INTUITY™ AUDIX® LX

Release 1.0
Mode Code Integration with
DEFINITY® Systems

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- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

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- A busy tone is received
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For additional documents, refer to the section entitled, "Related Documents" in "About This Book."

Acknowledgment
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Switch Integration Requirements

1

Overview

NOTE:
For Intuity AUDIX LX, some of the screens have been updated to Web-based administration and may not have been updated in this information. For more information refer to the Help on the appropriate page. In addition, refer to the Configuration Note for your switch information.

This chapter contains information that explains switch integration processes, terms, and requirements including a:

- Brief explanation of the switch integration processes
- An explanation of the switches supported by the Intuity AUDIX LX system
- Configuration descriptions that explain each of the components required to establish a link with the switch

Switch Integration

Switch integration refers to the sharing of information between a voice messaging system and a switch to provide a seamless interface to callers and subscribers. A fully integrated voice messaging system answers calls with information taken directly from the switch.

Mode Code Switch Integration

Ordinary tip and ring wiring is all that is necessary to connect INTUITY AUDIX and DEFINITY switch for mode-code integration purposes. Unlike the methods of switch integration just described, mode-code integration depends on the transmission of ordinary analog telephone signals between an INTUITY AUDIX system and a DEFINITY R6 or later switch. Signals from the INTUITY AUDIX system to the switch consist of switch-hook signals and touch-tones signals. Signals from the switch consist of call-progress signals and touch-tones signals.

Specifically, mode-code integration includes the following, as shown in Table 1-1.

Table 1-1. Mode Code Integration

Function	Mode Code	Notes
Connection Information:		
Calling Party ID	Yes	
Called Party ID	Yes	
Internal vs. External Call	Yes	Can provide internal and external personal greetings
Direct vs. Redirected Call	Yes	
Busy vs. No Answer	No	Cannot provide personal greeting for busy/no answer.
Message Waiting Indicator (MWI) Status	No	Cannot provide “Integrated Notification” of new messages in other services, i.e., Message Center or LWC on switch.
Call Disconnect Message	No	Mode Code uses “wink” on line.
MWI Control		
MWI On/Off	Yes	
MWI Audit	No	Could refresh one at a time.
Transfer Out of AUDIX	Basic	Basic transfer via switch-hook flash. Possibility of toll fraud. For description of call coverage.[1]
Transfer Into AUDIX	NA	Functionality is provided by switch.
Call Screening/Bridging	No	
*R for Call Answer	Yes	
Maintenance Features		

Table 1-1. Mode Code Integration

Function	Mode Code	Notes
Busy Out Voice Ports	No	
“Link Alive” Messages	No	
Time of Day Clock Sync	No	
DCS Transparency	No	Future work for Mode Code switches.
Digital Networking	NA	Not dependent on switch integration.

1. With “Basic Transfer”, calls transferred to the switch look like direct calls from Intuity AUDIX. They will follow the switch's coverage path for the “transfer-to” destination. With “Enhanced Transfer”, Intuity AUDIX provides the original calling and called party information, along with an indication of whether or not the switch should allow the call to follow the coverage path for the destination endpoint.

Connection through Analog Boards

Use ordinary tip and ring analog wiring to connect the messaging system to the switch. See the example that follows.

1. Run modular cables from each tip and ring board together to the tip and ring distribution panel.
2. Run a 25-pair cable from the distribution panel to an analog-line circuit pack on the switch.

NOTE:
This is one of many ways to connect between the switch and messaging system using inside building wire. It is subject to the same distance limitations as stations. The key element is the connection of the T/R circuits through the 25-pair cable to the switch.

Switch Integration Planning

2

Overview

NOTE:
For Intuity AUDIX LX, some of the screens may have been updated to Web-based administration and were not updated in this information. For more information refer to the Help on the appropriate page. In addition, refer to the Configuration Note for your switch information.

Before you integrate the Intuity AUDIX system with a switch, you must plan the process. This chapter provides the following information and worksheets to help you plan and record the integration.

Information:

- Voice port information
- Local and remote switch hunt group information
- Call coverage assignments
- Hop channel assignments

Worksheets:

- "Voice Port Station Information" on page 2-3
- "Voice Port Extensions and Names" on page 2-5
- "Assign the Hunt Group" on page 2-6
- "Assign the Call Coverage Path for Subscribers" on page 2-9

NOTE:
For installations outside of the United States and Canada the planning process should include a check of the default settings for country parameter administration for your location. These settings are listed in Appendix B, Country-Specific Parameter Administration.

Purpose

This chapter provides the worksheets and planning information you must complete in advance of the installation of the Intuity AUDIX system to ensure a successful switch integration.

Worksheet A: Voice Port Station Information

Complete the information on this worksheet to collect information required to administer the Intuity AUDIX system voice ports on the switch.

Date:	
Prepared By:	
Contact Telephone Number:	

Field	Recommended	Your Entry
User-Defined Adjunct Names (G3r and R5/6r only) Enter the name you plan to use for the Intuity AUDIX system on the User Defined Adjunct Names form. You can enter a maximum of seven characters.		
Extension	Complete Worksheet B	
Type	**VMI**	
Port	Complete Worksheet B	
Name	Complete Worksheet B	
Lock Messages	**n**	
Coverage Path	Leave blank	Leave blank
Class of Restriction (COR) To prevent toll fraud, Avaya, Inc. recommends that you create a COR for voice ports that allows subscribers to call only other numbers with the same COR. If you later decide that subscribers need to call numbers with different CORs, add permissions for the other CORs one at a time. The AMIS Analog Networking, Message Delivery, and Outcalling features require the ability to call numbers with different CORs.		

Continued on next page

Field	Recommended	Your Entry
Class of Service (COS) Create a COS for the voice ports that permits the Data Privacy feature. Avaya, Inc. recommends that you do not enable any other features on the COS.		
Loss Group		
Tests	**n**	
LWC Reception	All switches: **NONE**	
Headset (System 75 and DEFINITY G1 only)	**n**	
LWC Activation	**n**	
SMDR (CDR) Privacy (not available on System 75 or G1)	**n**	
Redirect Notification	**n**	
Off-Premise Station	**n**	
Coverage Message Retrieval	**n**	
Auto Answer	**n**	
Data Restriction	**n**	
Call Waiting Indication	**n**	
Att. Call Waiting Indication (not available on System 75 or G1)	**n**	
Distinctive Audible Alert	**n**	
Message Waiting Indicator	Leave blank	Leave blank
Adjunct Supervision (G3i/s only)	**y**	
R Balance Network (not available on System 75 or G1)	**n**	
Switchhook Flash	**y**	
Message Server Name (G3r only)	Leave blank	Leave blank
Audible Message Waiting (G3r only)	**n**	

Worksheet B: Voice Port Extensions and Names

Enter the location, name, and extension for each of the purchased (maximum of 12) voice ports in the following worksheet.

Date:	
Prepared By:	
Contact Telephone Number:	

Intuity AUDIX Port	Analog Port Equipment Location	Name[1]	Extension
1		AUDIX 1	
2		AUDIX 2	
3		AUDIX 3	
4		AUDIX 4	
5		AUDIX 5	
6		AUDIX 6	
7		AUDIX 7	
8		AUDIX 8	
9		AUDIX 9	
10		AUDIX 10	
11		AUDIX 11	
12		AUDIX 12	

1. These are the recommended names.

Worksheet C: Assign the Hunt Group

The following information is required to define a hunt group (that contains the voice port members) for the Intuity AUDIX system voice ports.

NOTE:
Only the number of ports actually purchased are supposed to be administered in the hunt group.

Date:	
Prepared By:	
Contact Telephone Number:	

Field	Recommended	Your Entry
Group Number Enter the number you want to use to identify the Intuity AUDIX hunt group. This number, preceded by the letter “h”, is entered in the voice port Coverage Path form and in subscriber coverage paths.		
Group Extension Enter the extension number you want subscribers to dial to retrieve their messages from the Intuity AUDIX system.		
Group Type	**ucd**	
Group Name Enter the name you want to appear on display sets when subscribers call the Intuity AUDIX system. You must include the word “AUDIX” in the name for G3-MA to recognize the name as a Intuity AUDIX group.		
Message Center	**NONE**	
ACD	**n**	
Queue	**y**	

Continued on next page

Field	Recommended	Your Entry
Night Service Destination Vector (y/n)? The Intuity AUDIX hunt group may be vector-controlled if call vectoring is a feature on the switch.	Leave blank	Leave blank
Security Code	Leave blank	Leave blank
Coverage Path	Leave blank	Leave blank
COR Enter the Class of Restriction (COR) you want assigned to the extension that subscribers will call to reach the Intuity AUDIX system.		
AUDIX Extension (System 75 R1V3 only) ***This field appears only on a remote switch in a DCS network when message center is active.*** The field refers to the host switch Intuity AUDIX extension number. This is the number remote Intuity AUDIX subscribers will dial to access the hunt group. Normally this field is left blank for the Intuity AUDIX system.		
Queue Length A suggested length is the number of configured Intuity AUDIX voice ports.		
Calls Warning Threshold	Leave blank	Leave blank
Calls Warning Port	Leave blank	Leave blank
Time Warning Threshold	Leave blank	Leave blank

Continued on next page

Field	Recommended	Your Entry
Time Warning Port	Leave blank	Leave blank
First Announcement Extension (n/a for G3r) If you want a switch-recorded announcement, enter the extension number here.		
First Announcement Delay (sec) (n/a for G3r) This entry is optional if the queue is y and must be blank if there is no first announcement.		

Worksheet D: Assign the Call Coverage Path for Subscribers

Complete this worksheet to define call coverage paths for subscribers.

Date:	
Prepared By:	
Contact Telephone Number:	

Field	Recommended	Your Entry
Coverage Path Number Enter the number you want to identify the call coverage path for subscribers.		
Next Path Number If desired, enter the second path to which calls will be directed if the current path fails.		
Coverage Criteria		
Station/Group Status Active? (Inside Call/ Outside Call)	**y/y**	
Busy? (Inside Call/Outside Call)	**y/y**	
Don't Answer? (Inside Call/Outside Call)	**y/y**	
All? (Inside Call/Outside Call)	**n/n**	
SAC/Go to Cover? (Inside Call/Outside Call)	**y/y**	
Number of rings Enter the number of rings (1–99) you want before a call goes to coverage.	**3**	
Coverage Points For Point1, Point2, or Point3, enter **h** followed by the Intuity AUDIX hunt group number.		

You have completed the worksheets and planning necessary for a Intuity AUDIX system switch integration.

DEFINITY Mode Code Switch Integration

3

Overview

NOTE:
For Intuity AUDIX LX, some of the screens may have been updated to Web-based administration and were not updated in this information. For more information refer to the Help on the appropriate page. In addition, refer to the Configuration Note for your switch information.

Unlike other methods of switch integration, mode-code integration depends on the transmission of ordinary analog telephone signals between an INTUITY™ AUDIX® system and a DEFINITY R6 or later switch. (The ProLogix configuration uses only mode-code integration and C-LAN.)

Signals from the INTUITY AUDIX system to the switch consist of switch-hook signals and touch-tones signals. Signals from the switch consist of call-progress signals and touch-tones signals. Since the variety of data that can be exchanged in this way is limited, fewer features are available with mode-code integration than with other means of integration. (See Table 1-1 on page 1-2 for details.)

Purpose

The following conditions must be met to enable mode-code integration:

- Mode codes are administered as a switch option. Use the standard mode codes delivered with the system.
- Analog ports connected to the voice messaging system are identified as voice messaging interfaces.

- The switch and messaging system must agree on the meaning of their signals.
- The switch must be running R6 or later software.

Use the following procedure to turn on mode-code integration.

DEFINITY Switch Administration

Feature Administration

Enable Mode-Code Integration

Use the switch's Customer Options form to enable mode code integration.

NOTE:
You must be logged in as INIT in order to make this change.

Proceed as follows:

1. Enter the command: **change system-parameters customer-options** and make sure the G3 Version (on the first line) is set to V6 or later.
2. Change to page 2. (Figure 3-1).
3. Set the `Mode Code Interface`? field on this screen to **y**.

```
change system-parameters customer-options                       Page   2 of   4
                                OPTIONAL FEATURES

                                ISDN-PRI? n  Restrict Call Forward Off Net? y
                                                   Secondary Data Module? y
                     Malicious Call Trace? n       Station and Trunk MSP? n
                      Mode Code Interface? y         Tenant Partitioning? n
                  Multifrequency Signaling? y    Terminal Trans. Init. (TTI)? n
Multimedia Appl. Server Interface (MASI)? n          Time of Day Routing? n
         Multimedia Call Handling (MMCH)? n         Uniform Dialing Plan? n
           Personal Station Access (PSA)? n  Usage Allocation Enhancements? n
                        PNC Duplication? n

                  Processor and System MSP? n           Wideband Switching? n
                        Private Networking? n                      Wireless? n




        (NOTE: You must logoff & login to effect the permission changes.)
```

Figure 3-1. Mode Code Interface Enabled

Assign Circuit Cards

Make sure your INTUITY AUDIX system is connected to the switch before you continue. That is, an on-premises system must be connected as a number of on-premises stations.

Administer each analog port as station type VMI but exactly as if it were a model 2500 station. Follow these steps:

1. Enter **change station *port_number***

   Where *port_number* is the extension number you assigned to this INTUITY port.

   The screen of Figure 3-2 appears.

2. Enter **VMI** in the `Type` field.
3. Enter in the `Port` field the DEFINITY location of the port to which you have connected this messaging system port.
4. Enter in the `Name` field the name by which this messaging port will be known. This name must match the name entered in the hunt group member assignments, and must include the word AUDIX.
5. Fill out the rest of the fields as shown in Figure 3-2. Press [ENTER] to save the information. The cor and cos should be set to match the values determined in your worksheet A.

```
change station 30004                                          Page 1 of 3

                                    STATION

Extension: 30004                        Lock Messages? n          BCC: 0
     Type: VMI                          Security Code:             TN: 1
     Port: 01A0701                                               COR: 1
     Name: AUDIX 1                                               COS: 5
                                                             Tests? n

STATION OPTIONS
     Off Premise Station? n
```

Figure 3-2. Change Station Screen 1

6. Press [NEXTPAGE] to move to the second page of the Station screen. The screen of Figure 3-3 appears.
7. Fill in the fields exactly as illustrated in Figure 3-3.
8. Press [ENTER] to save the information.

```
change station 30004                                          Page   2 of 3

                                    STATION
FEATURE OPTIONS
           LWC Reception: none
          LWC Activation: y                      Coverage Msg Retrieval? n
             CDR Privacy? n                                 Auto Answer: none
   Redirect Notification? n                            Data Restriction? n
 Per Button Ring Control? n                      Call Waiting Indication? n
   Bridged Call Alerting? n                 Att. Call Waiting Indication? n
        Switchhook Flash? y                    Distinctive Audible Alert? n
     Ignore Rotary Digits? n                          Adjunct Supervision? n
        H.320 Conversion? n
                                                Audible Message Waiting? n
```

Figure 3-3. Change Station Screen 2

9. Press NEXTPAGE to move to the third page of the Station screen (Figure 3-4).

```
change station 30004                                          Page    3 of   3

                                    STATION
SITE DATA
      Room:                                                Headset? n
      Jack:                                                Speaker? n
     Cable:                                               Mounting: d
     Floor:                                           Cord Length: 0
  Building:                                             Set Color:



ABBREVIATED DIALING
     List 1:                  List 2:                     List 3:

HOT LINE DESTINATION
         Abbreviated Dialing List Number (From above 1, 2, or 3):
                                                         Dial Code:

     Line Appearance: call-appr
```

Figure 3-4. Change Station Screen 3

10. Fill out this screen as instructed in the DEFINITY documents.
11. Press ENTER to save the information.

Assign the Hunt Group

You must identify each Intuity AUDIX system voice port as a member of one call distribution or switch group, also called a *hunt group.* This group is a set of analog ports on the switch that connects subscribers and callers to the Intuity AUDIX system by distributing new calls to idle ports. For example, when a caller dials the Intuity AUDIX system number to retrieve voice messages, the hunt group receives the call and sends it to the first available port. See the appropriate switch documentation for more information about call distribution groups.

Use the following procedure to place the voice ports into a hunt group starting with port 1:

1. Enter **add hunt-group *hunt group number*** at the `enter command` prompt on the SAT.

   The system displays the Hunt Group screen (Figure 3-5).

   See Worksheet C, in Chapter 2, Switch Integration Planning for the hunt group number. You also can enter **add hunt-group next** to add a hunt group with a number that is one higher than the previous hunt group

```
add hunt-group 10                                          Page 1 of 6
                                   HUNT GROUP

     Group Name: MAP5P AUDIX
      Group Number:10      Group Extension: 12000     Group Type:
ucd
 MM Early Answer? n                Skill? n             ACD? n
           Queue? y               Vector? n
   Security Code: Night Service Destination:                COR: 1
ISDN Caller Disp:              Coverage Path:                TN:1

                         Expected Call Handling Time (sec):180
                Queue Length: 16
   Calls Warning Threshold:                 Calls Warning Port:
    Time Warning Threshold:                  Time Warning Port:
```

Figure 3-5. Sample Hunt Group Screen, Page 1

2. Use Table 3-1 to enter the correct values in the fields on page 1 of the Hunt Group screen.

Table 3-1. Examples of Hunt Group Screen Entries, Page 1

Field	Description and Instructions
`Group Name:`	Enter the name you want display set subscribers to see when they call the Intuity AUDIX system to access voice messaging features. This name may consist of up to 15 characters. The word “AUDIX” must be part of the name for the G3-MA administration tool to recognize the Intuity AUDIX system. Other characters may appear in the name as long as AUDIX is part of the name. If AUDIX is not part of the Group Name, G3-MA will not be able to extract names from the switch when provisioning the Intuity AUDIX system.
`Group Number:`	This field contains the hunt group number assigned to the hunt group after you entered the **add hunt-group** command. This should be the same number listed on Worksheet C, in Chapter 2, Switch Integration Planning.
`Group Extension:`	Enter an unused extension number of 3–5 digits to be assigned to the hunt group. This is the extension subscribers dial to access voice messaging features. See Worksheet C, in Chapter 2, Switch Integration Planning for the hunt group extension.
`Group Type:`	Enter **ucd**
MM Early Answer?	Enter **n**
`Security Code:`	Leave this field blank.
`Message Center:`	Enter **none**.
`ACD?`	Enter **n** **NOTE:** The Intuity AUDIX system voice ports do not operate in an ACD group.
`Queue?`	Enter **y**
`Night Service Destination>`	Enter the destination where calls to this hunt group redirect when the hunt group is in the night service mode. Allowable entries are an assigned extension number, the attendant, or blank. Leave the field blank for most applications unless the application requires calls to be redirected when the hunt group is in night service mode.

Field	Description and Instructions
COR?	Enter the Class of Restriction number listed on Worksheet C in Chapter 2, Switch Integration Planning.
Vector?	Enter **n**
ISDN Caller Disp:	Enter **grp-name** or **mbr-name** to specify whether the hunt group name or member name will be sent to the originating subscriber. Use the hunt group name for most applications. This field is required when the ISDN-PRI option on the switch System-Parameters Customer-Options screen is enabled. If ISDN-PRI is not enabled, leave the field blank. See Worksheet C in Chapter 2, Switch Integration Planning for the correct value.
Coverage Path:	Leave this field blank. If you enter a coverage path, the switch send a call the coverage point. This may interfere with the Intuity AUDIX system.
Queue Length:	If you entered **y** in the Queue field, you must enter a queue length here. **NOTE:** *Use a queue length equal to the number of voice ports configured for the Intuity AUDIX system.*
Calls Warning Threshold:	Leave this field blank.
Time Warning Threshold:	Leave this field blank.
Calls Warning Port:	Leave this field blank.
Time Warning Port:	Leave this field blank.

3. Press NEXTPAGE to move to page 2 of the Hunt Group screen (Figure 3-7).

```
                              HUNT GROUP

                        Message Center: none

                         LWC Reception: none



First Announcement Extension:    First Announcement Delay (sec):
```

Figure 3-6. Sample Hunt Group Screen, Page 2

Fill out page 2 as shown. Enter **none** into the Message Center field, and again into the LWC Reception field. Leave the other fields blank.

4. Press NEXTPAGE to move to page 3 of the Hunt Group screen (Figure 3-7).

   (Figure 3-7) shows sample hunt group member assignments for the R6csi switch. You must assign the Intuity AUDIX voice port extensions as members of the hunt group.

```
Page 3 of 10
                                  HUNT GROUP
          Group Number: 10   Group Extension: 12000      Group Type: ucd

 Group Member Assignments
          Ext    Name                Ext    Name                Ext     Name
       1: 12001  AUDIX 1        14: 12014  AUDIX 14       27: ____
       2: 12002  AUDIX 2        15: 12015  AUDIX 15       28: ____
       3: 12003  AUDIX 3        16: 12016  AUDIX 16       29: ____
       4: 12004  AUDIX 4        17: ____                  30: ____
       5: 12005  AUDIX 5        18: ____                  31: ____
       6: 12006  AUDIX 6        19: ____                  32: ____
       7: 12007  AUDIX 7        20: ____                  33: ____
       8: 12008  AUDIX 8        21: ____                  34: ____
       9: 12009  AUDIX 9        22: ____                  35: ____
      10: 12010  AUDIX 10       23: ____                  36: ____
      11: 12011  AUDIX 11       24: ____                  37: ____
      12: 12012  AUDIX 12       25: ____                  38: ____
      13: 12013  AUDIX 13       26: ____                  39: ____
                                                          40: ____
```

Figure 3-7. Sample Hunt Group Screen, Page 3

5. Enter the Intuity AUDIX voice port extensions as group members. Use Table 3-2 to complete the hunt group assignments.

NOTE:
Enter the ports you configured for the Intuity AUDIX system. Do not enter voice port extensions that belong to other systems.

The voice port names do not display while you are adding the hunt group members. The next time you access the Hunt Group screen, you see the names.

Table 3-2. Hunt Group Screen Group Member Assignments Entries

Field	Description
`Group Number:`	This is a display-only field that shows the group number assigned on page 1 of the Hunt Group screen (Figure 3-5).
`Group Extension:`	This is a display-only field that shows the group extension assigned on page 1 of the Hunt Group screen (Figure 3-5).
`Group Type:`	This is a display-only field that shows the group type assigned on page 1 of the Hunt Group screen (Figure 3-5).
`Ext`	Enter the extensions of each Intuity AUDIX voice ports. Enter the extensions in the same order the extensions were assigned to the voice ports. The order must match the order on the Intuity AUDIX system Voice Equipment Assignment screen. See Worksheet B, in Chapter 2, Switch Integration Planning for a list of voice port extensions.
`Name`	This is a display-only field. The voice port names display the next time you access the Hunt Group screen.

6. After you enter the Intuity AUDIX voice port extensions, press ENTER to save the information.

   The system refreshes the screen.

You use the Group Number of the Intuity AUDIX hunt group when you assign a call coverage path for the system subscribers. The hunt group number serves as the coverage point for incoming Intuity AUDIX calls. You will complete the coverage path assignment procedure in Chapter 4, Cut-to-Service Administration.

Set System Parameters

Seven system parameters determine how the system will send mode codes. These are the four mode codes themselves (in the form of touch-tones signals) and three time durations associated with their transmission.

These options must match the transmission qualities of your integrated voice messaging system. Furthermore, the default entries match the INTUITY AUDIX defaults. For these reasons, do not change the parameters from their defaults for your INTUITY AUDIX system unless absolutely necessary to meet pre-existing dial plan settings.

1. Enter **change system-parameters - mode codes**

   The system displays the Default Mode Code Settings screen (Figure 3-8).

2. The `Direct Inside Access` field alerts the voice messaging system that it is about to get a call from a number that is administered on the switch. The default delimiter is # and the default code is 00. Set the mode code to match the one administered on your voice messaging system.

3. The `Direct Dial Access-Trunk` field alerts the voice messaging system that it is about to get a call from outside of the switching system. The default delimiter is # and the default code is 01. Set the mode code to match the one administered on your voice messaging system.

4. The `Internal Coverage` field alerts the voice messaging system that it is required to cover a call from a number that is administered on the switch. The default delimiter is # and the default code is 02. Set the mode code to match the one administered on your voice messaging system.

5. The `External Coverage` field alerts the voice messaging system that it is required to cover a call from outside of the switching system. The default delimiter is # and the default code is 03. Set the mode code to match the one administered on your voice messaging system.

6. `DTMF DURATION-ON` field sets the number of milliseconds a touch-tone digit will be left on when the switch signals the voice messaging system. The default duration is 100 ms. Set the duration to one that will be recognized as a single digit by your voice messaging system.

7. `DTMF DURATION-OFF` field sets the interval in milliseconds to be expected between touch-tones signals when the switch signals the voice messaging system. The default interval is 100 ms. Set the interval to one that will be recognized as such by your voice messaging system.

8. `Sending Delay` field is the interval that passes after switch information is sent. The default interval is 100 ms. Set the interval to one long enough to be recognized by your voice messaging system.

```
                              MODE CODE RELATED SYSTEM PARAMETERS


MODE CODES (FROM SWITCH TO VMS)

Direct Inside Access          #00___
Direct Dial Access - Trunk    #01___
Internal Coverage             #02___
External Coverage             #03___




                                 OTHER RELATED PARAMETERS

DTMF DURATION ON(msec):  100 OFF(msec): 100 Sending Delay(msec): 100_
```

Figure 3-8. Default Mode Code Settings

Intuity AUDIX Administration

Overview

NOTE:
For Intuity AUDIX LX, some of the screens may have been updated to Web-based administration and were not updated in this information. For more information refer to the Help on the appropriate page. In addition, refer to the Configuration Note for your switch information.

Administering the Intuity AUDIX system for switch integration requires using Web-based administration pages in the telephony and call data interfaces to perform the procedures listed in Table 3-3.

Complete the procedures in the order specified.

Table 3-3. Task Procedure Matrix

Order	Procedure	Page
1.	Configuring the Intuity AUDIX LX for initial setup procedures.	Refer to the Configuration Note. Section 6.0
2.	"Verifying the Country and Switch"	Switch Selection
3.	"Setting the MWI Device Assignments"	Device Assignment
4.	"Setting the Dial Plan Translations"	Dial Plan Translation

Permissions for Pages

The sa login can view all the pages used in these procedures but cannot change any values for parameters. The craft, remote maintenance (tsc), and root logins can set values for parameters in all pages.

Other Pages Used for Switch Integration

Some pages in the telephony and call data interfaces used for switch integration can be viewed by the sa and craft logins, but require tsc login permissions to change the values for parameters. These pages are used only in troubleshooting scenarios involving an Avaya, Inc. service representative and are therefore not described here.

Stopping and Restarting the Voice System

If you change or enter parameters on any of the pages used for switch integration, you must stop and then restart the system for your changes to be incorporated into call processing.

Stopping the Voice System

Stop the voice system. See the procedures for stopping the voice system in "Stopping and Starting the Voice System" on page 3-17.

Assigning Service to Voice Channels

Refer to the Configuration Note for these procedures and settings.

Verifying the Country and Switch

Use this procedure to check the country and switch for the system's switch integration. The selections in this page determine the defaults set in the system. If the system does not offer an exact match, contact your remote support center and ask them to select the country the matches the installation conditions as closely as possible.

1. Start at the Administration main menu and select:

   Basic System Administration

   Switch Selection

   The Switch Selection page is displayed.

2. Verify that the Country-Switch parameters match your location. If they do not, contact your remote support center.

3. Click Return to Main to return to the Administration main menu.

Table 3-4. Switch Selection Page — Field Descriptions

Field	Description and Values
`Country-Switch`	Specifies the country-switch for which the system sets country and switch specific default parameters. Normally the country is factory-preset for your integration. Verify that the country matches your location. If it does not, contact your remote support center.

Setting the MWI Device Assignments

Complete this procedure to assign the channel group number(s) on which the system performs MWI updates.The procedure allows you to partition the channel or channels on which MWI updates are performed.

To assign a channel group here for MWI updates, you must have already administered the group using the Channels to Group option under the Voice Equipment menu. See the installation book for your platform for the procedure.

1. Start at the Administration main menu and select:

   Switch Administration

   Device Assignment

   The Device Assignment page displays. If the parameters have been previously administered, the system displays the current values instead.

2. Enter **n** in the `Link Test (Y/N):` field (see Table 3-5).
3. Leave the default value in the `Link Test Interval:` field.
4. Enter a switch number in the `Switch Number` field (see Table 3-5).
5. Enter a channel group number in the `Device ID` field (see Table 3-5).
6. Click **Save**.

   The system displays the following message:

   `You need to restart the Voice System to make these changes active.`
7. Stop and restart the voice system.

Table 3-5. Device Assignment Page — Field Descriptions

Field	Description	Values
`<switch> Integration`	Displays the switch selected on the Switch Selection page.	Display only.
`Link Test (Y/N):`	This field is not used.	N/A
`Link Test Interval (seconds):`	This field is not used.	N/A
`Switch Number`	Number that uniquely identifies the switch and is used to address it. The Avaya INTUITY system uses this number to differentiate between subscribers on different switches.	Maximum of three digits, range 1 to 999. This number must match the one that identifies the switch in AUDIX administration.
`Device ID`	The group number as administered using the Channels to Group option under the Voice Equipment menu. Valid range 1 through 32. By default, all channels are assigned to group 2 and outcalling is always done on group 2. If, however, channels have been assigned to another group for MWI updates, the functionality must be enabled here.	Group numbers can be separated by commas (for example 1,3,4,5) or specified in ranges (for example 1, 3–5).
`Link Test Number`	This field is not used.	N/A

Setting MWI Feature Access Codes

Complete this procedure to set the feature access codes that the messaging system sends either to turn on a particular message waiting indicator or to turn it off. What you should accomplish here is to ensure that the code sent by the messaging system is the one expected by the switch.

1. Where a DEFINITY system is using mode-code integration, message-waiting indication is handled by the Leave Word Calling (LWC) feature. Discover from the switch administrator what feature access codes the switch expects to receive for:

   LWC Send a Message

   LWC Cancel a Message

   The DEFINITY administrator can find these on the switch's *feature access code* form.

2. Start at the Administration main menu select:

   Switch Administration

   MWI Parameters

3. Set the *MWI On Prefix* to match the *LWC Send a Message* code set on the switch.
4. Set the *MWI Off Prefix* to match the *LWC Cancel a Message* code set on the switch.
5. Click **Save**.
6. Click **Return to Main** to return to the Administration main menu.

Setting the Dial Plan Translations

Complete this procedure to set up the translations to be done on the calling party identification (CLI) and called party identification (CP ID) for incoming and outgoing calls to interface the Intuity AUDIX system and the switch.

1. Start at the Administration main menu and select:

   Switch Administration

   Dial Plan Translation

   The Dial Plan Translation page displays with defaults for your integration. If the parameters have been previously administered, the system displays the current values instead.

2. Use Table 3-6 to modify the page.
3. Click **Save**.

   The system displays the following message:

```
You need to restart the Voice System to make these
changes active.
```

4. Stop and restart the voice system.

Table 3-6. Dial Plan Translation Page— Field Descriptions

Field	Description	Values
<*switch*> `Integration`	Displays the switch selected on the Switch Selection page.	Display only.
`INTUITY Extension Length`	Specifies the number of digits in the dial plan.	3 to 10 integers. The number must be the same as the number of digits administered for the INTUITY prefix combined with the number of digits for the (start or end) extension number.
`Switch Network Access Code`	Specifies the code dialed to reach the network. For example, you might dial 9 first to reach an outside line.	Not used in mode-code integration. Leave this field blank.
`Switch Prefix`	Specifies the initial part of the code sent by the switch as part of the call information.	Not used in mode-code integration. Leave this field blank.
`Switch Start Ext.`	Specifies the first extension number in the range of allowed extension numbers.	The number of digits specified for the start and end extension numbers must be identical. For example, to specify the range 200–3999, enter: ■ Start extension 0200 ■ End extension 3900
`Switch End Ext.`	Specifies the last extension number in the range of allowed extension numbers.	

Continued on next page

Table 3-6. Dial Plan Translation Page— Field Descriptions — *Continued*

Field	Description	Values
`INTUITY Prefix`	Specifies the digits that prefix the INTUITY mailbox numbers.	Not used in mode-code integration. Leave this field blank.
`Switch Number`	Number that uniquely identifies the switch and is used to address it. The Intuity AUDIX system uses this number to differentiate between subscribers on different switches.	Maximum of three digits, range 1–999. This number must match the one that identifies the switch in AUDIX administration.
`Remote [Y/N]`	Specifies whether the administered switch named in the `Switch Number` field is a remote switch on the network or a local switch.	Enter **n** for mode-code integration.

Example

The following example illustrates entries used for the common scenario where there is a single switch connection and fixed-length switch subscriber extensions.

Table 3-7.

`INTUITY extension length = 4`

Switch Prefix	Switch Start Ext.	Switch End Ext.	INTUITY Prefix	Switch ID	Remote [Y/N]
	2000	9999		1	N

Stopping and Starting the Voice System

To execute any changes you have made to the switch integration administration pages in the procedures in this chapter, you must stop and then restart the voice system.

CAUTION:

Only stop the voice system when it is absolutely necessary. All calls in progress will be disconnected. Subscribers calling the AUDIX system will hear a fast busy signal. Callers sent to AUDIX coverage will hear ringing with no answer.

Complete this procedure to stop and restart the voice system.

1. Start at the Administration main menu and select:

   Utilities

   Stop Messaging Software

   NOTE:
   Be sure to select `Stop Voice System`. Do not select `Shutdown Voice System`.

2. Enter a time between 0 and 600 seconds as the time to wait for calls in Click **Save**.

   The system displays the following message:

   ```
   The voice System has stopped
   Press ENTER to continue...
   ```

NOTE:
The system waits until all calls in progress disconnect before stopping the voice system.

3. Click Return to Main to return to the main menu.

   Utilities

   Start Messaging Software

   The system displays the following message:

   ```
   Startup of the Voice System is complete
   Hit Acknowledge key to continue...
   ```

4. Click **OK** (Acknowledge Message).
5. Click **Return to Main** to return to the main menu.

Cut-to-Service Administration

4

Overview

NOTE:
For Intuity AUDIX LX, some of the screens may have been updated to Web-based administration and were not updated in this information. For more information refer to the Help on the appropriate page. In addition, refer to the Configuration Note for your switch information.

To cut the Intuity AUDIX system into service, you must perform the following two tasks on the switch:

- Administer the call coverage path.
- Administer the subscribers.

You must *first* perform all Intuity AUDIX system initial administration, switch administration, and acceptance tests. *Do not attempt this cut-to-service administration until you are ready to provide messaging services to system subscribers.*

Cut-to-Service Procedures

The procedure describes how to administer the subscribers on the switch and enable them to use the Intuity AUDIX system. Complete this task when you are ready to place the subscribers into service. Make sure that all installation tasks for the following are complete

- *INTUITY Software Installation*
- *INTUITY AUDIX LX R 1System Installation*

before performing the subscriber administration.

Use the information in this chapter to administer all of the following switches:

- DEFINITY G3i-V6
- DEFINITY G3r-V6
- DEFINITY G3s-V6
- DEFINITY G3vs-V6

The sample screens used in this chapter show DEFINITY G3i screens. All of the supported switches use screens that appear similar to the G3i screens. The text explains any differences between the switch screens.

Subscriber administration on the switch includes:

- Defining a coverage path with the Intuity AUDIX system hunt group as a coverage point
- Changing the feature options to enable Leave Word Calling (LWC) reception to the INTUITY AUDIX system

Assign the Call Coverage Path for Subscribers

Define a call coverage path for subscribers with the Intuity AUDIX hunt group as a coverage point. You might need to define several call coverage paths depending on how the customer wants to handle call coverage for different groups of subscribers. If the Intuity AUDIX system has been integrated with an existing switch, you could need to add the Intuity AUDIX hunt group as another coverage point for existing coverage paths. See Worksheet D in Chapter 2, "Switch Integration Planning" for the selected coverage paths.

Use the following procedure to define a call coverage path for subscribers.

1. Log in to the switch System Administration Terminal (SAT) or G3-Management Terminal (G3-MT) by entering the **craft** or **inads** user id.
2. Enter your password.
3. Enter the correct terminal type.

   The system displays the enter command prompt.

4. Enter **add coverage path *coverage path number*** at the `enter command` prompt. See Worksheet D in Chapter 2, "Switch Integration Planning", for the call coverage path number.

   The system displays the Coverage Path screen as shown in Figure 4-1.

```
                                        Page  1 of  1
COVERAGE PATH
                          Coverage Path Number: 21
                              Next Path Number: ___    Linkage: ___  ___



       COVERAGE CRITERIA
           Station/Group Status  Inside Call  Outside Call
                    Active?           y            y
                      Busy?           y            y
              Don't Answer?           y            y    Number of Rings: 3
                       All?           n            n
           SAC/Go to Cover?           y            y


       COVERAGE POINTS
                       Point1: h10             Point3: ____
                       Point2: ____
```

Figure 4-1. Sample G3i Subscriber Coverage Path Screen

5. Use Table 4-1 to enter the correct values in the fields on the Coverage Path screen.

Table 4-1. Subscriber Coverage Path Screen Entries

Field	Description and Instructions	
`Coverage Path Number:`	This field displays the coverage path number assigned to the coverage path when you entered the add coverage path command. This number must appear in the Coverage Path field on all subscriber station screens so that subscriber stations will cover to the Intuity AUDIX voice ports.	
`Coverage Criteria`	The conditions that cause a call to redirect to coverage. See Worksheet D in Chapter 2, "Switch Integration Planning" for the coverage criteria.	
`Station/Group Status`	Inside Call	Outside Call
`Active?`	Enter **y**	Enter **y**
`Busy?`	Enter **y**	Enter **y**
`Don't Answer?`	Enter **y**	Enter **y**
`All?`	Enter **n**	Enter **n**
`SAC/Go to Cover?`	Enter **y**	Enter **y**
`Linkage:`	This is a display-only field that shows up to two additional coverage paths that the `Next Path Number` field entry links to.	
`Next Path Number:`	Optional. Enter the number of the coverage path to which a call will be redirected in case of coverage failure at the current path.	
`Number of Rings:`	Enter the number of rings from 1 through 99. Three rings is the recommended timing and is the default value. This is the number of rings a subscriber's telephone rings before the switch recognizes a no-answer condition and sends the call to the first coverage point. See Worksheet D in Chapter 2, "Switch Integration Planning" for the correct number of rings.	
`Coverage Points`	The Call Coverage Paths. For Point1, Point2, or Point3, enter **h** followed by the Intuity AUDIX hunt group number assigned in Assign the Hunt Group section in Chapter 2, "Switch Integration Planning".	

6. After you enter the information in each of the screen fields, press ENTER to save the information.

   The system refreshes the screen and returns the cursor to the command prompt.

Modify the Station Screen for Each Subscriber

After you administer the call coverage path, you must administer the subscriber stations. Each subscriber station must contain the correct information for the Intuity AUDIX system to operate. Use the instructions in this section to administer the stations do the following:

1. Enter **change station *station extension*** at the enter command prompt.

   If you receive the message *station extension* `Identifier not assigned`, you entered a station extension that does not exist in the system. Use the **add station** command to add the subscriber station.

   The system displays the Station screen as shown in Figure 4-2

```
add station 12001                                          Page 1 of 1
                                    STATION
     Extension: 12001     BCC: 0
                        Type: 2500          Lock Messages: n        COR: 1
            Port: 01A0501        Security Code: ____       COS: 5
            Name: AUDIX 1        Coverage Path:          Tests? n

              FEATURE OPTIONS
             LWC Reception? NONE                  Coverage Msg Retrieval? n
            LWC Activation? n                                 Auto Answer? n
               CDR Privacy? n                            Data Restriction? n
     Redirect Notification? n                     Call Waiting Indication? n
       Off Premise Station? n                Att. Call Waiting Indication? n
         R Balance Network? n                   Distinctive Audible Alert? n
          Switchhook Flash? y                   Message Waiting Indicator: _
                                               Station Adjunct Supervision: y

               AUDIX Name:
       Message Server Name: ________              Audible Message Waiting? n
```

Figure 4-2. Sample G3i Station Screen

2. Enter the coverage path that you created for the Intuity AUDIX system in "Assign the Call Coverage Path for Subscribers" above. If you do not remember the coverage path number, see Worksheet D, in Chapter 2, "Switch Integration Planning".

3. Enter **AUDIX** in the `LWC Reception?` field.
4. Enter **y** in the `LWC Activation?` field if the subscriber is assigned the Leave Word Calling feature.
5. Enter **y** in the `Redirect Notification?` field.
6. Enter **led** or **neon** in the `Message Waiting Indicator:` field if the telephone has a message waiting indicator (MWI) lamp.
7. After you enter the information in each of the fields, press ENTER to save the information.

   The system refreshes the screen and returns the cursor to the command prompt.
8. Repeat Step 1 through Step 7 for all subscriber stations.

When you complete the station administration for all subscribers, return to the following instructions and complete the cut-to-service procedure:

- *INTUITY Software Installation*
- *INTUITY AUDIX LX R 1 System Installation*

Security

A

Overview

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. Customers 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 the ultimate control over the configuration and use of the Avaya, Inc. services and products it purchases, the customer properly bears responsibility for fraudulent uses of those services and products.

Avaya Inc. is committed to help customers use and manage their system to ensure the greatest security possible.

This chapter highlights some of the things you can do to secure your messaging system against fraudulent use.

Purpose

The purpose of this chapter is to alert the customer to the dangers of telecommunications fraud. This chapter also provides some guidelines on how to administer a messaging system to prevent unauthorized use. For a complete discussion, see the *Avaya Products Security Handbook*, 555-025-600.

Protecting Your Voice/Fax Messaging System

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

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

Voice Messaging

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

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

Automated Attendant

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

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

Switch Administration

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

Restrict Outward Dialing

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

For G1, G3, and System 75:

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

Assign Low Facilities Restriction Level (FRL)

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

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

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

NOTE:
Voice Messaging ports that are outward restricted through COR cannot use AAR/ARS/WCR trunks. Therefore, the FRL level does not matter since FRLs are not checked.

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

Table A-1. Suggested Values for FRLs

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

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

To set FRLs on G1, G3:

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

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

Restrict Toll Areas

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

For G1:

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

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

For G3:

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

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

Create Restricted Number Lists (G1, G3)

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

Restrict AMIS Networking Number Ranges

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

Subscriber Password Guidelines

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

- When password protection into voice mailboxes is offered, require the maximum number of digits allowed, or a minimum of five digits. The password length must be at least one digit longer than the extension length.
- Make sure that subscribers change the default password the first time they log in to the AUDIX system. To insure this, make the default password fewer digits than the minimum password length.
- Administer Password Aging on the System Parameters Features screen. Password Aging requires subscribers to change their password at an interval defined by the system administrator. Password Aging enhances overall system security and helps protect against toll fraud by making the INTUITY AUDIX system less vulnerable to break-ins.
- Create your own password as soon as your AUDIX extension is assigned. This ensures that only *you* will have access to your mailbox, not anyone who enters your extension number, and then enters [#]. (The use of only a [#], which indicates the lack of a password, is well-known by telephone hackers.)
- Never have your greeting state that you will accept third-party billed calls (this allows unauthorized individuals to charge calls to your company). If someone at your company has this kind of greeting, point out the vulnerability to that person and recommend they change the greeting immediately.
- Never use obvious or trivial passwords, such as your phone extension, room number, employee identification number, social security number, or easily guessed numeric combinations (for example, 999999).
- Change administered default passwords immediately; never skip the password entry. Hackers discover defaults. To change your password, press [5] at the main AUDIX menu. Then press [4].
- Discourage the practice of writing down passwords, storing them, or sharing them with others. If a password needs to be written down, keep it in a secure place and never discard it while it is active.
- Never program passwords onto auto-dial buttons.
- If you receive any strange AUDIX messages, or your greeting has been changed, or if for any reason you suspect that your AUDIX facilities are being used by someone else, contact Avaya Network Corporate Security.

INTUITY AUDIX Administration

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

Mailbox Administration

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

Outcalling

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

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

NOTE:
If outcalling to a pager is allowed, additional digits might be required.

Enhanced Call Transfer (G1, G2, G3)

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

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

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

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

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

Intuity AUDIX FAX Messaging

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

Detecting Voice Mail Fraud

The following table shows the reports that help determine if your voice mail system is being used for fraudulent purposes.

Monitoring Technique	Switch
Traffic Measurements and Performance	All
Automatic Circuit Assurance	All
Busy Verification	All
Call Traffic Report	All

Monitoring Technique	Switch
Trunk Group Report	G1, G3
AUDIX Traffic Reports	All*

* MERLIN LEGEND supports only these monitoring techniques

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.

Traffic data reports are maintained for the last hour and the peak hour.

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.

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

ARS Measurement Selection

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

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

Automatic Circuit Assurance

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

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

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

Busy Verification

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

- Use **change station** to display the Station screen for the station that will be assigned the Busy Verification button.
- In the Feature Button Assignment field, enter **verify**.

- To activate the feature, press the **Verify** button and then enter the trunk access code and member number to be monitored.

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 can also be used to monitor usage and investigate possible break-in attempts.

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 strengthen relationships with its customers and its support of law enforcement officials in apprehending and successfully prosecuting those responsible.

No telecommunications system can be entirely free from risk of unauthorized use. However, diligent attention to system management and to security can reduce that risk considerably. Often, a trade-off is required between reduced risk and ease of use and flexibility. Customers who use and administer their systems make this trade-off decision. They know best how to tailor the system to meet their unique needs and are therefore in the best position to protect the system from unauthorized use. Because the customer has ultimate control over the configuration and use of 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 trade-off 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 is committed to develop and offer services that, for a fee, reduce or eliminate customer liability for PBX toll fraud, provided the customer implements prescribed security requirements in its telecommunications systems.
- 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.

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

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

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

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

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, call one of the following numbers immediately.

DEFINITY/System 75/System 85 — Avaya Technical Service Center (TSC)	800 242-2121
MERLIN LEGEND — Avaya National Service Assistance Center (NSAC)	800 628-2888
Avaya Technical Service Center Toll Fraud Intervention Hotline	800 643-2353
Avaya Technical Support Organization Technician Hotline	800 248-1234
Avaya Corporate Network Security	800 821-8235
AUDIX Help Line	800 562-8349

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

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.

Country-Specific Parameter Administration

B

Overview

NOTE:
For Intuity AUDIX LX, some of the screens may have been updated to Web-based administration and were not updated in this information. For more information refer to the Help on the appropriate page. In addition, refer to the Configuration Note for your switch information.

Country-specific parameter administration for the Intuity AUDIX system consists of:

- Country-Selection — establishes the location of operation and the analog parameters under which the system will operate. This option allows the Intuity AUDIX system to be set using preset parameters matched to the DEFINITY.
- Parameter tuning — allows individual parameters to be changed from the default settings to a custom selection to match the operating requirements of a specific installation.

For systems with DEFINITY switches administered with the country code, the only administration necessary is country selection which establishes pre-selected parameters. If, however, the DEFINITY tone plan has been customized, the corresponding changes can be administered on the Intuity AUDIX system via the screens for parameter tuning.

Purpose

This chapter provides the information you need to administer country-specific parameters for a Intuity AUDIX system that is integrated with a DEFINITY switch.

Using the Switch Selection Administration Page

The following logins operate with these pages:

- The sa login can be used to view the pages. This login, however, may not be used to change any of the parameter fields or the system's country assignment.
- The craft login can be used to administer the system's country assignment and change any parameters that are not restricted. The craft login, however, can not select "Other" as an entry for the system's country assignment and set the parameters when "Other" is selected.
- The remote maintenance login can assign "Other" as a country and administer all of the parameters.

Customers who need assistance with system tuning need to contact their remote maintenance center.

Country-Switch Selection

Each system that uses the Intuity AUDIX DEFINITY switch integration software must have a country specified. Selecting a country establishes the parameters under which the system will operate.

To select a country, do the following from the Switch Selection page:

- From the drop-down list, select Country-Switch.

NOTE:
For a listing of the countries and the parameter default settings, see "Country Default Settings" below.

If necessary, "Other" can be selected in place of a country name, and customized parameter settings established. This action requires remote maintenance assistance.

Parameter Tuning

This section describes the pages and the fields used in parameter tuning. Parameter tuning is divided into two areas:

- Interface Parameters
- Switch Tones

Analog interface parameters are set by using the Interface Parameters page. The switch tones are set through a series of pages:

- Dial tone
- Busy tone
- Ring tone
- Reorder tone
- First additional tone
- Second additional tone
- Third additional tone

Switch Tones

Table B-1 describes the page and fields that establish the switch tones settings for the Intuity AUDIX system.

Table B-1. Switch Tones Fields Summary

Parameter	Value
Frequency 1 and 2	300–4000 Hz
`On Time`	0–6000
`Off Time`	0–6000
`Cycles`	0–4
`Disconnect Situation`	0, 1, or 2
Tones	Dial Busy Ring Reorder

Busy, Dial, Reorder, and Ring Tone Pages

These pages are identical except for the name in the title. The tone is specified in terms of a Frequency (1 or 2 frequencies) and the timing of on and off cycles. If the tone is to be treated as disconnect under certain situations, the field `Disconnect Situation` can be used.

Disconnect Situation

This field is used when call progress tones are being used as disconnect signals. Three values are used:

- 0 — Do not treat as a disconnect

- 1 — Treat as disconnect during voice coding only
- 2 — Treat as disconnect at all times except outcalling

The Disconnect Situation can be filled in for each tone with a value of 0, 1, or 2.

First, Second, and Third Additional Tones

You can specify one to three additional tones if required. These can be reported as any of the standard tones:

- Dial
- Busy
- Reorder
- Ring

Additional Tones Fields

All fields on this page are identical to those for the standard tones except that the `Disconnect Situation` field does not appear on these forms. Disconnect is done on the standard tones. To create a new dial tone to be treated as disconnect, make the entry for disconnect in the Dial Tone page and report the new tone as “dial”.

Report As Field

These pages also have the `Report As` field which does not appear in the standard tones form. This field can take values

- Dial
- Busy
- Ring
- Reorder
- Unused

If the additional tone is not used, this field takes the value “unused.”

Analog Interface Parameters

The Analog Interface Parameters page, has several fields. This page highlights the fields that can be changed. Any fields not highlighted are restricted and can not be changed because of regulatory restrictions. Field restriction varies with the country specified for the system.

NOTE:
For a listing of restricted fields, see the “Country Default Settings” below.

Table B-2 lists the fields on the Analog Interface Parameters page.

Table B-2. Analog Interface Parameters Fields Summary

Parameter	Value	Usual Setting	Granularity
`Answer Delay`	0–50 rings	Between 0 and 2	-
`Post onhook delay`	0–30000 msec	2000 msec	20 msec
`Post offhook delay`	0–30000 msec	2000 msec	20 msec
Switch Hook Flash Duration	100–3000 msec		
`DTMF On-time`	20–30000 msec	100	10 msec
`DTMF Off-time`	20–30000 msec	60	10 msec
CPT Detect Minimum	-48 -3	-38	
Energy Detect Minimum	-44 -3	-44	
`Wink duration`	80–800 msec	300 msec	10 msec
`Input volume`[1]	1000 (suggested)		
`Output volume1`	1000 (suggested)		

1. Input and Output volume should be thought of as volume multipliers (that is, +/- gain) of the incoming/outgoing signal. A value of 1000 is equivalent to multiplying the incoming or outgoing signal volume by 1, that is, unity gain.

Country Default Settings

NOTE:
Some of the fields for example Stutter Tones are not supported on the Intuity AUDIX LX system. Refer to the Help on the appropriate page for more information.

This section lists the values used as default settings for various countries for the Tones Administration and analog Interface Parameters pages. These are the values that the Intuity AUDIX system uses when you select and set a country on the Switch Selection page.

To set a parameter to a different value:

1. Verify that the parameter is not restricted. If the parameter is restricted, you may not change the value on the Intuity AUDIX system.
2. Verify that your new setting is permitted. See the Value columns in Table B-1 and Table B-2.

Argentina

Table B-3. Argentina: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	350+440 Hz	Continuous, min. 1.5 seconds
Busy	480+620 Hz	300 on, 600 off (2 cycles)
Ring	440+480 Hz	1500 on, 3500 off
Reorder	480+620 Hz	250 on, 250 off (2 cycles)
Stutter	350+440 Hz	150 on, 150 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-4. Argentina: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High-Level Group (dBm)	-6	yes
DTMF Low-Level Group (dBm)	-8	yes
DTMF On-time (ms)	100	yes
DTMF Off-time (ms)	60	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Australia

Table B-5. Australia: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	404+450 Hz	Continuous, min. 1.5 seconds
Busy	425 Hz	400 on, 400 off (2 cycles)
Ring	404+425 Hz	400 on, 200 off 400 on, 2000 off
Reorder	425 Hz	2500 on, 500 off
Stutter	404+450 Hz	150 on, 150 off (3 cycles) followed by continuous tone, min 1.5 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-6. Australia: Analog Interface Parameters

Parameter	Default Value	Restricted?
Answer delay (rings)	1	no
DTMF High-Level Group (dBm)	-8	yes
DTMF Low Level Group (dBm)	-10	yes
DTMF On-time (ms)	60	yes
DTMF Off-time (ms)	100	yes
Clipping threshold (dBm)	-12	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-12	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	350	no
Input volume	4000	no
Output volume	1000	no

Belgium

Table B-7. Belgium: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	425 Hz	Continuous, min. 1.5 seconds
Busy	425 Hz	500 on, 500 off (2 cycles)
Ring	425 Hz	1000 on, 3000 off
Reorder	425 Hz	250 on, 250 off (2 cycles)
Stutter	—	—
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-8. Belgium: Analog Interface Parameters

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High-Level Group (dBm)	-6	yes
DTMF Low Level Group (dBm)	-8	yes
DTMF On-time (ms)	100	yes
DTMF Off-time (ms)	100	yes
Clipping threshold (dBm)	-10	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-10	yes
CPT detect minimum (dBm)	-25	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Brazil

Table B-9. Brazil: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	425 Hz	950 on, 50 off
Busy	425 Hz	250 on, 250 off (2 cycles) DISCONNECT signal
Ring	425 Hz	1000 on, 4000 off
Reorder	425 Hz	250 on, 250 off, 750 on, 250 off
Stutter		
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-10. Brazil: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High-Level Group (dBm)	-8	yes
DTMF Low Level Group (dBm)	-10	yes
DTMF On-time (ms)	80	yes
DTMF Off-time (ms)	80	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Canada

Table B-11. Canada: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	350+440 Hz	Continuous, min. 1.5 seconds
Busy	480+620 Hz	300 on, 600 off (2 cycles)
Ring	440+480 Hz	1500 on, 3500 off
Reorder	480+620 Hz	250 on, 250 off (2 cycles)
Stutter	350+440 Hz	150 on, 150 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-12. Canada: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High-Level Group (dBm)	-6	yes
DTMF Low Level Group (dBm)	-8	yes
DTMF On-time (ms)	360	yes
DTMF Off-time (ms)	160	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Colombia

Table B-13. Colombia: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	350+440 Hz	Continuous, min. 1.5 seconds
Busy	420 Hz	250 on, 250 off 550 on, 550 off
Ring	440+480 Hz	1500 on, 3500 off
Reorder	—	—
Stutter	350+440 Hz	150 on, 150 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-14. Colombia: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High-Level Group (dBm)	-6	yes
DTMF Low Level Group (dBm)	-8	yes
DTMF On-time (ms)	100	yes
DTMF Off-time (ms)	60	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

France

Table B-15. France: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	440 Hz	Continuous, min. 2 seconds
Busy	440 Hz	500 on, 500 off (2 cycles)
Ring	440 Hz	1500 on, 3500 off
Reorder	440 Hz	200 on, 200 off (2 cycles)
Stutter	—	—
First additional	330 Hz	Continuous, min. 2 seconds; report as “dial”
Second additional	—	—
Third additional	—	—

Table B-16. France: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High-Level Group (dBm)	-6	yes
DTMF Low-Level Group (dBm)	-8	yes
DTMF On-time (ms)	360	yes
DTMF Off-time (ms)	160	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no

Table B-16. France: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Germany

Table B-17. Germany: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	425 Hz	Continuous, min. 1.5 seconds
Busy	425 Hz	150 on, 475 off (2 cycles)
Ring	425 Hz	1000 on, 4000 off
Reorder	425 Hz	250 on, 250 off (2 cycles)
Stutter	425 Hz	150 on, 150 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-18. Germany: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low-Level Group (dBm)	-8	yes
DTMF On-time (ms)	100	yes
DTMF Off-time (ms)	100	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-11	yes
CPT detect minimum (dBm)	-25	yes

Table B-18. Germany: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Greece

Table B-19. Greece: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	350+440 Hz	Continuous, min. 1.5 seconds
Busy	480+620 Hz	500 on, 500 off (2 cycles)
Ring	440+480 Hz	1000 on, 3000 off
Reorder	480+620 Hz	250 on, 250 off (2 cycles)
Stutter	350+440 Hz	125 on, 125 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	350+440 Hz	125 on, 125 off followed by continuous tone of min. 1.5 seconds; report as “dial”
Second additional	350+440 Hz	125 on, 125 off (2 cycles) followed by continuous tone of min. 1.5 seconds
Third additional	—	—

Table B-20. Greece: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low-Level Group (dBm)	-8	yes
DTMF On-time (ms)	360	yes

Table B-20. Greece: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
DTMF Off-time (ms)	160	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Hong Kong

Table B-21. Hong Kong: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	350+440 Hz	Continuous, min. 1.5 seconds
Busy	480+620 Hz	500 on, 500 off (2 cycles)
Ring	440+480 Hz	1000 on, 3000 off
Reorder	480+620 Hz	250 on, 250 off (2 cycles)
Stutter	375+425 Hz	125 on, 125 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	375+425 Hz	125 on, 125 off followed by continuous tone of min. 1.5 seconds; report as “dial”
Second additional	375+425 Hz	125 on, 125 off (2 cycles) followed by continuous tone of min. 1.5 seconds; report as “stutter”
Third additional	—	—

Table B-22. Hong Kong: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low-Level Group (dBm)	-8	yes
DTMF On-time (ms)	360	yes
DTMF Off-time (ms)	160	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

India

Table B-23. India: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	350+440 Hz	Continuous, min. 1.5 seconds
Busy	480+620 Hz	300 on, 600 off (2 cycles)
Ring	440+480 Hz	1500 on, 3500 off
Reorder	480+620 Hz	250 on, 250 off (2 cycles)
Stutter	350+440 Hz	150 on, 150 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-24. India: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low-Level Group (dBm)	-8	yes
DTMF On-time (ms)	100	yes
DTMF Off-time (ms)	60	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Japan

Table B-25. Japan: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	404 Hz	Continuous, min. 2 seconds
Busy	404 Hz	500 on, 500 off (2 cycles)
Ring	375+425 Hz	1250 on, 2500 off
Reorder	—	—
Stutter	404 Hz	100 on, 100 off (3 cycles) followed by 250 on, 250 off
First additional	404 Hz	250 on, 250 off (2 cycles); report as ”dial”
Second additional	—	—
Third additional	—	—

Table B-26. Japan: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-10.2	yes
DTMF Low Level Group (dBm)	-11.2	yes
DTMF On-time (ms)	80	yes
DTMF Off-time (ms)	80	yes
Clipping threshold (dBm)	-16	yes
Clipping duration (ms)	1000	yes
Clipping limit (dBm)	-16	yes
CPT detect minimum (dBm)	-30	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Luxembourg

Table B-27. Luxembourg: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	425 Hz	Continuous, min. 1.5 seconds
Busy	425 Hz	500 on, 500 off (2 cycles)
Ring	425 Hz	1000 on, 3000 off
Reorder	425 Hz	250 on, 250 off (2 cycles)
Stutter	—	—
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-28. Luxembourg: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low Level Group (dBm)	-8	yes
DTMF On-time (ms)	100	yes
DTMF Off-time (ms)	100	yes
Clipping threshold (dBm)	-10	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-10	yes
CPT detect minimum (dBm)	-25	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Mexico

Table B-29. Mexico: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	350+425 Hz	Continuous, min. 2 seconds
Busy	350+425 Hz	250 on, 250 off (2 cycles)
Ring	425 Hz	1000 on, 4500 off
Reorder	—	—
Stutter	350+425 Hz	100 on, 100 off (3 cycles), followed by continuous tone of min. 2 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-30. Mexico: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low Level Group (dBm)	-8	yes
DTMF On-time (ms)	80	yes
DTMF Off-time (ms)	80	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Netherlands

Table B-31. Netherlands: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	425 Hz	Continuous, min. 1.5 seconds
Busy	425 Hz	500 on, 500 off (2 cycles)
Ring	425 Hz	1000 on, 3500 off
Reorder	425 Hz	250 on, 250 off (2 cycles)
Stutter	—	—
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-32. Netherlands: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-8.7	yes
DTMF Low Level Group (dBm)	-10.7	yes
DTMF On-time (ms)	100	yes
DTMF Off-time (ms)	100	yes
Clipping threshold (dBm)	-11.5	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-11.5	yes
CPT detect minimum (dBm)	-25	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

New Zealand

Table B-33. New Zealand: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	404+450 Hz	Continuous, min. 1.5 seconds
Busy	425 Hz	400 on, 400 off (2 cycles)
Ring	404+425 Hz	400 on, 200 off, 400 on, 2000 off
Reorder	425 Hz	2500 on, 500 off
Stutter	404+450 Hz	150 on, 150 off (3 cycles) followed by continuous tone, min. 1.5 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-34. New Zealand: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	1	no
DTMF High Level Group (dBm)	-8	yes
DTMF Low Level Group (dBm)	-10	yes
DTMF On-time (ms)	60	yes
DTMF Off-time (ms)	100	yes
Clipping threshold (dBm)	-12	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-12	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	350	no
Input volume	4000	no
Output volume	1000	no

Singapore

Table B-35. Singapore: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	404+450 Hz	Continuous, min. 1.5 seconds
Busy	404 Hz	400 on, 400 off (2 cycles)
Ring	404+425 Hz	250 on, 250 off, 250 on, 2000 off
Reorder	404+425 Hz	2500 on, 500 off
Stutter	404+450 Hz	150 on, 150 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	404+450 Hz	150 on, 150 off followed by continuous tone of min. 1.5 seconds
Second additional	—	—
Third additional	—	—

Table B-36. Singapore: Analog Interface Parameters

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low Level Group (dBm)	-8	yes
DTMF On-time (ms)	80	yes
DTMF Off-time (ms)	80	yes
Clipping threshold (dBm)	-10	yes
Clipping duration (ms)	750	yes
Clipping limit (dBm)	-10	yes
CPT detect minimum (dBm)	-30	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Spain

Table B-37. Spain: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	425 Hz	Continuous, min. 2.5 seconds
Busy	425 Hz	200 on, 200 off (2 cycles)
Ring	425 Hz	1500 on, 3000 off
Reorder	425 Hz	200 on, 200 off (2 cycles) followed by 200 on, 600 off
Stutter	425 Hz	150 on, 150 off (3 cycles) followed by continuous tone of min. 2.5 seconds
First additional	425 Hz	150 on, 150 off (2 cycles) followed by continuous tone of min. 2.5 seconds; report as “stutter”
Second additional	425 Hz	150 on, 150 off followed by continuous tone of min. 2.5 seconds; report as “dial”
Third additional	—	—

Table B-38. Spain: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low Level Group (dBm)	-8	yes
DTMF On-time (ms)	80	yes
DTMF Off-time (ms)	160	yes
Clipping threshold (dBm)	-10	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-10	yes
CPT detect minimum (dBm)	-25	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no

Table B-38. Spain: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Thailand

Table B-39. Thailand: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	350+440 Hz	Continuous, min. 1.5 seconds
Busy	480+620 Hz	300 on, 600 off (2 cycles)
Ring	440+480 Hz	1500 on, 3500 off
Reorder	480+620 Hz	250 on, 250 off (2 cycles)
Stutter	350+440 Hz	150 on, 150 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-40. Thailand: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low Level Group (dBm)	-8	yes
DTMF On-time (ms)	360	yes
DTMF Off-time (ms)	160	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes

Table B-40. Thailand: Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

United Kingdom

Table B-41. United Kingdom: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	350+440 Hz	Continuous, min. 1.5 seconds
Busy	404 Hz	375 on, 375 off (2 cycles)
Ring	404+450 Hz	400 on, 200 off, 400 on, 2000 off
Reorder	404 Hz	400 on, 350 off, 225 on, 525 of 400 on, 350 off, 225 on, 525 off
Stutter	350+440 Hz	100 on, 100 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-42. United Kingdom Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-11	yes
DTMF Low Level Group (dBm)	-13	yes
DTMF On-time (ms)	80	yes
DTMF Off-time (ms)	80	yes

Table B-42. United Kingdom Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Clipping threshold (dBm)	-13	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-9	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	80	no
Input volume	4000	no
Output volume	1000	no

United States

Table B-43. United States: Switch Tones Parameters Default Settings

Tone	Frequency	Description
Dial	350+440 Hz	Continuous, min. 1.5 seconds
Busy	480+620 Hz	300 on, 600 off (2 cycles)
Ring	440+480 Hz	1500 on, 3500 off
Reorder	480+620 Hz	250 on, 250 off (2 cycles)
Stutter	350+440 Hz	150 on, 150 off (3 cycles) followed by continuous tone of min. 1.5 seconds
First additional	—	—
Second additional	—	—
Third additional	—	—

Table B-44. United States Analog Interface Parameters Default Settings

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low Level Group (dBm)	-8	yes
DTMF On-time (ms)	360	yes
DTMF Off-time (ms)	160	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-8.8	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Abbreviations

A

AC
alternating current

ACD
automatic call distribution

ADAP
administration and data acquisition package

ADU
asynchronous data unit

ALT
assembly load and test

AMIS
Audio Messaging Interchange Specification

API
application programming interface

AUDIX
Audio Information Exchange

AWG
American wire gauge

B

BCS
Business Communications Systems

BIOS
basic input/output system

bit
binary digit

bps
bits per second

BRI
basic rate interface

BSC
binary synchronous communications

BTU
British thermal unit

C

CAS
call accounting system

CCA
call classification analysis

CDH
call data handler process

CELP
code excited linear prediction

CICS
customer information control system

CMS
call management system

CO
central office

COIN
central office implemented network

COM1
serial communications port 1

COM2
serial communications port 2

COR
class of restriction

COS
class of service

CPU
central processing unit

CSI
called subscriber information

CTS
clear to send

D

DAC
dial access code

DBP
database processor

DC
direct current

DCE
data communications equipment

DCIU
data communications interface unit

DCP
digital communications protocol

DCS
distributed communications system

DID
direct inward dialing

DIP
data interface process

DMA
direct memory access

DNIS
dialed number identification service

DSP
digital signal processor

DSR
data set ready

DSU
data service unit

DTE
data terminal equipment

DTMF
dual tone multifrequency

DTR
data terminal ready

E

EIA
Electronic Industries Association

ESD
electrostatic discharge

ESS
electronic switching system

F

F key
function key

FIFO
first-in first-out

FOOS
facility out of service

G

GOS
grade of service

H

Hz
hertz

I

I/O
input/output

IDI
isolating data interface

IMAPI
INTUITY messaging application programming interface

INADS
initialization and administration system

IRQ
interrupt request

ISDN
integrated services digital network

IVC6
integrated voice CELP card (6 channels)

IVR
interactive voice response

K

Kbps
kilobits per second

Kbyte
kilobyte (1024 bytes)

kHz
kilohertz

L

LAN
local area network

LCD
liquid crystal display

LED
light-emitting diode

LIFO
last-in first-out

LWC
leave word calling

M

MANOOS
manually out of service

Mbyte
megabyte (one million bytes)

MHz
megahertz

modem
modulator/demodulator

MPDM
modular processor data module

ms
millisecond

MT
maintenance (Intuity AUDIX software component)

MTBF
mean time between failures

MWI
message-waiting indicator

MWL
message-waiting lamp

N

NW
INTUITY AUDIX Digital Networking

O

OA&M
operations, administration, and maintenance

OS
operating system

OSI
open systems interconnection

P

PBX
private branch exchange

PC
power converter or personal computer

PDM
processor data module

PEC
price element code

PIB
processor interface board

PMS
property management system

POST
power-on self test

R

RAM
random-access memory

REN
ringer equivalence number

ROM
read-only memory

RTS
request to send

RTU
right to use

S

SCA
switch communications adapter

SCSI
small computer systems interface

SID
switch integration device

SIMM
single in-line memory module

SMSI
simplified message service interface

SW
switch integration (Intuity AUDIX software component)

T

TCP/IP
Transmission Control Protocol/Internet Program

TDD
telecommunications device for the deaf

TDM
time division multiplex

T/R
tip/ring

TRIP
tip/ring input process

TSC
Avaya's Technical Services Center

U

UCD
uniform call distribution

UPS
uninterruptible power supply

V

VM
INTUITY AUDIX Voice Messaging

VP
voice platform (Intuity AUDIX software component)

VROP
voice response output process

Glossary

Numerics

5ESS Switch
A central office switch manufactured by Avaya that can be integrated with the Intuity AUDIX™ system.

A

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

ACA
See *automatic circuit assurance*.

ACD
See *automatic call distribution*.

activity menu
The list of options spoken to subscribers when they first access a messaging system. Selecting an activity is the starting point for all subscriber operations.

ADAP
See *administration and data acquisition package*.

address
INTUITY AUDIX subscriber identification, containing the subscriber's extension and machine, that indicates where the system needs to deliver a message. An address may include several subscribers or mailing lists. Name or number addressing can be selected with the ☐ A (Address) command.

adjunct
A separate system closely integrated with a switch, such as a Intuity AUDIX system or a call management system (CMS).

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

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

ADU
See *asynchronous data unit*.

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

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

alphanumeric
Consisting of alphabetic and numeric symbols or punctuation marks.

ALT
See *assemble, load, and test.*

American wire gauge (AWG)
A standard measuring gauge for nonferrous conductors.

AMIS
See *Audio Messaging Interchange Specification*.

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

analog networking
A method of transferring a message from one messaging system to another whereby the message is played back (voiced) during the transfer.

analog signal
In teleprocessing usage, a communications path that usually refers to a voice-grade telephone line.

announcement
A placeholder within the Intuity AUDIX system for playing fragments. Each event that may occur within AUDIX has one or more announcement numbers permanently assigned to it. Fragment numbers are then assigned to the announcement numbers.

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

antistatic
A treatment for material to prevent the build-up of static electricity.

API
See *application programming interface.*

application
A computer software program.

application identifier
A two-letter code used in the administrator's log to identify the application or subsystem for which an alarm is being generated. There are 11 application identifiers as follows: CA (Call Accounting), EL (Enhanced List), ML (MERLIN LEGEND), MT (Maintenance), NW (Digital Networking), SW (Switch Integration), VM (Voice Messaging), VP (Voice Processing), and VR (Voice Response).

application programming interface (API)
A set of formalized software calls and routines that an application program can reference to access underlying network services.

assemble, load, and test (ALT)
The Avaya factory process that preloads software, installs hardware, and tests the system prior to shipping.

ASP
advanced signal processor

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

asynchronous data unit (ADU)
An electronic communications device that can extend data transmission over asynchronous lines more than 50 feet in length. Recommended ADUs for use with the Intuity AUDIX system include Z3A1 or Z3A4.

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

attendant console
A special-purpose telephone with numerous lines and features usually located at the front desk of a business or other organization. The front desk attendant uses this telephone to answer and transfer calls.

Audio Messaging Interchange Specification (AMIS)
An analog networking protocol that allows subscribers to exchange messages with any messaging system that also has AMIS Analog Networking capabilities. Messages can be exchanged with subscribers on Intuity AUDIX systems as well as with subscribers on remote messaging systems made by vendors other than Avaya, Inc.

Audio Information Exchange (AUDIX)
A complete messaging system accessed and operated by touch-tone telephones and integrated with a switch.

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

AUDIX
See *Audio Information Exchange*.

autodelete
An INTUITY AUDIX feature that allows subscribers to designate that faxes be automatically deleted from their mailboxes after they are printed.

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

automatic call distribution (ACD)
The System 85, Generic 2, or Generic 3 call-distribution group of analog ports that connects Intuity AUDIX subscribers to the system. See also *call-distribution group*.

automatic circuit assurance (ACA)
A feature of the switch that keeps records of both very long and very short calls and notifies the attendant when these calls exceed a certain parameter. The logic is that many very short calls or one very long one may suggest a trunk that is hung, broken, or out of order. The attendant can then physically dial into the trunk to check it.

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

autoprint
An INTUITY AUDIX feature that allows subscribers to designate that faxes be automatically sent to a specified print destination.

autoscan
See *automatic message scan*.

AWG
See *American wire gauge.*

B

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

backplane
A centrally located device within a computer to which individual circuit cards are plugged for communication across an internal bus.

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

basic input/output system (BIOS)
A system that contains the buffers for sending information from a program to the actual hardware device for which the information is intended.

basic call transfer
The switch-hook flash method used to send the INTUITY AUDIX transfer command over analog voice ports.

basic rate access
See *basic rate interface*.

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

binary synchronous communications (BSC)
A character-oriented synchronous link protocol.

BIOS
See *basic input/output system*.

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

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

boot filesystem
The filesystem from which the system loads its initial programs.

BRI
See *basic rate interface*.

broadcast messaging
An INTUITY AUDIX feature that enables the system administrator and other designated subscribers to send a message to all subscribers automatically.

BSC
See *binary synchronous communications*.

buffer
A temporary storage area used to equalize or balance different operating speeds. A buffer can be used between a slow input device, such as a terminal keyboard, and the main computer, which operates at a very high speed.

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

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

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

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

C

CA
Call accounting system application identifier. See *application identifier*.

call accounting system (CAS)
A software device that monitors and records information about a calling system.

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

call-answer language choice
The capability of subscriber mailboxes to accept messages in different languages. For the INTUITY AUDIX application, this capability exists when the multilingual feature is turned on.

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

call classification analysis (CCA)
A process that enables application designers to use information available within the system to classify the disposition of originated and transferred calls.

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

call data handler process (CDH)
A software process that accumulates generic call statistics and application events.

call detail recording (CDR)
A switch feature that uses software and hardware to record call data. See also *call detail recording utility*.

call detail recording utility (CDRU)
Applications software that collects, stores, optionally filters, and outputs call detail records for direct or polled output to peripheral devices. See also *call detail recording*.

call delivery
See *message delivery*.

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

call management system (CMS)
An inbound call distribution and management reporting package.

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

called subscriber information (CSI)
The identifier for the answering fax endpoint. This identifier is sent in the T.30 protocol and is generally the telephone number of the fax endpoint.

calling tone (CNG tone)
The distinctive tone generated by a fax endpoint when placing a call (a constant 1100-Hz tone that is on for 1/2 second, off for 3 seconds).

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

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

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

CAS
See *call accouting system*.

CCA
See *call classification analysis.*

CDH
See *call data handler process*.

CDR
See *call detail recording*.

CDRU
See *call detail recording utility (CDRU).*

CED tone
See *called tone*.

CELP
See *code excited linear prediction*.

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

central processing unit (CPU)
The component of the computer that manipulates data and processes instructions coming from software.

channel
A telecommunications transmission path for voice and/or data.

channel capacity
A measure of the maximum bit rate through a channel.

class of restriction (COR)
A feature that allows up to 64 classes of call-origination and call-termination restrictions for telephones, telephone groups, data modules, and trunk groups. See also *class of service*.

class of service (COS)
The standard set of INTUITY AUDIX features given to subscribers when they are first administered (set up with a voice mailbox). See also *class of restriction*.

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

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

CMS
See *call management system*.

CNG tone
See *calling tone*.

CO
See *central office*.

COR
See *class of restriction*.

COS
See *class of service*.

code excited linear prediction (CELP)
An analog-to-digital voice coding scheme.

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

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

comcode
A numbering system for telecommunications equipment used by Avaya. Each comcode is a 9-digit number that represents a specific piece of hardware, software, or documentation.

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

community
A group of telephone subscribers administered with special send and receive messaging capabilities. A community is typically comprised of people who need full access to each other by telephone on a frequent basis. See also *default community*.

compound message
A message that combines a voice message and a fax message into one unit, which INTUITY AUDIX then
handles as a single message.

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

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

COS
See *class of service*.

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

CPU
See *central processing unit*.

cross connect
Distribution-system equipment used to terminate and administer communication circuits.

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

CSI
See *called subscriber information*.

CTS
See *clear to send*.

D

DAC
See *dial access code*.

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

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

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

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

data service unit (DSU)
A device used to access digital data channels. DATAPHONE II 2500 DSUs are synchronous data communications equipment (DCE) devices used for extended-local Intuity AUDIX system connec-

tions. The 2600 or 2700 series may also be used; these support diagnostic testing and the DATA-PHONE II Service network system.

data set
Another term for a modem, although a data set usually includes the telephone. See also *modem*.

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

DBP
See *data base processor*.

DCE
See *data communications equipment*.

DCIU
See *data communications interface unit*.

DCP
See *digital communications protocol*.

DCS
See *distributed communications system*.

debug
See *troubleshooting*.

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

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

default community
A group of telephone subscribers administered with restrictions to prevent them from sending messages to or receiving messages from other communities. If a system is administered to use communities, the default community is comprised of all the AUDIX subscribers defined on that system.

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

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

demand testing
Testing performed on request (usually by service personnel).

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

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

dial string
A series of numbers used to initiate a call to a remote AMIS machine. A dial string tells the switch what type of call is coming (local or long distance) and gives the switch time to obtain an outgoing port, if applicable

dialed number identification service (*DNIS_SVC)
An available channel service assignment on the Intuity AUDIX system. Assigning this service to a channel permits the Intuity AUDIX system to interpret information from the switch and operate the appropriate application for the incoming telephone call.

DID
See *direct inward dialing*.

digital communications protocol (DCP)
A 64-Kbps digital data transmission code with a 160-Kbps bipolar bit stream divided into two information (I) channels and one signaling (S) channel.

digital networking
A method of transferring messages between messaging systems in a digital format. See also *INTUITY AUDIX Digital Networking*.

digital signal processor (DSP)
A specialized digital microprocessor that performs calculations on digitized signals that were originally analog and then sends the results on.

DIP switch
See *dual in-line package switch*.

direct inward dialing (DID)
The ability for an outside caller to call an internal extension without having to pass through an operator or attendant.

direct memory access (DMA)
A quick method of moving data from a storage device directly to RAM, which speeds processing.

directory
1. A INTUITY AUDIX feature that allows you to hear a subscriber's name and extension after pressing [ ] [ ] [N] at the activity menu. 2. A group of related files accessed by a common name in software.

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

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

distribution list
See *mailing list*.

DMA
See *direct memory access*.

DNIS
See *dialed number identification service*.

domain
An area where data processing resources are under common control. The INTUITY AUDIX system is one domain and an e-mail system is another domain.

DSP
See *digital signal processor*.

DSU
See *data service unit*.

DTE
See *data terminal equipment*.

DTMF
See *dual tone multifrequency*.

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

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

dual tone multifrequency (DTMF)
A way of signaling consisting of a pushbutton or touch-tone dial that sends out a sound consisting of two discrete tones that can be picked up and interpreted by telephone switches.

E

EIA interface
A set of standards developed by the Electrical Industries Association (EIA) that specifies various electrical and mechanical characteristics for interfaces between electronic devices such as computers, terminals, and modems. Also known as *RS-232*.

ELA
See Enhanced-List Application.

electronic mail
See *e-mail*.

electrostatic discharge (ESD)
The discharge of a static charge on a surface or body through a conductive path to ground, ESD can damage integrated circuits.

e-mail
The transfer of a wide variety of message types across a computer network (LAN or WAN). E-mail messages may be text messages containing only ASCII files or may be complex multimedia messages containing embedded voice messages, software files, and images.

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

endpoint
See *fax endpoint*.

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

Enhanced-List Application (ELA)
An INTUITY AUDIX option that facilitates message delivery to large numbers of recipients. There can be up to 100 enhanced lists per system, each of which can contain up to 1500 addresses.

enhanced serial data interface (ESDI)
A software-controlled and hardware-controlled method used to store data on magnetic peripherals.

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

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

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

escape from reply
The ability to quickly return to getting messages for a subscriber who encounters a problem trying to respond to a message. To escape, the subscriber presses [#].

escape to attendant
An INTUITY AUDIX feature that allows subscribers with the call answer feature to have a personal attendant or operator administered to pick up their unanswered calls. A system-wide extension could also be used to send callers to a live agent.

ESD
See *electrostatic discharge*.

ESDI
See *enhanced serial data interface*.

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

F

facilities restriction level (FRL)
A value that determines which types of calls the subscribers of a switch are allowed to make.

facility out-of-service (FOOS)
State of operation during which the current channel is not receiving a dial tone and is not functioning.

facsimile
1. A digitized version of written, typed, or drawn material transmitted over telephone lines and printed out elsewhere. 2. Computer-generated text or graphics transmitted over computer networks. A computer-generated fax is typically printed to a fax machine, but can remain stored electronically.

fax
See *facsimile*.

fax addressing prefix
Uniquely identifies a particular fax nodepoint to the Intuity AUDIX system. Used by the system as a "template" to differentiate all call-delivery machines on the network from each other.

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

fax print destination prefix
A dial string that the Intuity AUDIX system adds to the fax telephone number the subscriber enters to print a fax. The system takes the full number (fax print destination prefix + fax telephone extension) and hunts through the machine translation numbers until it finds the specific fax endpoint.

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

FIFO
See *first-in/first-out*.

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

filename
Alphanumeric characters used to identify a particular file.

file redundancy
See *mirroring*.

file system
A collection of related files (programs or data) stored on disk that are required to initialize an Intuity AUDIX system.

first-in/first-out (FIFO)
A method of processing telephone calls or data in which the first call or data to be received is the first call or data to be processed.

F key
See *function key*.

FNPAC
See *foreign numbering-plan area code*.

FOOS
See *facility out-of-service*.

foreign exchange (FX)
A central office (CO) other than the one providing local access to the public telephone network.

foreign numbering-plan area code (FNPAC)
An area code other than the local area code that must be dialed to call outside the local geographical area.

format
To set up a disk, floppy diskette, or tape with a predetermined arrangement of characters so that the system can read the information on it.

FRL
See *facilities restriction level*.

function
Individual steps or procedures within a mailbox activity.

function key (F key)
A key on a computer keyboard programmed to perform a defined function when pressed. The user interface for the Intuity AUDIX system defines keys F1 through F8.

FX
See *foreign exchange*.

G

Generic 1, 2, or 3
Avaya switch system software releases, designed for serving large communities of System 75 and System 85 subscribers.

generic tape
A copy of the standard software and stand-alone tape utilities that is shipped with a new Intuity AUDIX system.

GOS
See *grade of service*.

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

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

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

H

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

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

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

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

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

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

I

I/O
Input/output.

IDI
See *isolating data interface*.

IMAPI
See *INTUITY messaging application programming interface*.

INADS
See *initialization and administration system*.

information service
See *bulletin board*.

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

initialization and administration system (INADS)
A computer-aided maintenance system used by remote technicians to track alarms.

initialize
To start up the system for the first time.

input
A signal fed into a circuit or channel.

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

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

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

internal e-mail
Software on a PC that provides messaging capability between subscribers on the same AUDIX system, or to administered remote AUDIX systems and subscribers. Subscribers can create, send, and receive a message that contains multiple media types; specifically, voice, fax, text, or file attachments (software files, such as a word processing or spreadsheet file).

interrupt request (IRQ)
Within a PC, a signal sent from a device to the CPU to temporarily suspend normal processing and transfer control to an interrupt handling routine.

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

INTUITY Message Manager
A Windows-based software product that allows INTUITY AUDIX subscribers to receive, store, and send their voice/FAX messages from a PC. The software also enables subscribers to create and send multimedia messages that include voice, fax, file attachments, and text.

INTUITY messaging application programming interface (IMAPI)
A software function-call interface that allows INTUITY AUDIX to interact with Message Manager.

IRQ
See *interrupt request*.

ISDN
See *integrated services digital network*.

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

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

J

jumper
Pairs or sets of small prongs or pins on circuit cards and mother boards the placement of which determines the particular operation the computer selects. When two pins are covered, an electrical circuit is completed. When the jumper is uncovered, the connection is not made. The computer interprets these electrical connections as configuration information.

K

L

label
The name assigned to a disk device (either a removable tape cartridge or permanent drive) through software. Cartridge labels may have a generic name (such as “3.3”) to show the software release, or a descriptive name if for back-up copies (such as “back01”). Disk drive labels usually indicate the disk position (such as “disk00” or “disk02”).

LAN
See *local area network*.

last-in/first-out (LIFO)
A method of processing telephone calls or data in which the last call (or data) received is the first call (or data) to be processed.

LCD
See *liquid crystal display.*

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

LED
See *light emitting diode*.

LIFO
See *last-in/first-out*.

light emitting diode (LED)
A light on the hardware platform that shows the status of operations.

liquid crystal display (LCD)
The 10-character alphanumeric display that shows the status of the system, including alarms.

load
The process of reading software from external storage (such as disk) and placing a copy in system memory.

local area network (LAN)
A network of PCs that communicate with each other and that normally share the resources of one or more servers. Operation of Message Manager requires that the INTUITY AUDIX system and the subscribers’ PCs be on a LAN.

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

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

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

login
A unique code a subscriber must enter to gain approved access to the Intuity AUDIX system. See also *password*.

login announcement
A feature enabling the system administrator and other designated subscribers to create a mail message that is automatically played to all INTUITY AUDIX subscribers every time they log in to the system.

Lotus Notes
Information management software for work groups that allows individuals to share and manipulate information over a local or wide area network

LWC
See *leave word calling*.

M

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

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

mailing list
A group of subscriber addresses assigned a list ID# and public or private status. A mailing list may be used to simplify the sending of messages to several subscribers.

maintenance
The process of identifying system errors and correcting them, or taking steps to prevent problems from occurring.

major alarm
An alarm detected by Intuity AUDIX software that affects at least one fourth of the Intuity AUDIX ports in service. Often a major alarm indicates that service is affected.

MANOOS
See *manually out-of-service*.

manually out-of-service
State of operation during which a unit has been intentionally taken out of service.

MAP
See *multi-application platform*.

mean time between failures
The average time a manufacturer estimates will elapse before a failure occurs in a component or system.

media type
The form a message takes. The media types supported by the Intuity AUDIX system are voice, text, file attachments, and fax.

memory
A device that stores logic states such that data can be accessed and retrieved. Memory may be temporary (such as system RAM) or permanent (such as disk).

menu
A list of options displayed on a computer terminal screen or spoken by a voice processing system. Subscribers choose the option that reflects what action they want the system to take.

menu tree
The way in which nested automated attendants are set up.

message categories
Groups of messages in INTUITY AUDIX subscribers' mailboxes. Categories include *new*, *unopened*, and *old* for the incoming mailbox and *delivered*, *accessed*, *undelivered*, *undeliverable* (not deliverable), and *file cabinet* for the outgoing mailbox.

message component
A media type included in a multimedia message. These types include voice, text, file attachments, and fax messages.

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

Message Manager
See *INTUITY Message Manager*.

message waiting indicator (MWI)
An indicator that alerts Intuity AUDIX subscribers that they have received new mail messages. An MWI can be an LED or neon lamp, or an audio tone (stutter dial tone).

message waiting lamp (MWL)
See *message-waiting indicator*.

migration
An installation that moves data to the Intuity AUDIX system from another type of Avaya messaging system, for example, from AUDIX R1, DEFINITY AUDIX, or AUDIX Voice Power.

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

mirroring
A Intuity AUDIX system feature that allows data from crucial filesystems to be continuously copied to back-up (mirror) filesystems while the system is running. If the system has some problem where an original filesystem cannot be used, the backup filesystem is placed in service automatically.

ML
MERLIN LEGEND application identifier. See *application identifier*.

mode code
A string of touch-tones from aa switch in an inband integration. A mode code may send the INTUITY AUDIX system information such as call type, calling party, called party, and on/off signals for message waiting indicators.

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

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

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

MPDM
See *modular processor data module*.

MT
Maintenance application identifier. See *application identifier*.

MTBF
See *mean time between failures*.

multi-application platform (MAP)
The computer hardware platform used by the Intuity AUDIX system.

multilingual feature
A feature that allows announcement sets to be active simultaneously in more than one language on the system. Mailboxes can be administered so that subscribers can hear prompts in the language of their choice.

MWI
See *message waiting indicator*.

N

networking
See *INTUITY AUDIX Digital Networking*.

networking prefix
A set of digits that identifies an Intuity AUDIX machine.

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

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

NPA
See *numbering plan area*.

NT
Networking application identifier. See *application identifier*.

MWL
See *message waiting lamp*.

numbering plan area
Formal name for 3-digit telephone area codes in North America. Within an area code, no two telephone lines may have the same 7-digit phone number. The code is often designated as *NXX*, to indicate the three digits.

O

off-hook
See *switch hook*.

on-hook
See *switch hook*.

on-line help
An Intuity AUDIX system feature that provides information about user interface, screens, and menus by pressing a predetermined key. See also *help*.

open systems interconnection (OSI)
An internationally accepted framework of standards for communication between systems made by different vendors.

operating system (OS)
The set of software programs that runs the hardware and interprets software commands.

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

OS
See *operating system*.

OSI
See *open systems interconnection*.

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

outgoing mailbox
A storage area on the Intuity AUDIX system where subscribers can keep copies of messages for future reference or action.

P

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

password
1. A word or character string recognized automatically by the Intuity AUDIX system that allows a subscriber access to his/her mailbox or a system administrator access to the system data base. 2. An alphanumeric string assigned to local and remote networked machines to identify the machines or the network. See also *login.*

password aging
An INTUITY AUDIX feature that allows administrators to set a length of time after which a subscriber's AUDIX password or the administrator's system password expires. The subscriber or administrator must then change the password.

PBX
See *private branch exchange*.

PC
See *power converter.*

PDM (processor data module)
See *modular processor data module (MPDM)*.

peripheral device
Equipment such as a printer or terminal that is external to the Intuity AUDIX cabinet, but necessary for full operation and maintenance of the system. Also called a *peripheral*.

personal directory
An INTUITY AUDIX feature that allows each subscriber to create a private list of customized names.

personal fax extension
See *secondary extension*.

PI
See *processor interface*.

PIB
See *processor interface*.

pinouts
The signal description per pin number for a particular connector.

PMS
See *property management system*.

port
A connection or link between two devices that allows information to travel to a desired location. For example, a switch port connects to a Intuity AUDIX voice port to allow a caller to leave a message.

POST
See *power-on self test*.

power on self test (POST)
A set of diagnostics stored in ROM that tests components such as disk drives, keyboard, and memory each time the system is booted. If problems are identified, a message is sent to the screen.

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

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

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

private branch exchange (PBX)
An analog, digital, or electronic telephone switching system where data and voice transmissions are not confined to fixed communications paths, but are routed among available ports or channels. See also *switch*.

private mailing list
A list of addresses that only the Intuity AUDIX system subscriber who owns it can access.

private messaging
A feature of INTUITY AUDIX that allows a subscriber to send a message that cannot be forwarded by the recipient.

processor data module (PDM)
See *modular processor data module (MPDM)*.

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

programmed function key
See *function key*.

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

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

pulse-to-tone converter
A device connected to the switch that converts signals from a rotary pulses to touch tone signals. This device allows callers to use rotary telephones to access options in a Intuity AUDIX subscriber's mailbox or in an automated attendant.

R

RAM
See *random access memory*.

random access memory (RAM)
The memory used in most computers to store the results of ongoing work and to provide space to store the operating system and applications that are actually running at any given moment.

read-only memory (ROM)
A form of computer memory that allows values to be stored only once; after the data is initially recorded, the computer can only read the contents. ROM is used to supply constant code elements such as bootstrap loaders, network addresses, and other more or less unvarying programs or instructions.

reboot
See *boot*.

remote access
Sending and receiving data to and from a computer or controlling a computer with terminals or PCs connected through communication (that is, telephone) links.

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

remote maintenance
The ability of Avaya personnel to interact with a remote computer through a telephone line or LAN connection to perform diagnostics and some system repairs. See also *remote service center*.

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

remote service center
An Avaya or Avaya-certified organization that provides remote support to Intuity AUDIX customers. Depending upon the terms of the maintenance contract, your remote service center may be notified of all major and minor alarms and have the ability to remotely log in to your system and remedy problems. See also *remote maintenance.*

remote terminal
A terminal connected to a computer over a telephone line.

remote subscribers
INTUITY AUDIX subscribers whose mailboxes reside on a remote INTUITY AUDIX Digital Networking machine.

REN
See *ringer equivalence number*.

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

reply to sender
An INTUITY AUDIX feature that allows subscribers to immediately place a call to the originator of an incoming message if that person is in the switch's dial plan.

request to send (RTS)
One of the control signals on an EIA-232 connector that places the modem in the originate mode so that it can begin to send.

restart
1. An Intuity AUDIX feature that allows INTUITY AUDIX subscribers who have reached the system through the call answer feature to access their own mailboxes by entering the [ ] [R] (Restart) command. This feature is especially useful for long-distance calls or for subscribers who want to access the Intuity AUDIX system when all the ports are busy. 2. The reinitialization of certain software, for example, *restarting* the messaging system.

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

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

reusable upgrade kit (RUK)
A package shipped to the customer's site prior to an upgrade that contains materials the technician needs to complete the installation. This package includes an A/B switch box, a keyboard, a 25-foot coaxial cable, two T adapters, and terminations to a LAN circuit card. It remains the property of Avaya once the installation is finished.

right-to-use (RTU) fee
A charge to the customer to access certain functions or capacities that are otherwise restricted, for example, additional voice or networking ports or hours of speech storage. Avaya, Inc. personnel can update RTU parameters either at the customer's site or remotely via a modem.

ringer equivalence number (REN)
A number required in the United States for registering your telephone equipment with a service provider.

ROM
See *read-only memory*.

RS-232
See *EIA interface.*

RTS
See *request to send*.

RUK
See *reusable upgrade kit*.

S

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

scheduled delivery time
A time and/or date that an INTUITY AUDIX subscriber can assign to a message that tells the system when to deliver it. If a delivery time is omitted, the system sends the message immediately.

screen
That portion of the Intuity AUDIX user interface through which most administrative tasks are performed. Intuity AUDIX screens request subscriber input in the form of a command from the `enter command:` prompt.

SCSI
See *small computer system interface*.

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

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

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

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

SID
See *switch integration device*.

SIMM
See *single in-line memory module*.

simplified message service interface (SMSI)
Type of data link connection to an integrated 1A ESS or 5ESS switch in the Intuity AUDIX system.

simplified message desk interface (SMDI)
Also known as station message desk interface. Type of data link from the central office that contains information and instructions for the Intuity AUDIX system. With SMDI, the caller need not re-enter the called number once the call terminates to the Intuity AUDIX system. See also *simplified message service interface*.

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

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

SMDI
See *station message desk interface*.

SMDR
See *station message detail recording*.

SMSI
See *simplified message service interface*.

SP
signal processor

SSP
scaleable signal processor

station message desk interface (SMDI)
See *simplified message desk interface*.

station message detail recording
See *call detail recording (CDR)*.

subscriber
A person who has been assigned the ability to access the INTUITY AUDIX Voice Messaging system.

surge
A sudden rise and fall of voltage in an electrical circuit.

surge protector
A device that plugs into the telephone system and the commercial AC power outlet to protect the telephone system from damaging high-voltage surges.

SW
Switch integration application identifier. See *application identifier*.

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

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

switch hook
The device at the top of most telephones that is depressed when the handset is resting in the cradle (that is, when the telephone is *on hook*). This device is raised when the handset is picked up (that is, when the telephone is *off hook*).

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

switch integration
Sharing of information between a messaging system and a switch to provide a seamless interface to callers and system subscribers. A fully integrated INTUITY AUDIX system, for example, answers each incoming telephone call with information taken directly from the switch. Such information includes the number being called and the circumstances under which the call was sent to it, for example, covered from a busy or unanswered extension.

switch integration device (SID)
A combination of hardware and software that passes information from the switch to the Intuity AUDIX system thus allowing it to share information with non-Avaya switches. The operation of a SID is unique to the particular switch with which it interfaces.

switch network
Two or more interconnected switching systems.

synchronized mailbox
A mailbox that is paired with a corresponding mailbox in another domain and linked via software that keeps track of changes to either mailbox. When the contents of one mailbox change, the software replicates that change in the other mailbox.

synchronizer
The name given to the trusted server by the e-mail vendor, Lotus Notes.

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

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

System 75
An advanced digital switch manufactured by Avaya, Inc. that supports up to 800 lines for voice and data communications.

System 85
An advanced digital switch manufactured by Avaya, Inc. that supports up to 3000 lines for voice and data communications.

system configuration
See *configuration*.

T

T.30
The standard for Group III fax machines that covers the protocol used to manage a fax session and negotiate the capabilities supported by each fax endpoint.

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

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

TCP/IP
See *transmission control protocol/internet protocol*.

TDD
See *telecommunications device for the deaf*.

TDM
See *time division multiplexing*.

telecommunications device for the deaf (TDD)
A device with a keyboard and display unit that connects to or substitutes for a telephone. The TDD (also known as TTY) allows a deaf or hearing-impaired person to communicate over the telephone lines with other people who have TDDs. It also allows a deaf person to communicate with the INTUITY AUDIX system.

terminal
See *display terminal*.

terminal type
A number indicating the type of terminal from which a subscriber is logging in to the Intuity AUDIX system. Terminal type is the last required entry before gaining access to the Intuity AUDIX display screens.

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

time division multiplexing (TDM)
A method of serving multiple channels simultaneously over a common transmission path by assigning the transmission path sequentially to the channels, with each assignment being for a discrete time interval.

tip/ring
A term used to denote the analog telecommunications interface.

tone generator
A device acoustically coupled to a rotary telephone used to produce touch-tone signals.

traffic
The flow of attempts, calls, and messages across a telecommunications network.

translations
Software assignments that tell a system what to expect on a certain voice port or the data link, or how to handle incoming data. Translations customize the Intuity AUDIX system and switch features for subscribers.

transmission control protocol/internet protocol (TCP/IP)
A suite of protocols that allow disparate hosts to connect over a network. Transmission control protocol (TCP) organizes data on both ends of a connection and ensures that the data that arrives matches that which was sent. Internet protocol (IP) ensures that a message passes through all the necessary routers to the proper destination.

T/R
See *tip/ring*.

troubleshooting
The process of locating and correcting errors in computer programs (also called *debugging)* or systems.

trusted server
A server that uses IMAPI to access an INTUITY AUDIX mailbox on behalf of a subscriber and is empowered to do everything to a subscriber message that INTUITY AUDIX can do.

TTS
Text-to-Speech

TTY
See *telecommunications device for the deaf*.

U

UCD
See *uniform call distribution*.

Undelete
An INTUITY AUDIX feature that allows subscribers to restore the last message deleted by pressing ☐ U.

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

unequipped
See *equipped/unequipped*.

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

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

uninterruptable power supply (UPS)
An auxiliary power unit that provides continuous power in cases where commercial power is lost.

UNIX operating system
A multi-user, multi-tasking computer operating system.

upgrade
An installation that moves an Intuity AUDIX system to a newer release.

untouched message
An INTUITY AUDIX feature that allows a subscriber to keep a message in its current category by using the ☐ ☐ H (Hold) command. If the message is in the new category, message-waiting indication remains active (for example, the message-waiting lamp remains lit).

UPS
See *uninterruptable power supply*.

U. S. 123
An alternate announcement set in U. S. English whose prompts use numbers, not letters, to identify telephone keypad presses. For example, a prompt might say, "*Press star three,"* instead of, *"Press star D*."

user interface
The devices by which subscribers access their mailboxes, manage mailing lists, administer personal greetings, and use other messaging capabilities. Types of user interfaces include a touch-tone telephone keypad and a PC equipped with Message Manager.

subscriber population
A combination of different types of subscribers on which Intuity AUDIX configuration guidelines are based.

V

vector
A customized program in the switch for processing incoming calls.

VM
Voice messaging application identifier. See *application identifier*.

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

voice mail
See *voice message*.

voice mailbox
See *mailbox*.

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

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

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

voicing
1. Speaking a message into the Intuity AUDIX system during recording. 2. Having the system play back a message or prompt to a subscriber.

VP
Voice platform application identifier. See *application identifier*.

VR
Voice response application identifier. See *application identifier*.

W

WAN
See *wide area network*.

wide area network (WAN)
A data network typically extending a local area network (LAN) over telephone lines to link with LANS in other buildings and/or geographic locations.

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