately. See [Administration Passwords](#) for additional information pertaining to administering your password.

Administrator Password Standards

Intuity AUDIX administrator passwords must conform to certain minimum standards. These standards require that all passwords must be

from six to 11 alphanumeric characters. Of those six to 11 characters, at least one must be numeric and two must be alphabetical.

Note:

The system *does not allow* the password to be:

- A sequential alpha or numeric string, for example, *123456*
- A repetitive string, such as *bbbbbb*
- The same number as the subscriber's extension, for example, extension *34555* and password *34555*

Additionally, the following are minimum standards for ensuring password security:

- Do not put the password on a programmable function key.
- Never use obvious or trivial passwords, such as a telephone extension, room number, employee identification number, social security number, or easily guessed numeric or letter combinations (for example, *denver* or *audix*).
- Do not post, share, print, or write down passwords.
- Change the password at least once per month. You can administer your system to *age* the password and notify you when a new password is required. See [Administration Passwords](#) for additional information pertaining to administering your password.

Administering Password Aging

You can administer several parameters of the password aging feature to enhance the level of security the system maintains. Password aging ensures that administration passwords are changed at reasonable intervals.

Three items used to define the parameters associated with password aging are:

- Password expiration
- Minimum age before changes
- Expiration warning

Unauthorized Mailbox Use

One type of voice mail fraud occurs when a hacker is able to break in to a voice mail system. Once connected, the hacker can access a mailbox and change its password and greeting. This provides the hacker full use of the mailbox, which can be costly if access is gained to the voice mail system through an 800 number.

Note:

If a subscriber receives any strange Intuity AUDIX messages or reports that his or her personal greeting was changed, or if for any other reason you suspect that your AUDIX facilities are being used by someone else, contact [Avaya Network Corporate Security](#).

Mailbox Administration to Prevent Unauthorized Use

Several precautionary measures can be taken to prevent unauthorized use of your voice mail system. These are:

- Administer your system so that the number of consecutive unsuccessful attempts permitted to log in to a mailbox is low. This helps block break-in attempts.
- Deactivate unassigned mailboxes. When an employee leaves the company, remove the subscriber profile and, if necessary, reassign the mailbox.
- Do not create mailboxes before they are needed.

Subscriber Mailbox Security and Password Administration

To minimize the risk of unauthorized access to your Intuity AUDIX mailboxes, ensure that your subscribers follow these guidelines for Intuity AUDIX passwords.

- Establish minimum requirements for creating a password. For example, a password must be at least five digits and a minimum length of at least one digit greater than the extension number length. For maximum security, subscriber's passwords can be up to 15 digits.
- Require that new subscribers change the default password the first time they log in to the Intuity AUDIX system. This ensures that only the subscriber has access to his or her mailbox.
- Administer the Password Aging field located on the System Parameters Features screen. Password Aging requires subscribers to change their password at a predefined interval. See [Defining Basic Features and Parameters](#) for additional information on password aging and the System Parameters Features screen.
- Prohibit personal greetings that indicate the called extension will accept calls billed to a third party.
- Prohibit the use of obvious or trivial passwords, such as a room number, employee identification number, social security number, or easily guessed numeric combinations.

Note:

The Intuity AUDIX system does not accept sequential numbers such as 12345, repeated numbers such as 33333, and the subscriber's extension number.

- Discourage the practice of writing down passwords, storing them, or sharing them with others. If a subscriber must write down a password, advise the subscriber to keep the document that contains the password in a secure place. Never discard a document that includes a password while the password is active.
- Prohibit the programming of passwords onto auto-dial buttons.

Unauthorized Use of Outcalling and AMIS Analog Networking Call Delivery

[Unauthorized Mailbox Use](#) discusses how to prevent someone from breaking in to your system. This section discusses how to minimize the risk of someone who is already in your system from making unauthorized calls. In this case, the unauthorized usage could be from an employee or from someone outside of your organization who has breached your system security and gained access.

Outcalling Security

Outcalling is a Intuity AUDIX feature that allows the system to dial subscribers' numbers to notify them that they have new messages. Typically, message notification is forwarded to a call pager number. When this feature is enabled, four options exist to minimize toll fraud:

- The Intuity AUDIX voice ports can be assigned to a toll-restricted Class of Restriction (COR) that allows calling only within a local area.
- The outcalling numbers can be entered into an unrestricted calling list for either Automatic Route Selection (ARS) or Toll Analysis.
- Outcalling numbers can be limited to seven digits or 10 digits

Note:

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

- You can restrict the use of outcalling for specific subscribers.

Restrict Outward Dialing

Restricting outward dialing can minimize the security risk associated with outcalling. To restrict outward dialing, you can assign an outward-restricted Class of Restrictions (COR) to the Intuity AUDIX voice ports. The method you use to make this assignment varies depending on the type of switch administered:

- For the G1, G3, and System 75 switches:
 - Use **change cor** to display the Class of Restriction screen.
 - Create an outward-restricted COR by entering **outward** in the Calling Party Restriction field.
 - Assign the outward restricted COR to the voice ports.
- For the G2 and System 85 switches:
 - Use **P010 W3 F19** to assign outward restriction to the voice mail ports' Class of Service (COS).
- For the MERLIN LEGEND:
 - 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, AMIS analog networking, and fax call delivery.

Analog Networking Call Delivery

To increase security for AMIS analog networking, including the Message Delivery service and FAX call delivery, restrict the number ranges that can be used to address messages. Be sure to assign all the appropriate PBX outgoing call restrictions on the Intuity AUDIX voice ports. If your switch is a MERLIN LEGEND, also use an allowed number list.

Fax Call Delivery

There are no fax-specific security issues. However, since Intuity FAX Messaging requires that the AMIS Analog Networking feature be turned on, be sure that outgoing Intuity AUDIX voice ports have the appropriate PBX calling restrictions. Such restrictions are discussed below following [Switch Administration](#) and in [Intuity AUDIX Administration](#).

Preventing Fraudulent Use

When access to a dial tone is established, whether that dial tone is authorized or unauthorized, subscribers are able to dial a Trunk Access Code (TAC), Feature Access Code (FAC), or extension number. If the proper security has not been administered on the system, subscribers have the ability to make fraudulent long-distance calls.

The occurrence of fraudulent calls can be minimized by setting restrictions on the Intuity AUDIX system. These restrictions can be administered on the applicable Intuity AUDIX feature or on itself.

Intuity AUDIX Administration

To minimize the risk of unauthorized use, you can administer restrictions on the Intuity AUDIX system. The following features can be administered to restrict unauthorized calls:

- Basic Call Transfer (page 203)
- Enhanced Call Transfer (page 204)
- Controlled Transfer out of AUDIX (page 204)

In addition to administering these features, additional security restrictions can be set on the Automated Attendant Security (page 205).

Basic Call Transfer

Basic Call Transfer allows a caller to dial any number, providing the number of digits matches the length of a valid extension. If a caller dials the first digits of a valid long-distance telephone number, the AUDIX system passes the digits on to the switch. For example, if a caller dials **91809**, (where **9** is the access code, **1** is the long-distance code, and **809** is the area code), the Intuity AUDIX system validates these numbers and passes them on to the appropriate switch. The caller then enters the remaining digits of the telephone number to complete the call. There is no security mechanism to verify if the use of the system is authorized or unauthorized.

However, if you restrict calls so that they can only be transferred to administered 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**). When setting the "subscriber" restriction, do not administer mailboxes that start with the same digits as a valid switch trunk access code. See [Security Overview: Basic Call Transfer](#) for additional information on administering Basic Call Transfer.

Enhanced Call Transfer

Enhanced Call Transfer allows compatible switches to transfer messages digitally over a data link. Subscribers who are administered with Enhanced Call Transfer can transfer calls only to other extensions in the switch dial plan. When using Enhanced Call Transfer, Intuity AUDIX verifies that the digits entered are the same as the digits administered on the Intuity AUDIX system. In addition, with Enhanced Call Transfer, the Intuity AUDIX system verifies that the digits entered match the extension number for an administered subscriber. Using Enhanced Call Transfer to verify and validate transferred calls reduces fraudulent use significantly. See [Security Overview: Enhanced Call Transfer](#) for additional information on administering Enhanced Call Transfer.

Controlled Transfer out of AUDIX

Most unauthorized long distance call attempts occur as a caller attempts to transfer out of the Intuity AUDIX system. You can control call transfers out of the Intuity AUDIX by administering the system to limit the numbers to which a caller can transfer. Intuity AUDIX provides two menus that allow you to administer call transfer restrictions. They are the Allowed Numbers Menu and the Denied Numbers Menu.

Allowed Numbers Menu

Transfers a caller out of the Intuity AUDIX system only if the pattern of the number dialed corresponds to a pattern permitted on the Allowed Numbers menu. If the number corresponds, the Intuity AUDIX system initiates the transfer.

You should restrict such transfers as described under [Controlling Call Transfers](#). Using this menu system, you can specify extensions to which a caller can or cannot transfer a call.

Denied Numbers Menu

Callers can not transfer to extensions expressly denied on the Denied Numbers menu. For example, you can restrict call transfer to extensions beginning with 9 if dialing this number results in access to an outside line.

If a caller requests a transfer to a valid extension, the switch completes the transfer, disconnects the Intuity AUDIX system, and sends a "disconnect — successful transfer" message to the system. If the extension is *not* valid, the switch leaves the system connected to the caller and sends a

“fail” message to the Intuity AUDIX system. Then the system plays an error message to the caller and prompts for further activity.

Transfer Restriction — System-Parameters Features Screen

A method of setting transfer restrictions is to activate Call Transfer on the System-Parameters Features screen. If this feature is activated to allow *T transfers, the risk of toll fraud attempts can be minimized by:

- Administering permitted and denied numbers as described in [Basic Messaging: Controlling Call Transfers](#). In this case, if the pattern of the number dialed corresponds to a pattern permitted on the Transfer Security menu system, and if that number is a valid extension number for an administered subscriber (either local or remote), transfer is allowed.
- Setting the `Transfer Restriction` field on the System-Parameters Features screen to *subscribers*.

Note:

If the `Transfer Restriction` field is set to *digits*, the option does not minimize toll fraud. This option is administered by Avaya Technologies only as a special service to customers wanting the digits option.

Restricting call transfers to administered subscribers using the `Transfer Restriction` field is more secure than using the Denied Numbers menu. It virtually eliminates the fraudulent use of call transfer since the Intuity AUDIX system can verify that the specified destination is a permitted number. If digits are specified, on the other hand, the caller might find a way to access the switch and use switch features and functions to complete fraudulent long-distance calls.



CAUTION:

If you assign nonresident subscribers extension numbers that start with the same digit or digits as switch trunk access codes (such as 9), you must carefully administer the restrictions using the `Transfer Restriction` field. (Nonresident subscribers are subscribers with a mailbox but no telephone on the switch.)

Automated Attendant Security

Automated attendants are used by many companies to augment or replace a switchboard operator. When using automated attendants, incoming calls are received and sent to a switch. From this switch, the call is routed to the appropriate destination based on signals received from the automated attendant. If the switch is not properly administered, unauthorized toll calls can be completed at the expense of the owner of the switch.

For example, in some switches, 9 is used to access a dial tone. When asked to enter an extension, the unauthorized subscriber can enter the digits 9180. If the system is not properly administered, the automated

attendant passes the call back to the switch. The switch reacts to **9** as a request for a dial tone. The digits **180** become the first numbers of a **1-809** call to the Dominican Republic. In another example, when dialing the digits **9011**, **9** is used to access a dial tone and, the digits **011** become the first digits of an international call. The unauthorized subscriber then enters the remaining digits of the telephone number, and the call is completed. This scenario works the same way with a voice mail system.

Before you set up an automated attendant, restrict transfer out of the Intuity AUDIX system as described under [Basic Messaging: Controlling Call Transfers](#).

Switch Administration

To minimize the risk of unauthorized use of the voice messaging system or automated attendant system, you can administer restrictions using the following methods:

- Assigning a low facilities restriction level (FRL)
- Restricting toll areas
- Blocking subscriber use of trunk access codes
- Creating restricted number lists
- Creating disallowed number lists
- Creating allowed number lists

See [Security Overview: Switch Administration](#) for detailed information pertaining to administering your switches.

Detecting Voice Mail Fraud

Several reporting mechanisms can assist you in determining voice mail fraud.

Topics include:

- Call Detail Recording (or SMDR) (page 207)
- Call Traffic Report (page 208)
- Trunk Group Report (page 208)
- SAT, Manager I, and G3-MT Reporting (page 209)
- ARS Measurement Selection (page 209)
- Automatic Circuit Assurance (page 209)
- Busy Verification (page 209)
- AUDIX Traffic Reports (page 209)

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:

The optional Call Accounting System (CAS) can be installed on the system, allowing you to create customized reports with your G1, G3, or Intuity MERLIN LEGEND CDR/SMDR data. The optional HackerTracker program works in conjunction with CAS Plus Version 3 to alert you to abnormal calling activities.

Review the CDR data 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 records only 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.

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.

ARS Measurement Selection

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

Automatic Circuit Assurance

This monitoring technique detects a number of short-holding-time calls or a single long-holding-time call that could 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, when a long-holding-time alarm occurs on a trunk-to-trunk call), you may want to use the Busy Verification (page 209) feature to monitor the call in progress.

Busy Verification

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

AUDIX Traffic Reports

The Intuity AUDIX system tracks traffic data over various time spans. 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. See [AUDIX Traffic Reports](#) for more information on running and using reports.

Avaya's Statement of Direction

Year 2000 Compliance

During the year 2000, the Intuity AUDIX system will comply with most of the Year 2000 specifications that relate to the handling of calendar dates. However, some features (for example, reports and call data records) could function differently when date data spans both the years 19XX and 20XX.

Customers are responsible for ensuring that their applications are Year 2000 compliant. In most cases, the most time-consuming part of Year 2000 compliance work is reviewing or testing applications. If you find outages, usually only minor changes are necessary for compliance. For example, you might need to replace a hard-coded "19XX" with a more appropriate entry. If your application was not developed by Avaya Technologies, contact the vendor with whom you contracted to discuss Year 2000 compliance for the application.

Investment Protection When Migrating or Upgrading to Intuity AUDIX Release 5

Clear migration and upgrade paths and investment protection incentives have been established to help customers during the transition from other Avaya messaging systems to a Intuity AUDIX Release 5 system.

Migration to Intuity AUDIX Release 5

The following table details the current strategy for maintaining hardware, software, and data across products.

Table: Investment-Protection Strategies

Product	Release	Data Maintained
DEFINITY AUDIX	R1.0 – R3.2	All data and voice messages.
AUDIX R1	R1V5 and later	Subscriber data, messages, names, and greetings.
AUDIX Voice Power	R2.0 and later	Subscriber data.
Intuity AUDIX	R2.0 and later	Subscriber data, messages, names, greetings, and announcements.
Intuity AUDIX	R1.0	N/A – An Intuity AUDIX R1 system must be upgraded to a R2.0 or later to be capable of upgrade to Intuity AUDIX R5.

See *INTUITY AUDIX Messaging Solutions Release 4 Planning for Migrations*, 585-310-606, for more information on migrating from a Avaya product release prior to the ones listed above.

Note:

Migrations from CONVERSANT Intro Voice Response (IVR) to a Avaya Intuity system are not supported.

If customers are migrating from another Avaya voice messaging system, they might be eligible for credits toward the price of a new Intuity AUDIX system based on their current hardware and software investment. This includes any RTU agreements in effect between the customer and Avaya, which can be transferred from the old to the new system. Avaya account representatives have more information.

Upgrades to Intuity AUDIX Release 5

Three types of upgrades are available:

- System upgrade

A system upgrade replaces a Avaya Intuity Release 2 or Release 3 system with a Release 4. This involves replacing the R2 or R3 computer with a new computer and transferring all customer data to the new computer.

Note:

Avaya Intuity Release 1 systems must be upgraded to Release 2 before making the transition to Release 5.

- Software upgrade

A software upgrade increments an existing Intuity AUDIX Release 5 system to the current version of the software, for example, from Release 4.0 to Release 4.1.

- Platform upgrade

A platform upgrade advances an existing Intuity AUDIX Release 5 platform model to a larger capacity model, for example, from a MAP/40s to a MAP/40.

See [New Installations](#) or [Upgrades](#), and [Migrations](#), for more information.

Avaya'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, Avaya intends to its strengthen relationships with 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 tradeoff is required between reduced risk and ease of use and flexibility. Customers who use and administer their systems make this tradeoff 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 Avaya 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 tradeoff decisions they make and to ensure the greatest security possible, Avaya commits to the following:

- Avaya 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.
- Avaya'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 Avaya products and services.

- 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.
- 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, promptly initiate ways to impede those schemes, share our learning with our customers, and work with law enforcement officials to identify and prosecute fraudulent subscribers 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.

Avaya Toll Fraud Crisis Intervention

If you suspect you are being victimized by toll fraud or theft of service and need technical support or assistance, you can receive security information from Avaya 24 hours a day, 365 days a year. See [Avaya Support](#) for a complete list of security organizations and contact numbers.

Avaya Corporate Security

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

Index

A

Access Security Gateway (ASG)

- concepts, 193

ADAP

- adding optional components, 168
- concepts, 167
- connecting, 167
- managing data, 167

administration

- accessing and administering interfaces, 159
- activating Internet Messaging, 165
- activating the online Help system, 163
- administering ELA for Intuity AUDIX, 99
- administering Intuity AUDIX for ELA, 99
- administering through remote access, 164
- concepts, 159
- definition of the Intuity AUDIX screen layout, 162
- system logins, 163
- using AUDIX screens, 162
- using Intuity windows, 161
- using the telephone interface, 160

administration tools and utilities

- AUDIX Administration and DataAcquisition (ADAP), 167

- backing up and restoring, 169

- call accounting system, 168

- concepts, 167

alarms

- concepts, 173
- levels, 173
- logs, 173
- major, 173
- minor, 173
- notification, 174
- resolution, 174
- warning, 174

AMIS analog networking

- concepts, 119
- connecting, 120
- features, 120
- operating, 121
- requirements, 120

- analog networking call delivery, 202

audits

- database, 178
- voice messaging, 178

B

- backup and restore

- concepts, 169
- definition of attended backup, 169
- definition of unattended backup, 169

C

- call accounting system, 168
- CELP, code-excited linear prediction (CELP), 117
- centralized voice mail with mode code network, 157
- circuit card, concepts, 33
 - RAID controller, 35
 - SCSI controller, 35
 - speech and signal processor (SSP), 37
 - super serial, 37
 - switch interface, 37
 - tip/ring, 33
 - video controller, 34
- circuit cards
 - remote maintenance, 174
- comparison of system platforms
 - components and capacities, 40
 - power requirements, 40
 - space considerations, 39
 - weight considerations, 39
- Compliance, year 2000 (Y2K), 211

D

- database audits
 - concepts, 178
 - lodging mailbox, 179
 - networking, 179
 - switch integration software, 179
 - voice messaging, 178
- DCIU
 - definition of the interface, 130
 - viewing the configuration, 134
- demaracation
 - points of, 186
- demarcation
 - FAX Messaging, 187
 - Internet Messaging, 188
 - LAN connectivity, 187

- non-Avaya switch, 187
- Voice Director, 188

- detecting fraud
 - AUDIX traffic reports, 209
 - automatic circuit assurance, 209
 - busy verification, 209
 - call detail recording, 207
 - call traffic report, 208
 - SAT, Manager I, and G3-MT report, 209
 - trunk group report, 208
 - voice mail, 207

- diagnostics
 - concepts, 175
 - definition of digital networking problems, 176
 - serial port circuit card connections, 177
 - switch integration, 177
 - TCP/IP, 176
 - voice card connections, 177

- digital networking
 - capacities, 112
 - channel support, 114
 - connecting, 113
 - DCP connections, 113
 - description, 111
 - encoding methods, 117
 - features, 115
 - modems, 112
 - operations, 117
 - overview, 111
 - requirements, 112
 - RS-232 connectivity, 113

- distributed communications system
 - concepts, 149
 - configuration, 150
 - host switches, 150
 - operating, 150
 - overview, 149
 - requirements, 151

E

- electronic mail integration, concepts, 54
- email
 - definition of LAN traffic, 94

- definition of message size, 94
- planning, 94
- Enhanced List Application (ELA)
 - concepts, 97
 - definition of external security, 101
 - definition of internal security, 102
 - definition of local area networks, 100
 - definition of port usage, 100
 - definition of remote messages, 100
 - features, 97
 - implementing, 99
- F**
- FAX call delivery, 202
- FAX Messaging
 - definition of operations, 70
 - definition of requirements, 69
 - overview, 67
 - planning considerations, 71
- I**
- IMAPI sessions
 - trusted server security, 195
- inband signaling, 129
- incoming mailbox, concepts, 51
- integration methods
 - concepts, 129
 - DCIU interface, 130
 - digital station interface circuit card, 130
 - inband signaling, 129
 - serial interface, 129
 - viewing a digital station interface configuration, 135
 - viewing DCIU configuration, 134
 - viewing inband switch configuration, 132
 - viewing serial switch configuration, 133
- Internet Messaging
 - administering security, 95
 - capabilities, 90
 - concepts, 89
 - definition of email message sizes, 94
 - definition of Web-based administration, 92
 - features, 89
 - impact on the LAN, 94
 - planning, 93
 - receiving email, 90
 - security issues, 95
 - sending email, 90
- L**
- Lodging FAX Messaging
 - available languages, 106
 - concepts, 103
 - features, 104
 - requirements, 105
- logs
 - activity of, 172
 - administrator, 172
 - concepts, 172
 - definition of alarm, 172
 - definition of maintenance, 173
- M**
- mailboxes
 - concepts, 50
 - incoming concepts, 51
 - outgoing concepts, 51
- maintenance
 - additional tools, 183
 - alarms, 173
 - concepts, 171
 - definition of logs, 172
 - diagnostic tools, 175
 - digital networking tests, 176
 - RAID, 179
 - remote circuit card, 174
 - remote service center, 175
 - security features, 180
 - system, 171
- Message Manager
 - concepts, 73
 - definition of benefits, 74
 - definition of capabilities, 74
 - enhancements, 77
 - planning considerations, 80
 - requirements, 74
- messaging concepts
 - mailbox, 50

- message, 49
- overview, 49
- PC access, 53
- telephone access, 52

- migrations
 - concepts, 191

- modems
 - digital networking, 112

N

- networking problems
 - channel internal loop-around test, 176
 - diagnosing, 176
 - modem loop-around test, 176
 - network loop-around test, 176
 - remote connection test, 176

- new installation
 - analyzing customer needs, 185
 - concepts, 185
 - platform operating requirements, 186
 - points of demarcation, 186
 - site specifications, 186
 - switch administration, 186

O

- outcalling
 - security, 201
- outgoing mailbox, concepts, 51

P

- PC acces
 - Message Manager, 53
- PC access
 - electronic mail integration, 54
- planning
 - Internet Messaging issues, 93
- platform description
 - backplanes, 26
 - CD-ROM drive, 27
 - diskette drive, 27
 - general, 23
 - hard disk drives, 27
 - keyboard, 27

- modems, 28
- printers, 28
- removable cartridge drive, 27
- serial and parallel ports, 26
- speech storage, 27
- terminals, 29

- platform operating requirements, 186

- preventing fraudulent use
 - administration, 203
 - basic call transfers, 203
 - concepts, 203
 - controlled transfer out of AUDIX, 204
 - enhanced call transfer, 204
 - switch administration, 206

R

RAID

- concepts, 179

- release 5, new features
 - administrative and system, 12
 - Aria user interface, 9
 - concepts, 7
 - Email Messaging, 8
 - end-user enhancements, 9
 - FAX Messaging, 8
 - Lightweight Directory Access protocol (LDAP), 10
 - networking messages, 9
 - security capabilities, 10
 - system management, 11
 - voice messaging, 8

- release 5.1, new features
 - accessibility, 4
 - concepts, 1
 - extending fax dialing, 4
 - supporting www.messenger, 5
 - system capacities, 2

- remote access
 - concepts, 164
 - customer remote access, 164
 - services remote access, 164

- remote connection test
 - concepts, 176

- remote maintenance circuit card, 174

remote service center, 175
restrict outward dialing, 201

S

scheduling ELA message delivery, 100
security
 Internet Messaging, 95
serial interface, 129
setting
 transfer restrictions, 205
software components
 definition of, 43
 optional software applications, 44
 standard software components, 43
 UnixWare applications, 44
switch integration
 concepts, 125
 hardware devices and connections, 137
system
 unauthorized use, 197
system architecture layer
 applications, 18
 processing, 17
 service, 17
system logins
 concepts, 163
 definition of craft, 163
 definition of sa, 163
 definition of vm, 163

T

TCP/IP
 concepts, 123
telephone access, 52
trusted servers
 concepts, 98, 195

U

unauthorized system use
 AMIS analog networking, 201
 call delivery, 201
 concepts, 197

mailbox, 199
outcalling, 201
passwords, 197
preventing, 203
security, 197

upgrades
 concepts, 189
 platform, 190
 RAID, 190
 software, 189
 staged, 189

V

Voice Director
 capabilities, 84
 components, 84
 features, 84
 pronunciation editor, 85
 release 1 overview, 83
 requirements, 85
voice messaging
 considerations, 61
 features, 56
 operations, 58
 requirements, 58
 security, 61