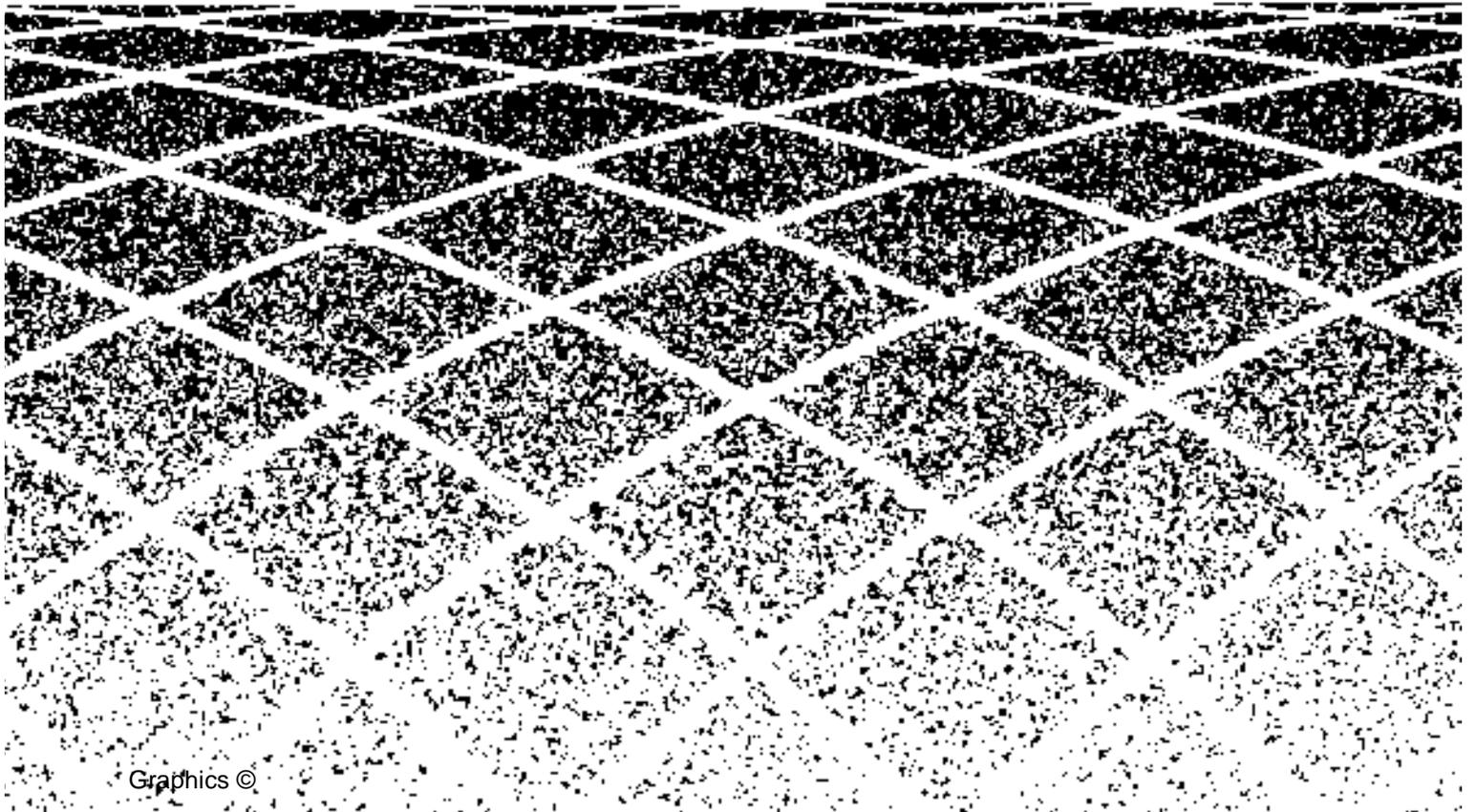




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**INTUITY™ Integration with
Northern Telecom® SL-1,
Meridian™,
and Meridian™ SL-1**



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About This Book

Purpose

INTUITY™ Integration with Northern Telecom® SL-1, Meridian™, and Meridian™ SL-1 contains installation and administration instructions for integrating a Northern Telecom SL-1, Meridian, or Meridian SL-1 switch with an INTUITY system. This book contains instructions or information on the following topics:

- Switch integration planning strategies
- Switch integration device (SID) hardware installation instructions
- Software installation instructions
- SL-1, Meridian, and Meridian SL-1 administration instructions
- SID troubleshooting guide

This book contains information only for a Northern Telecom switch integration with the INTUITY system. If you have another type of switch, refer to the switch integration book for that switch.

Intended Audiences

This book is designed primarily for the on-site AT&T-certified services technician, the customer's technical personnel, and the customer's Northern Telecom services technician. The customer or the customer's switch vendor should use the book when performing switch administration tasks and other customer-required tasks.

Secondary audiences include the AT&T personnel shown in the following list.

- Field support
- The Technical Services Center (TSC)
- Provisioning project managers
- The Sales and Technical Resource Center (STRC)
- Helpline personnel
- Factory assemble, load, and test (ALT) personnel

Prerequisite Skills or Knowledge

Typical readers should understand AT&T computer systems, switches, and hardware and software installation procedures. AT&T provides and recommends INTUITY system training for customers. Customers should be familiar with the Northern Telecom switch or contact their switch vendor for assistance.

How This Book Is Organized

This book is organized into the following chapters:

- Chapter 1, "Introduction and Requirements for Integration", explains the INTUITY system configuration and includes a component connectivity diagram that shows each component in the configuration. This chapter also contains a list of components.
- Chapter 2, "Switch Integration Device Basics", explains the basic components of the SID and how to use the system *screens*. This chapter contains SID hardware component descriptions and illustrations; menu, edit, and action screen explanations; and basic help function explanations.
- Chapter 3, "Switch Integration Planning", helps you plan, track, and record the switch integration. This chapter includes instructions for completing SID and switch integration worksheets that are used with the book as the integration is completed.

-
- Chapter 4, "Hardware Installation", describes the installation of the SID, cables to the switch, and cables to the INTUITY system. This chapter contains only information for installing the hardware components required for the integration.
 - Chapter 5, "Installing SID Software on the INTUITY System", contains instructions for installing the INTUITY system software required to integrate with the Northern Telecom switches.
 - Chapter 6, "Administering INTUITY System for Northern Telecom Integration", contains instructions for administering an INTUITY system to integrate with the switch. This chapter includes instructions for setting the message waiting lamp parameters, setting the switch interface parameters, and associating the application and the switch interface.
 - Chapter 7, "Northern Telecom SL-1 Switch Administration", contains information for administering a Northern Telecom SL-1 switch to work with an INTUITY system.
 - Chapter 8, "Northern Telecom Meridian and Meridian SL-1 Switch Administration", contains information administering a Northern Telecom Meridian or Meridian SL-1 switch to work with an INTUITY system.
 - Chapter 9, "Switch Integration Device Administration", contains information and instructions for administering the SID to work with the INTUITY system.
 - Appendix A, "Troubleshooting and Error Logs", provides troubleshooting information to help you isolate and correct problems that may occur with an INTUITY system integrated with a Northern Telecom switch.
 - Appendix B, "Using Views During Integration", provides real-time views of the integration process.
 - Appendix C, "Switch Administration for INTUITY Lodging", provides switch administration procedures if you have INTUITY Lodging.

The book also includes a list of common abbreviations, a glossary, and an index.

How To Use This Book

This book provides additional information needed when integrating a Northern Telecom switch with an INTUITY system. Use this book as additional information with the following books:

- *INTUITY MAP/5 Hardware Installation*, 585-310-146
- *INTUITY MAP/40 Hardware Installation*, 585-310-138
- *INTUITY MAP/100 Hardware Installation*, 585-310-139
- *INTUITY Software Installation*, 585-310-140

Do not perform any tasks in this book until you complete the required tasks in the installation books.

Conventions Used

The following conventions are used in this book:

- Rounded boxes represent keyboard keys that you press.

For example, an instruction to press the enter key is shown as follows:

Press ENTER.

- Square boxes represent phone pad keys that you press.

For example, an instruction to press zero on the phone pad is shown as follows:

Press 0.

- The word “enter” means to type a value and press ENTER.

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

Enter **y** to continue.

- Commands and text you type or enter appear in **bold**.

- Values, instructions, and prompts that you see on the screen are shown as follows:

Press any key to continue.

- Variables that the system supplies or that you must supply are shown in *italics*. For example, an error message including one of your filenames is shown as follows:

The file *filename* is formatted incorrectly

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

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

```
> Voice System Administration
```

```
> Voice Equipment
```

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

Trademarks and Service Marks

The following trademarked products may be mentioned in this book:

Product Name	Company
5ESS™	Registered trademark of AT&T
AT™	Trademark of Hayes Microcomputer Products, Inc.
AUDIX®	Registered trademark of AT&T
BT-542B™	Trademark of BusLogic Inc.
COMSPHERE®	Registered trademark of AT&T Paradyne Corp.
CONVERSANT® Voice Information System	Registered trademark of AT&T
DEFINITY®	Registered trademark of AT&T
Dterm™	Trademark of NEC Telephones, Inc.
Equinox™	Trademark of Equinox Systems, Inc.
INTUITY™	Trademark of AT&T
MD110®	Registered trademark of Ericsson, Inc.
MEGAPLEX™	Trademark of Equinox Systems, Inc.
MEGAPORT™	Trademark of Equinox Systems, Inc.
Meridian™	Trademark of Northern Telecom Limited
Microcom Networking Protocol®	Registered trademark of Microcom, Inc.
NEAX™	Trademark of NEC Telephone, Inc.
NEC®	Registered trademark of NEC Telephones, Inc.
Northern Telecom®	Registered trademark of Northern Telecom Limited
ORACLE™	Trademark of Oracle Corporation
Paradyne®	Registered trademark of AT&T
Phillips®	Registered trademark of Phillips Screw Company
SL-1™	Trademark of Northern Telecom Limited

Product Name	Company
TMI™	Trademark of Texas Micro Systems, Inc.
<i>Continued on next page</i>	
UNIX®	Registered trademark of UNIX Systems Laboratories, Inc.
VT100™	Trademark of Digital Equipment Corporation
VoiceBridge®	Registered trademark of Voice Technologies Group, Inc.

Related Resources

In addition to this book, you may need to reference the following books:

Title	Order Number
<i>INTUITY System Description</i>	585-310-211
<i>INTUITY AUDIX Feature Descriptions</i>	585-310-212
<i>INTUITY AUDIX Release 3.3 Administration and Feature Operations</i>	585-310-552
<i>INTUITY Documentation Guide</i>	585-310-540
<i>Migration to the INTUITY System</i>	585-310-602
<i>INTUITY New System Planning</i>	585-310-603
<i>INTUITY MAP/5 Hardware Installation</i>	585-310-146
<i>INTUITY MAP/5 Installation Checklist</i>	585-310-147
<i>INTUITY MAP/40 Hardware Installation</i>	585-310-138
<i>INTUITY MAP/40 Installation Checklist</i>	585-310-141
<i>INTUITY MAP/100 Hardware Installation</i>	585-310-139
<i>INTUITY MAP/100 Installation Checklist</i>	585-310-137
<i>INTUITY Software Installation</i>	585-310-140
<i>INTUITY Integration with System 75 and DEFINITY Communications System G1 and G3</i>	585-310-214
<i>INTUITY Integration with System 85 and DEFINITY Communications System G2</i>	585-310-215

Title	Order Number
<i>INTUITY Integration with 5ESS</i>	585-310-219
<i>INTUITY Integration with DMS-100</i>	585-310-220
<i>Integration with NEAX</i>	585-310-216
<i>Continued on next</i>	
<i>page</i>	
<i>INTUITY AUDIX Digital Networking Administration</i>	585-310-533
<i>AMIS Analog Networking</i>	585-300-512
<i>INTUITY Intro Voice Response</i>	585-310-716
<i>INTUITY Platform Administration and Maintenance</i>	585-310-534
<i>INTUITY AUDIX Announcement Customization- American English</i>	585-310-535
<i>INTUITY AUDIX Announcement Customization- British English</i>	585-310-536
<i>INTUITY AUDIX Announcement Customization- Latin Spanish</i>	585-310-537
<i>INTUITY AUDIX Announcement Customization- French Canadian</i>	585-310-538
<i>INTUITY AUDIX Administration</i>	585-310-539
<i>AUDIX Administration and Data Acquisition Package</i>	585-302-502
<i>A Portable Guide to Voice Messaging</i>	585-300-701
<i>Voice Messaging Quick Reference</i>	585-300-702
<i>Multiple Personal Greetings Quick Reference</i>	585-300-705
<i>Voice Messaging Wallet Card</i>	585-300-704
<i>Outcalling Quick Reference</i>	585-310-721
<i>Voice Messaging Business Card Stickers</i>	585-304-705
<i>Voice Messaging Subscriber Artwork Package</i>	585-310-724

How to Make Comments About This Book

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Please include the title and order number of this book.

Introduction and Requirements for Integration

1

Introduction

This chapter describes the requirements for a Northern Telecom SL-1, Meridian, and Meridian SL-1 switch integration with an INTUITY system. It includes diagrams and checklists that show the different configurations for the INTUITY system.

Overview

Switch integration refers to the sharing of information between a voice mail system and a switch in order to provide a seamless interface to callers and subscribers. A fully integrated voice mail system answers each incoming phone call with information taken directly from the switch. To create an integrated environment between an INTUITY system and a Northern Telecom switch, AT&T uses an electronic box called a Switch Integration Device (SID).

The SID operates as a digital telephone set emulator, transferring calls to the INTUITY system while sending integration information over an out-of-band serial data link. The SID converts Northern Telecom display set information into Simplified Message Desk Interface (SMDI) format and sends the SMDI information to the application. The SID does not restrict any switch features.

For the SID to perform integrated call transactions, the switch must include a properly configured Northern Telecom station set. The SID uses the Northern Telecom set to provide integration information to the INTUITY system. The set connects to the SID through a standard Northern Telecom telephone line cord. The SID connects to the INTUITY system through an RS-232 cable.

Because of limitations imposed by the Northern Telecom switches and the SID, an INTUITY system integration with a Northern Telecom switch cannot support 64 ports. Table 1-1 shows you the number of voice ports supported by each INTUITY platform.

Table 1-1. Voice Ports Supported by an INTUITY System Integrated with a Northern Telecom Switch

INTUITY Platform	Number of Ports per SID	Maximum Number of SID Boxes	Maximum Number of Voice Cards	Maximum Number of Voice Mail Ports
MAP/5	8 of 24 ports supported per SID	2	2	12
MAP/40	8 of 24 ports supported per SID	6	8	48
MAP/100	8 of 24 ports supported per SID	6	8	48

The SID emulates an SL-1 or Meridian digital telephone set to communicate with the switch. Because the switch recognizes the SID as a digital station set, the SID's pilot extension number acts as the INTUITY system voice mail extension. When calls appear at the SID, the SID searches (hunts) for an open port on the voice mail system. If a port is open, the SID uses the switch call party information to create a Centrex SMDI packet and sends the packet to the INTUITY system.

The SID acts as the call traffic manager and does not require a hunt group or call distribution group. All covered and forwarded calls are sent to the SID's extension number which is considered to be voice mail. If you have the message waiting feature, the light on your telephone set is illuminated through the Message Waiting (MIK) feature. If you have a digital display, the display shows a message waiting from *voice mail*. Subscribers use the SID extension to access INTUITY system voice mail and retrieve their messages.

Before you connect the Northern Telecom SL-1, Meridian, or Meridian SL-1 to the SID and the INTUITY system, you must confirm that you have all required integration components. Use the diagrams, checklists, and descriptions in this chapter to confirm that you have all required integration components.

Safety Considerations



WARNING:

Electrostatic discharge (ESD) damages electronic equipment. Do not touch any electronic component until you properly ground yourself.

To prevent damage to the equipment and yourself, follow these precautions:

- Familiarize yourself with the procedures necessary to prevent electrostatic damage to equipment.
- Shut off all power and remove all cables from equipment.
- Properly ground a work mat and wrist strap.
- Place the equipment on the work mat.
- Place the grounded wrist strap on your bare wrist. The wrist strap must contact your bare skin directly. *Do not* wear the wrist strap over your clothes.

Factory Assembled Systems

The factory performs assemble, load, and test (ALT) processes for most of the INTUITY hardware and software before shipping the system to the site. Use the information in this chapter to confirm that the system contains the hardware and software for your configuration.

After checking the installed hardware and software, perform all tasks not completed during ALT, such as connecting the voice and data lines, setting up and cabling the peripherals, and installing the switch communications software. Use one of the following checklists to make sure you complete all necessary tasks:

- *INTUITY MAP/5 Installation Checklist, 585-310-147*
- *INTUITY MAP/40 Installation Checklist, 585-310-137*
- *INTUITY MAP/100 Installation Checklist, 585-310-141*

Determining the Placement of the SID

The SID and the MAP/5, MAP/40, or MAP/100 represent *local* devices. Place the SID and the MAP in the same area and close enough together so the RS-232 cable supplied with the SID can connect to the platform. During installation, the AT&T technician will place the SID and the MAP in the location specified by the customer. The SID is installed exactly like an SL-1 or Meridian station set and requires the same components.

The link between the SL-1, Meridian, or Meridian SL-1 and the SID is a six-foot telephone line cord. The SID must be installed within the local loop length limit for an SL-1 or Meridian set. If the distance between the SID and the switch is greater than the reach of the line cord or the local loop length, the customer must consult with the Northern Telecom switch technician to determine the best method of connecting the switch to the SID. AT&T does not recommend any particular methods. AT&T assumes responsibility only for the RS-232 cable that connects the SID and the INTUITY system.

System Configuration

There are two configurations for the INTUITY system integration with a Northern Telecom switch:

- System with eight ports or less
- System over eight ports

This section contains component connectivity diagrams for each configuration.

System with Eight Ports or Less

Figure 1-1 shows the connections between an INTUITY system on a MAP/100 or MAP/40 and a Northern Telecom switch through the multi-port serial card. Figure 1-2 shows the connections between an INTUITY system on a MAP/5 platform and a Northern Telecom switch through COM1. Both diagrams are for INTUITY systems with eight ports or less that require one SID.

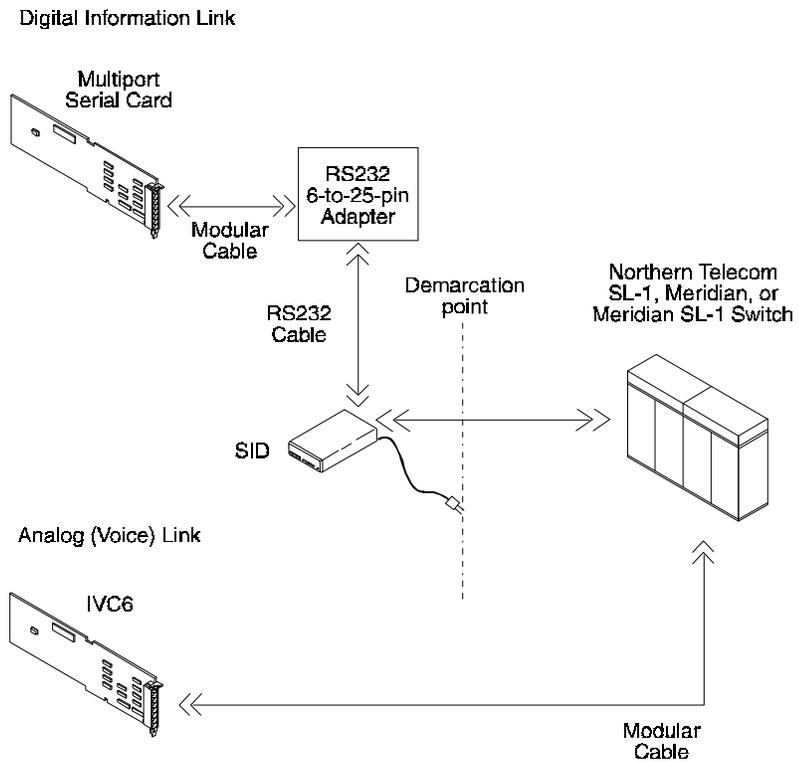


Figure 1-1. Connections through the Multiport Serial Card for an INTUITY Integration with a Northern Telecom Switch

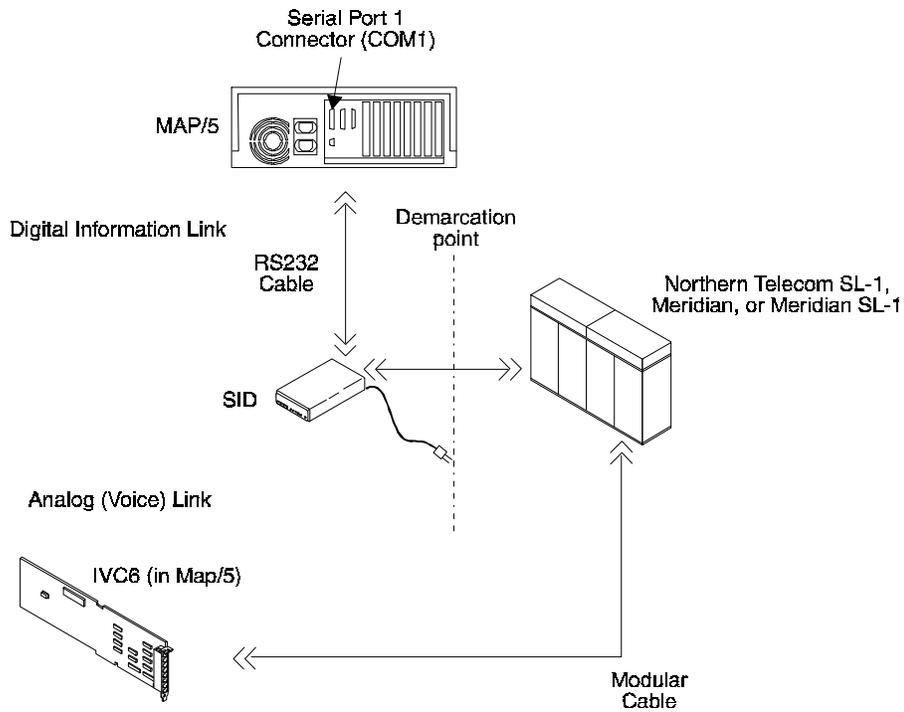


Figure 1-2 Connections through the COM 1 Serial Port for an INTUITY Integration with a Northern Telecom Switch (MAP/5 only)

System over Eight Ports

Figure 1-3 shows the connections between an INTUITY system and a Northern Telecom switch through the multi-port serial card when multiple SIDs are used. All platforms, MAP/100, MAP/40, and MAP5, must use the multi-port serial card when multiple SIDs are used.

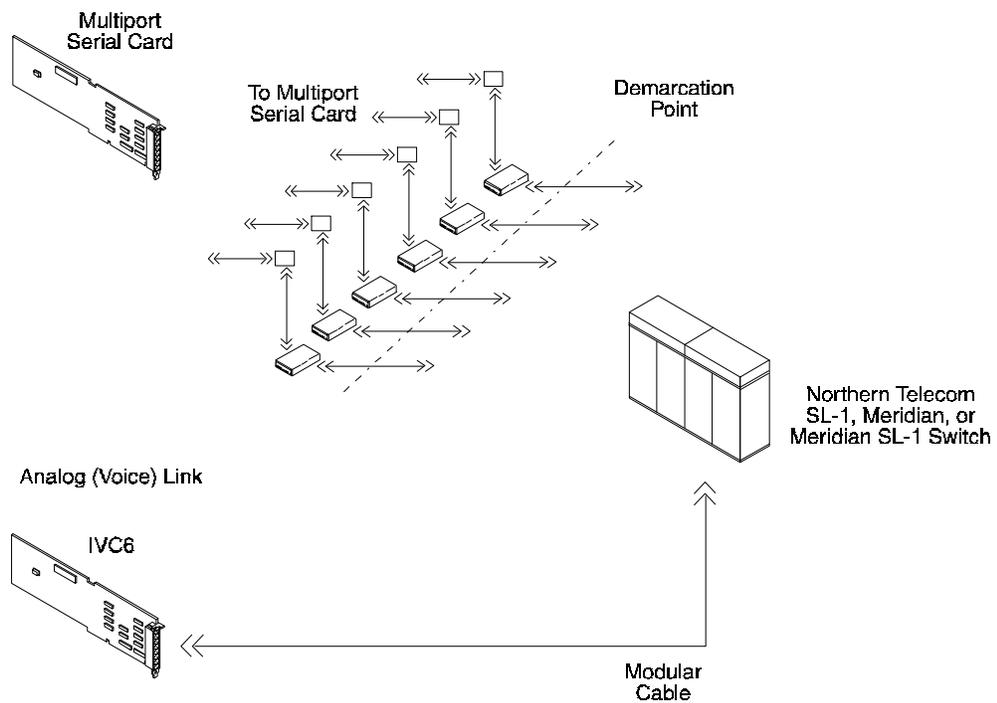


Figure 1-3. Connections through the Multiport Serial Card for an INTUITY Integration with a Northern Telecom Switch

INTUITY System Required Hardware

Table 1-2 lists the hardware components required on the INTUITY system for the Northern Telecom integration.

Table 1-2. INTUITY System Hardware Components Required for the Integration

Component	Description	AT&T Supplied	Customer Supplied
MAP/5, MAP/40, or MAP/100	Hardware platform that operates the INTUITY system software	X	
IVC6 cards	Integrated Voice Processing (IVC6) cards used for voice port connections. May have a maximum of 8 cards. Includes any of the following hardware:	X	
	885A adapters and cables	X	
	25-ft. modular cords with 6-pin to 25-pin adapters	X	
	Two high density cables, RJ21X, with a 356B adapter for T/R distribution	X	
Multiport serial port card	Equinox multiport card provides multiple serial ports for adjunct component connections. On the MAP/40 and MAP/100, the COM ports are occupied by other components and the Equinox card must be used for the SID connection. On the MAP/5, the COM1 port can be used for the SID connection.	X	
MAP5 only: RS-232 cable (DB-25)	For a COM1 connection on the MAP/5, an RS-232 cable, DB-25, is required to connect the SID to the INTUITY system. The cable includes a 25-pin to 9-pin adapter (DB-9).	X	
Equinox connection only: RS-232 cable with 6-pin to 25-pin adapter	For a connection to the Equinox multiport serial card, an RS-232 cable with a 6-pin to 25-pin adapter is required.	X	

SID Required Hardware

Table 1-3 lists the SID components required for the integration.

Table 1-3. SID Hardware Components Required for the Integration

Component	Description	AT&T Supplied	Customer Supplied
SID	AT&T Switch Integration Device	X	
RS-232 cables	Used to connect the SID to the MAP/100, MAP/40, or MAP/5	X	
SL-1 telephone line cord or Meridian modular cable	Used to connect the SID to the switch ⇒ NOTE: AT&T only assumes responsibility for connecting the cord to the SID. All remaining connections must be performed by the customer or the customer's switch technician.		X

Northern Telecom Switch Components

The customer must provide the correct switch and related components as described in Table 1-4, Table 1-5, and Table 1-6. All required items should be available and configured before an AT&T technician arrives to install the INTUITY system. The INTUITY system integrates only with the Northern Telecom switch generics and related components described in the tables.

Table 1-4. Northern Telecom SL-1 Required Components

Component	Description	AT&T Supplied	Customer Supplied
Northern Telecom SL-1 switch	Generic X05 or later with the following options: — Option package 19, Digit Display Software — Option package 46, Message Waiting Center		X
Digital (SL-1) line port	QPC61 or QPC451		X
Analog line port	QPC60, QPC452, or QPC594		X

Table 1-5. Northern Telecom Meridian Required Components

Component	Description	AT&T Supplied	Customer Supplied
Northern Telecom Meridian switch	Generic 11 Release 15 or greater (Options 11, 21, 21a, 51, 61, or 71) with the following options: — Option package 19, Digit Display Software — Option package 46, Message Waiting Center		X
Digital ports	QPC578 or NT8D02 configured for a Meridian 2616 station set		X
Analog line ports	QPC594 or NT8D03 configured as a 2500 set (one required for each integrated voice port)		X

Table 1-6. Northern Telecom Meridian SL-1 Required Components

Component	Description	AT&T Supplied	Customer Supplied
Northern Telecom Meridian SL-1 switch	Generic 11 Release 15 or greater (Options 11, 21, 21a, 51, 61, or 71) with the following options: <ul style="list-style-type: none"> — Option package 19, Digit Display Software — Option package 46, Message Waiting Center 		X
Digital ports	QPC578 or NT8D02 configured for a Meridian 2616 station set		X
Analog line ports	QPC594 or NT8D03 configured as a 2500 set (one required for each integrated voice port)		X

Summary

You have read the information concerning the requirements for a Northern Telecom SL-1, Meridian, and Meridian SL-1 switch integration with an INTUITY system. Proceed to Chapter 2, "Switch Integration Device Basics", to understand the hardware components of the SID and how to use the device.

Introduction

Before you attempt to operate and administer the Switch Integration Device (SID) and integrate a Northern Telecom switch with an INTUITY system, you need to understand the hardware components of the SID and how to use the device. This chapter explains the basic components of the SID and how to use the system screens.

The chapter covers the following topics:

- SID hardware component descriptions
- SID hardware component illustrations
- Menu screens
- Edit screens
- Action screens
- Help functions

Read the information in this chapter to understand the SID hardware and software.

SID Hardware

Before you use the SID, you need to understand each hardware component. Read the following descriptions of each component and refer to Figure 2-1 to locate the component.

Front Panel

LCD display	A two-line, 40-character, backlighted LCD display screen used to show all menus and information on the SID
Diagnostic lights	LED lights used to indicate and trace possible problems in the SID. The LEDs help to determine if problems exist in the SID, the link to the PBX, the link to the INTUITY system, or any combination of the different links or systems. The Status LED lights when you power on the SID.
Keypad	A 19-key, membrane-style keypad used to select menu items, enter information, and perform all administration on the SID. The keys include ten numbered keys (0-9), four directional arrow keys, a pound sign (#) key, a star key (*), a Function key, a Mode key, and an Enter key. Appendix A, "Troubleshooting and Error Logs", contains tables that show the function of each key, if different than marked.

Rear Panel

Power switch	The toggle switch used to turn the SID on and off
Power cord outlet	The male outlet where you plug in the power cord shipped with the SID
Link A and Link B	Two RS-232 ports used to connect the SID to the PBX and the INTUITY system. Chapter 4, "Hardware Installation", explains the proper connections for the two ports.
Modem port	The SID contains an internal modem used for diagnostic and software upgrade purposes. Use the modem port to connect the SID's modem to an analog line.

Continue to the next section, "SID Software," for an explanation of how to use the SID displays and menus.

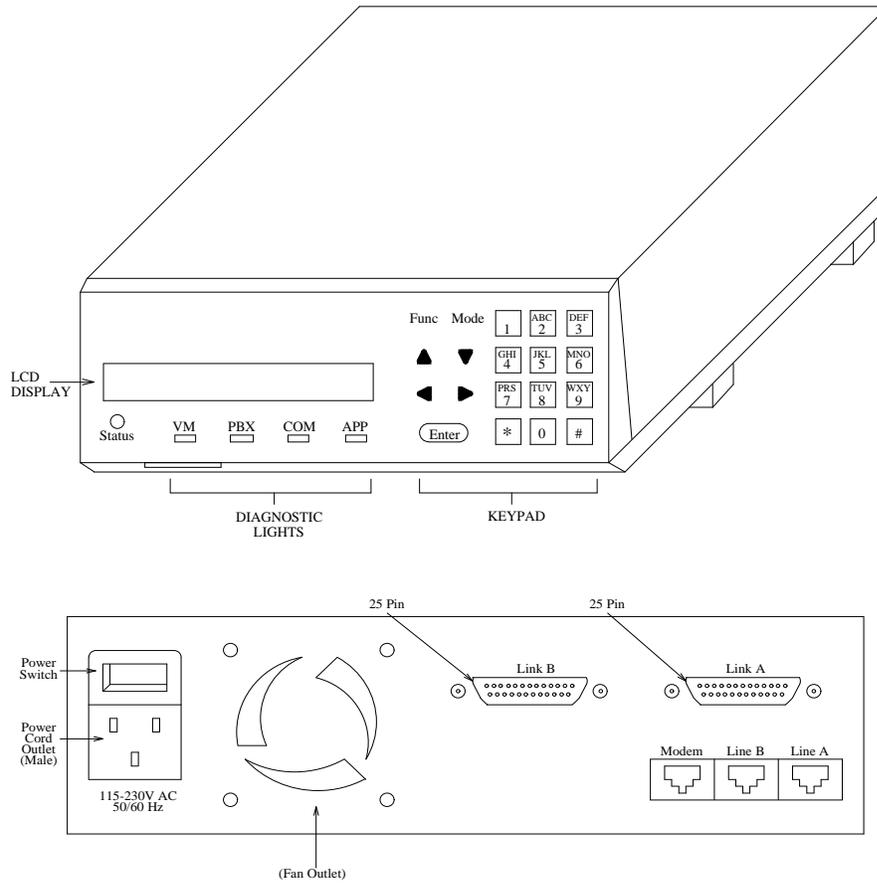


Figure 2-1. Top: SID Front Panel Bottom: SID Back Panel

SID Software

The SID contains software that allows you to perform installation, configuration, and diagnostic tasks by using the keypad and the LCD screen. As you administer the SID, you use three types of screen displays. Each type of screen has a specific task.

- Menu screens — Used to select one of several options
- Edit screens — Used to enter information into the SID's configuration
- Action screens — Used to perform an action, view event logs, or monitor the system

This section contains descriptions and examples of each screen and provides instructions for using the screens. It also shows valid key actions for each screen.

Menu Screens

Menu screens allow you to select options by pressing a key. You can select another menu, an edit screen, or an action screen. The menu screens allow you to move between screens by pressing only a few keys.

Figure 2-2 shows a sample menu screen.

M-1	1-View	2-Utills	3-System
	4-Setup	5-Logs	

Figure 2-2. Sample Menu Screen

A menu screen contains two items:

Name	The menu name appears in the upper left hand corner of the LCD display. Use the name as a reference item.
List of options	The list of options available for this menu. Each option has a number and a label. Not all menus contain the same number of options.

To select an option from a menu, press the option number on the keypad. The SID clears the current screen from the LCD display and places the screen selected on the display. The label selected appears as the name of the screen.

Example: If you want option 4, Setup, from the Main Menu shown in Figure 2-2, press **4** on the keypad. After you press **4**, the Setup screen appears as shown in Figure 2-3.

SETUP	1-Params	2-Ports	3-Clear
	4-Advanced		

Figure 2-3. The Setup Screen

Using Keys on Menu Screens

The SID uses menus to organize all options and functions into categories. Menus also allow you to navigate easily through the screens by pressing one or more keys.

Each type of screen uses different keys on the keypad to make selections and enter information. Table 2-1 shows how each key functions on a menu screen.

Table 2-1. Menu Form Keys

Key	Action
1,2,3,4,5,6,7,8,9,0	Select menu option
*,#	No action
Func	Return to main menu
Mode	No action
Arrows	No action
Enter	No action

Edit Screens

Edit screens allow you to use the keypad to enter information into the SID's configuration. There are three types of edit screens:

- Single-Item
- Double-Item
- Scroll-Item

This section contains descriptions and examples of each type of edit screen and provides instructions for using the screens.

Single-Item Edit Screens

On a single-item edit screen, you must enter one piece of information or answer one question. Figure 2-4 shows an example of a single-item edit screen, the Setup screen. Enter the number of ports assigned to the INTUITY system on this screen. In this example, enter the appropriate value using the digits on the keypad and press (ENTER).

SETUP	Number of Ports	-----
-------	-----------------	-------

Figure 2-4. Sample Single-Item Edit Screen

Double-Item Edit Screens

Double-item edit screens ask two related questions. After you answer the first question and press (ENTER), the cursor moves to the second line. You must now enter information for the second question. When you press (ENTER) the second time, the cursor *wraps* or moves back to the first line. If you have entered all information correctly, press (▲) or (▼) to move to the next edit screen. You can press (FUNC) to return to Main Menu. If you did not enter the information correctly, you can change the information until everything is correct.

Figure 2-5 shows an example of a double-item edit screen, the VM Port screen.

VM Port	LTN:	-----
	Extension:	-----

Figure 2-5. Sample Double-Item Edit Screen

Scroll-Item Edit Screens

Scroll-item edit screens ask questions that have a limited number of answers. The SID places a default value in the field, but allows you to *scroll* or search through the options. Use the left and right arrow keys on the keypad to scroll through the options. Figure 2-6 shows a sample scroll-item edit screen, the MCI screen.

MCI	Baud Rate:	1200
<-	->1	

Figure 2-6. Sample Scroll-Item Edit Screen

You can recognize scroll-item edit screens by the small arrow symbols (<- ->) shown below the screen name. In the example, use the MCI screen to set the baud rate for the MCI link to specific values between 300 and 9600 baud. Figure 2-6 shows the default value of 1200. To see the other options, press the left arrow key to decrease the baud rate or press the right arrow key to increase the rate. Select the rate then press **ENTER** to confirm the value and remain in the screen or press **FUNC** to confirm the value and exit the screen.

⇒ NOTE:

In this integration use the default value of 1200.

Using Keys on Edit Screens

Edit screens require you to enter data for SID setup and configuration. Most edit screens have default values already entered on them. Press **FUNC** to select the default and exit the screen. As you edit screens, you can move to the next or previous edit screen, return to the main menu, or access a help screen. Refer to Table 2-2 for a list of keys and the action each key performs.

Table 2-2. Edit Screen Keys

Key	Action
1,2,3,4,5,6,7,8,9,0	Data entry keys
*,#	Data entry keys
Func	Return to main menu
Mode	Help
Up Arrow	Go to previous edit screen
Down Arrow	Go to next edit screen
Right Arrow	Get higher value
Left Arrow	Get lower value
Enter	Confirm entry

Some menu selections allow access to multiple edit screens that link together. When accessing multiple edit screens, press **▼** to confirm the value entered and move to the next screen or press **▲** to confirm the value and move to the previous screen.

Edit Screen Help Functions

Edit screens allow you to actively access help screens. To access the help screen, press **(MODE)** at any edit screen. The SID places the help screen on the LCD display. The SID retains any information entered on the edit screen and places the edit screen with your information back on the display when you exit the help screen. No information is lost. Most help screens appear as shown in Figure 2-7, although certain edit screens add or delete options.

EDIT	1-Overtyp	2-Insert	3-Clear
	4-Undo		

Figure 2-7. Help Screen Options Accessed From an Edit Screen

The following list shows each available option and explains the action of each option shown on the help screen.

Overtyp	This option places the editor into a mode to enter new characters over existing characters.
Insert	This option places the editor into a mode to insert new characters between existing characters.
Clear	This option erases all characters in the field.
Undo	This option replaces any new information typed in the field with information from the stored configuration.

Action Screens

Action Screens provide a *window* or a view into the integration application. Use action screens to monitor the application activity, review event logs, or check statistical information. Figure 2-8 shows a sample action screen, the Statistics View screen.

STATISTICS VIEW			
Calls:	12481	MWIs:	10412

Figure 2-8. Sample Action Screen

Action screens operate in a dynamic or real-time mode. The screen changes with each transaction processed by the SID. When you finish observing an action screen, press **(FUNC)** to return to the main menu. You also can press **(MODE)** to access any available help options for the action screen. Not all action screens have help options. However, by pressing **(MODE)** you usually can find optional ways to look at the information presented on the action screen.

Using Keys on Action Screens

All action screens use the same keys on the keypad to perform functions and make selections. Table 2-3 shows you what keys to use with the action screens.

Table 2-3. Action Screen Keys

Key	Action
1,2,3,4,5,6,7,8,9,0	No action
*,#	No action
Func	Return to main menu
Mode	Help for Action screen
Arrows	No action
Enter	No action

Summary

You have read the basic information necessary to integrate an INTUITY system with a Northern Telecom switch. Proceed to Chapter 3, "Switch Integration Planning", to plan the switch integration and prepare for the installation and administration procedures.

Switch Integration Planning

3

Introduction

Before you integrate a Northern Telecom switch with an INTUITY system, you must plan the process. This chapter provides worksheets and information for use in planning and recording the integration. Use the worksheets to complete the switch integration process.

The worksheets help you collect the following information:

- Number of voice mail ports
- Message desk number
- Extension length
- Calling party identification pad (CPID) string
- Message waiting indicator (MWI) pad string
- Message waiting indicator features
- Simplified message desk interface (SMDI) baud rate
- MWI interleave factor
- Call sequence
- Extensions/logical terminal number plan
- SID primary directory number (DN) and range DNs

Continue with the instructions on the next page to plan the switch integration.

Worksheet A: Switch Integration Information

Use "Worksheet A: Switch Integration Information" to record information needed for the integration. Use the following procedures to fill out each line of the worksheet.

Worksheet A: Switch Integration Information

Line #	Field or Feature Name	Value	Default
1.	Number of voice mail ports:		N/A
	Number of SIDs Required: <input type="checkbox"/> 1-8 ports, 1 SID <input type="checkbox"/> 9-16 ports, 2 SIDs <input type="checkbox"/> 17-24 ports, 3 SIDs <input type="checkbox"/> 25-32 ports, 4 SIDs <input type="checkbox"/> 33-40 ports, 5 SIDs <input type="checkbox"/> 41-48 ports, 6 SIDs		
2.	SMDI Number:	001	001
3.	CPID and MWI Extension Lengths		3
4.	CPID Pad String Number:		0000xxx
5.	MWI Pad String Number:		0000xxx
6.	MWI Feature: (ENABLE = on, DISABLE = off)		ENABLE
7.	SMDI Baud Rate:	1200	1200
8.	MWI Interleave:	5	5
9.	Call Sequence:	Call/Data	Data/Call

Determining the Number of Voice Ports and SIDs

You must specify the number of voice mail ports for the Switch Integration Device (SID) to support and monitor. Refer to *INTUITY New System Planning*, 585-310-603, to find the number of ports planned for the INTUITY system.

Because of limitations imposed by the Northern Telecom switches and the SID, an INTUITY system integration with a Northern Telecom switch cannot support 64 ports. Table 3-1 shows you the number of voice ports supported by each INTUITY platform.

Table 3-1. Voice Ports Supported by an INTUITY System Integrated with a Northern Telecom Switch

INTUITY Platform	Number of Ports per SID ¹	Maximum Number of SID Boxes	Maximum Number of Voice Cards	Maximum Number of Voice Mail Ports
MAP/5	8 of 24 ports supported per SID	2	2	12
MAP/40	8 of 24 ports supported per SID	6	8	48
MAP/100	8 of 24 ports supported per SID	6	8	48

¹8 of 22 ports per SID are supported by an INTUITY system integrated with a Northern Telecom switch.

After you determine the number of voice mail ports to assign on the SID, write the number on line 1 of Worksheet A. If you have more than eight ports on the INTUITY system, you must use multiple SIDs. If you are using multiple SIDs, check the appropriate box under *Number of SIDs Required* on Worksheet A.

Setting the Message Desk Number

The Simplified Message Desk Interface (SMDI) message desk number must match the number assigned on the voice mail system. Use the default message desk number of 001; line 2 of "Worksheet A: Switch Integration Information" already contains the default value.

Setting the Extension Length Number

The Calling Party Identification Pad (CPID) and Message Waiting Indicator (MWI) extension length fields must match the extension length assigned on the switch. The SID defaults to an extension length of 3. The extension length is used with the CPID and MWI pad strings. If your switch has a different extension length number, enter that number on line 3 of "Worksheet A: Switch Integration Information".

Setting the CPID Pad String

The SID retrieves calling and called party information identical to the display information provided at the Northern Telecom set. The SID operates on SMDI protocol which uses a seven-digit field. To compensate for the difference between the protocols, the SID uses a seven-digit string, called the CPID string, that the SID overwrites with caller identification information. For example, if the CPID pad string is 0000xxx and the SID receives a caller ID of 245, the SMDI caller ID information becomes 0000245.

The SID assigns the field a default value of 0000xxx which matches the default extension length. When you change the extension length, the SID automatically updates the CPID pad string number. If you change the default extension length number, write the correct CPID pad string on line 4 of "Worksheet A: Switch Integration Information".

Setting the MWI Pad String

The MWI operates on the same basis as the CPID. As with the CPID, the SID uses a seven-digit string, called the MWI pad string, that informs the SID about the format of MWI information generated by the INTUITY system. The SID uses the MWI pad string to strip off digits not required by the Northern Telecom switch. The SID assigns a default MWI pad string of 0000xxx. If you change the default extension length number, write the correct MWI pad string on line 5 of Worksheet A.

Setting the MWI Feature

By using the MWI feature, the INTUITY system activates message waiting lamps. The SID sets the default value for this field to ENABLE, which activates the MWI feature. If you do not want the INTUITY system to activate the MWIs, change the field to DISABLE. Write the value on line 6 of Worksheet A.

Setting the SMDI Baud Rate

Use the default baud rate of 1200; line 7 of Worksheet A already contains the default value.

Setting the MWI Interleave Factor

The SID normally processes incoming calls before processing an MWI. When the system is busy, MWI packets back up on the system. Use the MWI interleave factor to force the SID to process MWI packets on busy systems. The interleave factor instructs the SID to process a single MWI after n calls. Use the default interleave factor of 5; line 8 on Worksheet A already contains the default value.

Setting the Call Sequence

Use this field to indicate the order in which the call and SMDI information are sent to the INTUITY system. The default setting is Data/Call. For the Northern Telecom integration, change the default setting to Call/Data. Line 9 on "Worksheet A: Switch Integration Information" already contains this setting.

Worksheet B: Extension/LTN Plan

Use Worksheet B to record extensions and logical terminal number (LTN) information needed for the integration. Use the procedures following Worksheet B to fill out the appropriate lines of the worksheet.

Worksheet B: Extension/LTN Plan

SID Number One

Extension	LTN	Extension	LTN
	0001		0005
	0002		0006
	0003		0007
	0004		0008

SID Number Two

Extension	LTN	Extension	LTN
	0009		0013
	0010		0014
	0011		0015
	0012		0016

SID Number Three

Extension	LTN	Extension	LTN
	0017		0021
	0018		0022
	0019		0023
	0020		0024

SID Number Four

Extension	LTN	Extension	LTN
	0025		0029
	0026		0030
	0027		0031
	0028		0032

SID Number Five

Extension	LTN	Extension	LTN
	0033		0037
	0034		0038
	0035		0039
	0036		0040

SID Number Six

Extension	LTN	Extension	LTN
	0041		0045
	0042		0046
	0043		0047
	0044		0048

Setting the Extension/LTNs

On the INTUITY system, you assign a channel to each extension to allow for switch communications. For the SID application, associate a logical terminal number (LTN) with each analog extension number used by the INTUITY system.

For example, if you assign channel 0 to extension 2222 on the INTUITY system, assign LTN 1 (0001) to the extension on the SID. Assigning the LTN to an extension tells the SID where to send information for the extension. If you do not assign the LTNs, the SID does not integrate calls properly.

⇒ NOTE:

The INTUITY system uses 0 as the first channel number assigned to an extension. The SID assigns 1 as the first LTN assigned to an extension. As you assign channels and LTNs, the number is always one greater than the INTUITY system number.

To assign LTNs and extensions on the SID, the switch administrator should list the extensions of all the analog ports on the INTUITY system. Use "Worksheet B: Extension/LTN Plan" on the next page to record the LTNs and extensions.

If you require more than eight ports on the INTUITY system, you must use multiple SIDs. When assigning extensions and LTNs on multiple SIDs, assign the extensions and LTNs in sequential order. For example, if you have a 16 port INTUITY system, you need two SIDs. SID Number 1 would have LTNs 0001 through 0008. SID Number 2 would have LTNs 0009 through 0016. "Worksheet B: Extension/LTN Plan" contains space for six SIDs, the maximum supported by an INTUITY system integrated with a Northern Telecom switch. The LTNs have already been entered in sequential order. Enter the extensions for each of the voice ports needed for the integration.

Worksheet C: Primary DN and Range DNs for the SID

Use "Worksheet C: Primary DN, Secondary DN and Range DNs for the SID" to record information needed for the integration. Use the procedures following Worksheet C to fill out the appropriate lines of the worksheet.

Worksheet C: Primary DN, Secondary DN and Range DNs for the SID

SID Number One

Line #	DN Type	Extension
1.	Primary:	
2.	Range:	
3.	Range:	
4.	Range:	
5.	Range:	
6.	Range:	
7.	Range:	
8.	Range:	
9.	Secondary	
10.	Range	
11.	Range	
12.	Range	
13.	Range	

SID Number Two

Line #	DN Type	Extension
1.	Primary:	
2.	Range:	
3.	Range:	
4.	Range:	
5.	Range:	
6.	Range:	
7.	Range:	
8.	Range:	
9.	Secondary	
10.	Range	
11.	Range	
12.	Range	
13.	Range	

SID Number Three

Line #	DN Type	Extension
1.	Primary:	
2.	Range:	
3.	Range:	
4.	Range:	
5.	Range:	
6.	Range:	
7.	Range:	
8.	Range:	
9.	Secondary	
10.	Range	
11.	Range	
12.	Range	
13.	Range	

SID Number Four

Line #	DN Type	Extension
1.	Primary:	
2.	Range:	
3.	Range:	
4.	Range:	
5.	Range:	
6.	Range:	
7.	Range:	
8.	Range:	
9.	Secondary	
10.	Range	
11.	Range	
12.	Range	
13.	Range	

SID Number Five

Line #	DN Type	Extension
1.	Primary:	
2.	Range:	
3.	Range:	
4.	Range:	
5.	Range:	
6.	Range:	
7.	Range:	
8.	Range:	
9.	Secondary	
10.	Range	
11.	Range	
12.	Range	
13.	Range	

SID Number Six

Line #	DN Type	Extension
1.	Primary:	
2.	Range:	
3.	Range:	
4.	Range:	
5.	Range:	
6.	Range:	
7.	Range:	
8.	Range:	
9.	Secondary	
10.	Range	
11.	Range	
12.	Range	
13.	Range	

Setting the Primary DN and Range DNs

The primary DN is the extension number assigned to the SID. INTUITY system subscribers dial the primary DN of the SID to access their voice mail. If the primary DN is busy, the SID *hunts* or searches through a range of eight keys or DNs used to complete the call. Primary DNs serve three purposes.

- The primary DN is the extension number that the switch associates with the telephone set.
- The primary DN serves as the key appearance, the forward target for all ring/no answer calls.
- With the correct options set on the switch, the primary DN is the extension associated with the hunt feature and the other DNs.

For the integration to work, determine the primary DN for the SID and the DNs for the range keys, the target for all busy-forwarded calls. When selecting a primary DN, use an extension number not currently assigned on the Northern Telecom switch. Use a number that is easy to remember. Select a range of eight extensions if you have a Meridian switch or a range of seven extensions if you have an SL-1 switch. Try to select sequential numbers.

For example, if you determine that you want to use 400 as the primary DN, then assign 401, 402, 403, 404, 405, 406, and 407 as the extensions for the range of DNs if you have a Meridian switch.

After you determine the primary DN, write the extension number on line 1 of "Worksheet C: Primary DN, Secondary DN and Range DNs for the SID". Write the extension numbers for the range DNs on lines 2 through 8 of Worksheet C.

You also have the option of creating a secondary call queue for calls that cover under Busy conditions. Select a secondary DN to act as the forwarding target for busy calls. Also select a range of four sequential extensions.

For example, if you have assigned the primary DN and range keys as described previously, then assign 408 as the secondary DN and 409, 410, 411, and 412 as the extensions for the range of DNs.

After you determine the secondary DN, write the extension numbers on lines 9 through 13 of Worksheet C.

If you use multiple SIDs for the integration, you must determine a primary DN and range DN for each SID. These extensions will be assigned to a switch group or hunt group in Chapter 7, "Northern Telecom SL-1 Switch Administration" or in Chapter 8, "Northern Telecom Meridian and Meridian SL-1 Switch Administration". "Worksheet C: Primary DN, Secondary DN and Range DNs for the SID" contains space for six SIDs, the maximum supported by an INTUITY system integrated with a Northern Telecom switch. Enter the primary DN and range DN extensions for each of the SIDs needed for the integration.

Summary

You have planned the switch integration process. Proceed to Chapter 4, "Hardware Installation", to install hardware components and make cable connections.

Introduction

This chapter describes the hardware and cable installation procedures required to integrate a Northern Telecom SL-1, Meridian, or Meridian SL-1 switch with an INTUITY system through a Switch Integration Device (SID). Before you proceed with the instructions in this chapter, verify that the hardware has been installed and that all required steps have been completed on one of the following checklists:

- *INTUITY MAP/5 Installation Checklist, 585-310-147*
- *INTUITY MAP/40 Installation Checklist, 585-310-141*
- *INTUITY MAP/100 Installation Checklist, 585-310-137*

This chapter covers the installation of all integration-related hardware components. The procedures must be performed by the AT&T installation technician, the customer, or the customer's switch technician. Each procedure indicates who should perform the procedure.

The hardware installation procedures covered in this chapter include:

- Connect an analog line to the modem
- Connect the SL-1 or Meridian modular cable to the switch
- Connect the SID to the INTUITY system
- Connect the SID power cord

Continue with the next procedure to install the hardware.

Connect an Analog Line to the Modem

This procedure should be performed by the AT&T installation technician and the customer or the customer's switch technician.

The SID contains an internal modem that allows for remote site access and maintenance. You must connect an analog line from the switch to the remote modem to allow for maintenance. Connect the analog line to the switch before the AT&T installation technician arrives.

Use the following procedure to connect the analog line to the modem.

1. Connect the analog line to the MODEM port on the SID, as shown in Figure 4-1.
2. If you are installing multiple SIDs, repeat step 1 for each SID.

Proceed to the next procedure.

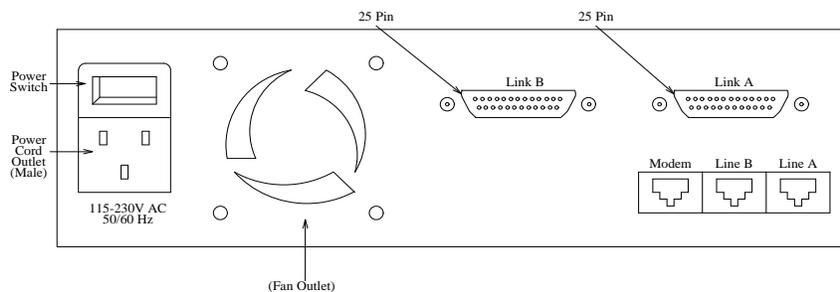


Figure 4-1. Back View of the SID

Connect the SID to the SL-1, Meridian, or Meridian SL-1 Switch

The customer or the customer's switch technician must complete this procedure.

⇒ NOTE:

AT&T does not assume responsibility for any connections to the SL-1, Meridian, or Meridian SL-1 switch.

The SID connects to the switch in exactly the same way as an SL-1 or Meridian set connects to the switch. The Northern Telecom switch communicates with the SID through a standard SL-1 or Meridian six-foot modular cable. If you need a cable longer than the one shipped with the SID, you must supply the cable.

Use the following instructions to connect the SID to the switch.

1. Connect one end of the six-foot modular cable to the RJ-45 outlet labeled Line A on the back of the SID. Use Figure 4-1 to locate Line A.
2. Connect the free end of the cord into the wall outlet that connects to the switch.
3. If you are installing multiple SIDs, repeat the procedure for each SID.

Proceed to the next procedure.

Connect the SID to the INTUITY System

This procedure connects the six-foot RS-232 cable to the SID and to the INTUITY system and should be completed by the AT&T installation technician. The cable connects directly to the SID and connects to the INTUITY system through a 6-to-25-pin adapter and a modular cable. Use the following instructions to connect the SID to the INTUITY system.

1. Connect the 25-pin RS-232 connector to Link A on the back of the SID. Figure 4-1 shows the location of Link A.
2. Connect the 25-pin end of the 6-to-25-pin adapter to the free end of the RS-232 cable.

⇒ NOTE:

If you are connecting the SID to a MAP/5 through the COM1 port, you do not need the adapter. Connect the free end of the RS-232 cable to the COM1 port.

3. Plug the modular cable into the 6-to-25-pin adaptor.
4. Plug the free end of the modular cable into the multiport serial card in the MAP/5, MAP/40, or MAP/100 platform.
5. If you are installing multiple SIDs, repeat the procedure for each SID.

Proceed to the next procedure.

Connect the SID Power Cord

The AT&T installation technician or the customer must complete this procedure.

1. Plug the female end of the power cord into the AC power-in socket on the SID, shown in Figure 4-1.
2. Plug the male end of the power cord into the AC outlet provided by the customer.
3. Locate the power switch on the back of the SID, shown in Figure 4-1.
4. Toggle the power switch to the *ON* position.

When you turn on the power switch, the Status LED on the front of the SID illuminates.

5. If you are installing multiple SIDs, repeat the procedure for each SID.

Summary

You have completed the hardware installation steps required for the Northern Telecom integration. Proceed to Chapter 5, "Installing SID Software on the INTUITY System".

Installing SID Software on the INTUITY System

5

Introduction

This chapter provides procedures for installing the switch integration device (SID) software on the INTUITY system.

⇒ NOTE:

Before you install the SID software, make sure that the voice system and maintenance software are installed. Also, ensure that no other switch software is already installed. Refer to the *INTUITY Software Installation*, 585-310-140, book to verify installed software.

To install the SID software, perform the following procedures:

1. Stop the voice system.
2. Load the SID software.
3. Start the voice system.
4. Turn on the transfer feature.

Each of these procedures is described in the following sections.

Requirements

Before you install the SID software, note the following requirements:

Login: craft
Materials: SID Switch Integration
 Software (2 floppy disks)

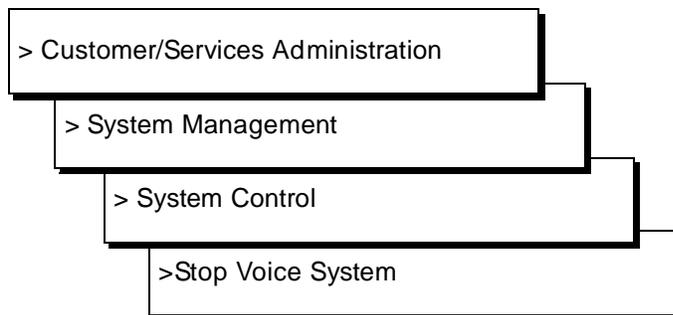
Stop the Voice System

Before you can load the SID software, you must stop the voice system.

⚠ CAUTION:
All calls in progress will be disconnected.

Use the following procedure to stop the voice system.

1. Login as **craft**.
2. Press **(ENTER)** to accept the AT386 default.
The INTUITY Administration menu appears.
3. Select the following series of menu options:



After you select the last option, Stop Voice System, the following message is displayed:

```
Enter y to continue, n to quit.
```

4. Enter **y** to begin the process.

Before stopping the voice system, the system pauses until all calls in progress disconnect. During the pause, you see a series of messages.

When all calls have disconnected, you receive the following message:

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

5. Press **(ENTER)**.

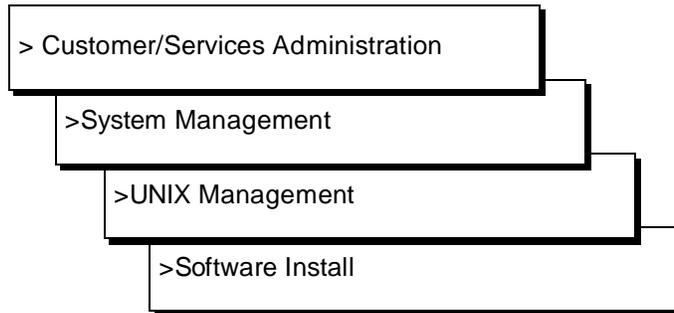
The system returns you to the System Control menu.

6. Press **(CANCEL)** (F6) until you see the INTUITY Administration menu.

You are now ready to load the SID software, as described in the next procedure.

Load the SID Software

1. Starting at the INTUITY Administration menu, select the following series of menu options:



The Software Install menu appears as shown in Figure 5-1.

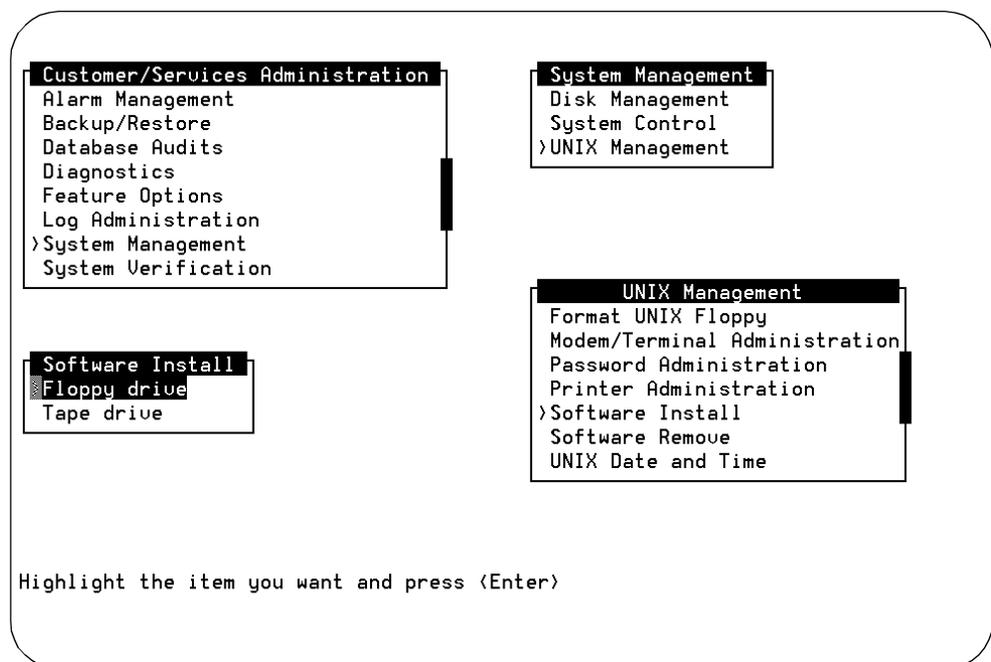


Figure 5-1. Software Install Menu

2. Select **Floppy drive** from the Software Install menu.

The system responds:

Insert diskette into Floppy Drive 1.
Type [go] when ready
or [q] to quit: (default: go)

3. Insert SID Switch Integration Package Disk 1 of 2 into the 3.5" floppy drive.
4. Press **ENTER** to install the software.

The system responds:

Installation in progress. Do not remove the diskette.

The following packages are available:

```
1    sid    INTUITY SID Switch Integration Package
          (486) 3.0-41
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?, ??, q]

5. Press **ENTER** to accept the default value, *all*.

You will see a series of messages indicating that the software is being installed including a copyright statement. The system pauses at the following prompt:

Select type of switch:

- 1) NEAX
- 2) ROLM
- 3) MITEL
- 4) NORTHERN
- 5) QUIT

Enter Selection:

6. Enter **4** to select Northern Telecom. The system responds with the following confirmation message:

Confirm: You selected option 4. (y/n)

7. Enter **y** to select yes. The installation continues. The system pauses when you see the following prompt:

Insert diskette 2 of 2 into Floppy Drive 1.
Type [go] when ready
or [q] to quit: (default: go)

8. Remove Disk 1 of 2 from the floppy drive.
9. Insert Disk 2 of 2 into the floppy drive.
10. Press **ENTER** to continue the installation.

Following several screen messages, the Switch Link Administration screen appears as shown in Figure 5-2. The screen contains the system defaults that are automatically set when you load the software.

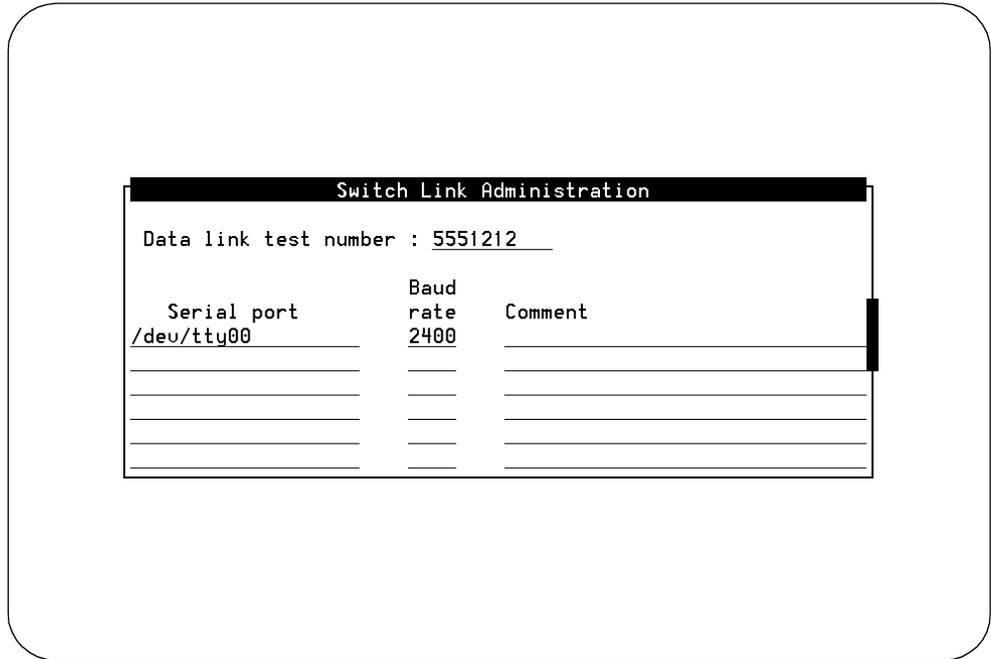


Figure 5-2. Switch Link Administration Screen with System Defaults

11. Use Table 5-1 to enter the correct values in each field on the Switch Link Administration screen.

Table 5-1. Switch Link Administration Screen Entries

Field	Description
Data link test number	Indicates the test number sent to the switch to verify whether the switch is active Setting: Use 555-1212.
Serial port	Indicates which port on the multiport circuit card in the INTUITY system is connected to the integration device Setting: Press (CHOICES) (F2) to choose from a menu of available ports. Settings are in the format /dev/ttysax, where x is a letter a - h representing a port on the circuit card (from right to left). AT&T recommends that you use /dev/ttysaa as the serial port.
Baud rate	Indicates the rate at which the SID and the INTUITY system communicate Setting: The baud rate must be set at 1200.
Comment	Use the field to enter a comment. Enter a maximum of 30 characters. Do not use double quotation marks (") or (SHIFT) + backslash (\).

12. Press **(SAVE)** (F3).

The system responds with a confirmation message as shown in Figure 5-3. The message indicates that the serial port was registered successfully and the voice system must be started.

```
Command output
Update Switch Interface Device output :

Register serial port /dev/tty00 successful

In order for the new Switch Link setup
to be effective, please restart the Voice System
```

Figure 5-3. Switch Link Administration Confirmation Message

13. Press **CANCEL** (F6).

The Switch Link Administration screen appears.

14. Press **CANCEL** (F6) again.

Several messages appear indicating that the installation is still running. When the installation process finishes, the following messages are displayed:

```
Installation of INTUITY SID Integration Package (sid)
was successful.
```

```
Insert a diskette into Floppy Drive 1.
Type [go] when ready
or [q] to quit: (default: go)
```

15. Remove Disk 2 of 2 from the floppy drive.

16. Enter **q** to quit.

The Software Install screen appears.

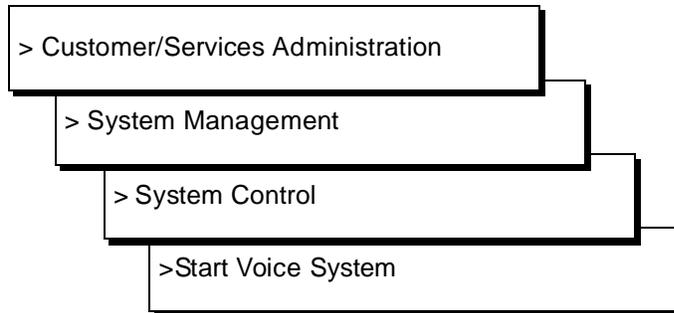
17. Press **CANCEL** (F6) until the INTUITY Administration menu appears.

Restart the voice system as described in the next procedure.

Start the Voice System

Restart the voice system for the INTUITY system to accept and process calls. Use the following procedure to start the voice system.

1. Starting at the INTUITY Administration menu, select the following series of menu options:



Messages appear indicating that the voice system is being started.

When the process finishes, the following message is displayed:

```
The system message might wipe out the  
Console Login prompt
```

```
Please hit the <Enter> key after the messages stop  
scrolling on the screen
```

```
Press <Enter> to continue. . .
```

2. Press **ENTER**.

The System Control menu appears.

3. Press **CANCEL** (F6) until the INTUITY Administration menu appears.

Turn on Transfer Feature

After you install the SID software and restart the voice system, turn on the transfer feature in the INTUITY system. For this procedure, refer to *INTUITY AUDIX Release 3.3 Administration and Feature Operations*, 585-310-552, to set the transfer type field to *basic*.

Summary

You have completed the software installation steps required for the Northern Telecom integration. Proceed to Chapter 6, "Administering INTUITY System for Northern Telecom Integration".

Administering INTUITY System for Northern Telecom Integration

6

Introduction

This chapter describes how to administer the INTUITY system for integration with the Northern Telecom switch. To integrate with the Northern Telecom switch, the INTUITY system needs specific information about how the integration is set up, such as the serial port and baud rate being used. To administer the INTUITY system, you must complete the following screens:

- Switch Link Administration screen
- System Translation screen

Administer the Switch Link Administration Screen

During the SID software installation process, the values for the Switch Link Administration screen were administered. You must change the default settings on this screen. Use the following procedure to change the settings.

1. Login as **craft**.
2. Press **(ENTER)** to accept the AT386 default.

The INTUITY Administration menu appears as shown in Figure 6-1.

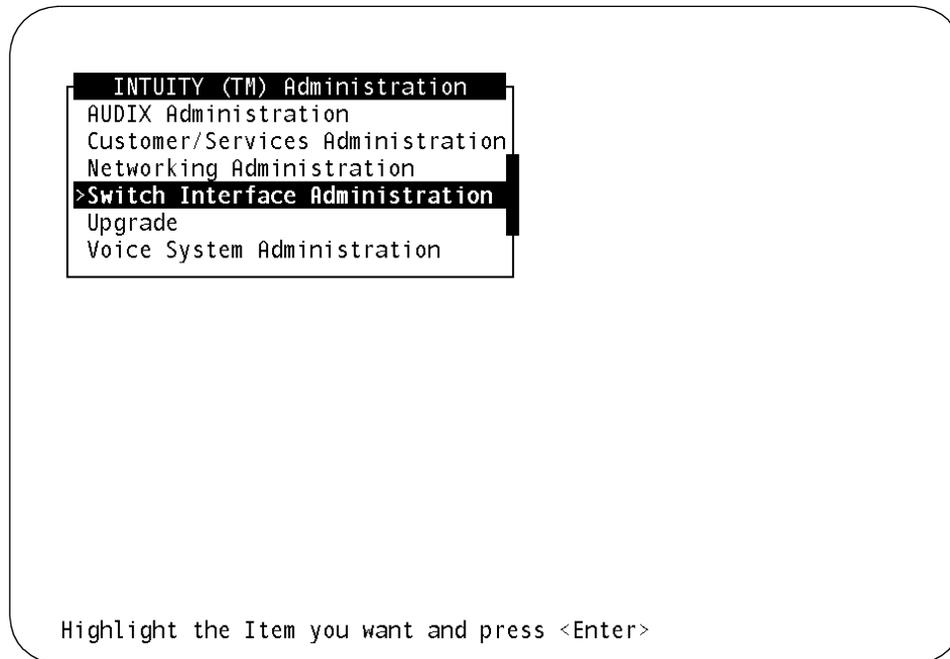


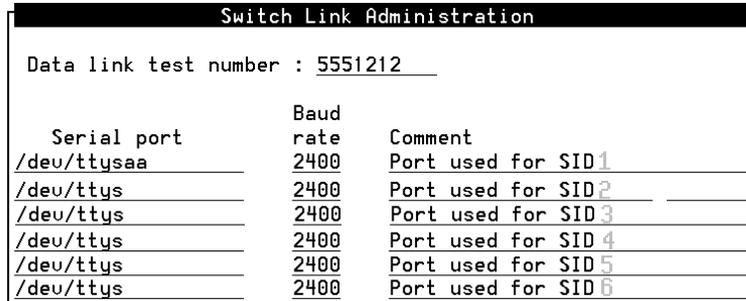
Figure 6-1. INTUITY Administration Menu

3. Select **Switch Interface Administration** from the INTUITY Administration Menu. The Switch Interface Administration menu appears as shown in Figure 6-2.



Figure 6-2. Switch Interface Administration Menu

4. Select **Switch Link Administration** from the menu. The Switch Link Administration screen appears as shown in Figure 6-3.



The screenshot shows a terminal window titled "Switch Link Administration". At the top, it displays "Data link test number : 5551212". Below this is a table with three columns: "Serial port", "Baud rate", and "Comment". The table lists six rows of serial port assignments, each with a baud rate of 2400 and a comment indicating the port is used for a specific SID.

Serial port	Baud rate	Comment
/dev/tty saa	2400	Port used for SID 1
/dev/tty s	2400	Port used for SID 2
/dev/tty s	2400	Port used for SID 3
/dev/tty s	2400	Port used for SID 4
/dev/tty s	2400	Port used for SID 5
/dev/tty s	2400	Port used for SID 6

Figure 6-3. Switch Link Administration Screen Showing Multiple SID Serial Port Assignments

5. Use Table 6-1 to enter the correct values in each field on the Switch Link Administration screen, shown in Figure 6-3.

Table 6-1. Switch Link Administration Screen Entries

Field	Description
Data link test number	<p>Indicates the test number sent to the switch to verify whether the switch is active</p> <p>Setting: Use 555-1212</p>
Serial port	<p>Indicates which port on the multiport serial card in the INTUITY system is connected to the integration device</p> <p>Setting: Press (CHOICES) (F2) to choose from a menu of available ports. Settings are in the format /dev/ttysax, where x is a letter a - h representing a port on the serial card (from right to left). AT&T recommends that you use /dev/ttysaa as the serial port.</p> <p>If you have multiple SIDs, enter the serial port address for each of the SIDs.</p>
Baud rate	<p>Indicates the rate at which the SID and the INTUITY system communicate</p> <p>Setting: The baud rate must be set at 1200.</p>
Comment	<p>Use the field to enter a comment. Enter a maximum of 30 characters. In your comment, do not use double quotation marks (") or (SHIFT) + backslash (\).</p> <p>If you have multiple SIDs, use the comment field to identify the number of the SID.</p>

6. Press **(SAVE)** (F3).

After you press the key, a confirmation message appears as shown in Figure 6-4. The message indicates that the serial port was registered successfully and that the voice system must be stopped and restarted.



NOTE:

If you assigned multiple SIDs, the confirmation message shows a successful registration of each port.

```
Command output
Update Switch Interface Device output :
Register serial port /dev/ttysaa successful
In order for the new Switch Link setup
to be effective, please restart the Voice System
```

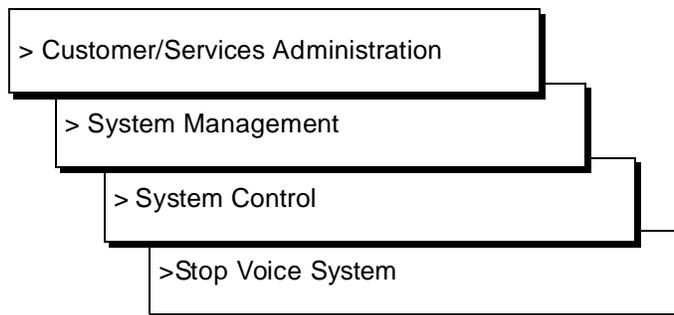
Figure 6-4. Switch Link Administration Confirmation Message

7. Press **CANCEL** (F6) until the INTUITY Administration menu appears as shown in Figure 6-1.
8. Proceed to the next procedure, "Stop and Restart the INTUITY Voice System".

Stop and Restart the INTUITY Voice System

To execute the changes you made on the Switch Link Administration screen, use the following procedure to stop and restart the voice system.

1. Starting at the INTUITY Administration menu, shown in Figure 6-1, select the following series of menu options:



After you select the last option, Stop Voice System, the following message appears:

```
Enter y to continue, n to quit.
```

-
2. Enter **y** to begin the process.

Before stopping the voice system, the system pauses until all calls in progress disconnect. During the pause, you see a series of messages.

When all calls have disconnected, the following message appears:

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

3. Press **ENTER**.

The System Control menu appears.

4. Select Start Voice System from the System Control menu.

After you select the option, a message indicates that the voice system is restarting. When the process finishes, the following messages appear:

```
The system message might wipe out the
Console Login prompt

Please hit the <Enter> key after the messages stop
scrolling on the screen

Press <Enter> to continue. . .
```

5. Press **ENTER**.

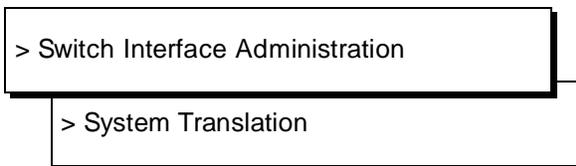
The System Control menu appears.

6. Press **CANCEL** (F6) until the INTUITY Administration menu appears.

Administer the System Translation Screen

Use the following procedure to administer the System Translation screen.

1. Starting at the INTUITY Administration menu, shown in Figure 6-1, select the following series of menu options:



After you select the System Translation option, the System Translation screen appears as shown in Figure 6-5.

The screenshot shows a terminal window titled "System Translation". The configuration is as follows:

```
System Translation
Switch link type: SMSI
Host type: NTI
Host link ID: 1
Extension length: 4
```

Address Ranges:	first	/	last	public network number
1.	0000	/	9999	0000000
2.	_____	/	_____	_____
3.	_____	/	_____	_____
4.	_____	/	_____	_____
5.	_____	/	_____	_____
6.	_____	/	_____	_____
7.	_____	/	_____	_____
8.	_____	/	_____	_____

The length of extension is 3 to 7

Figure 6-5. System Translation Screen

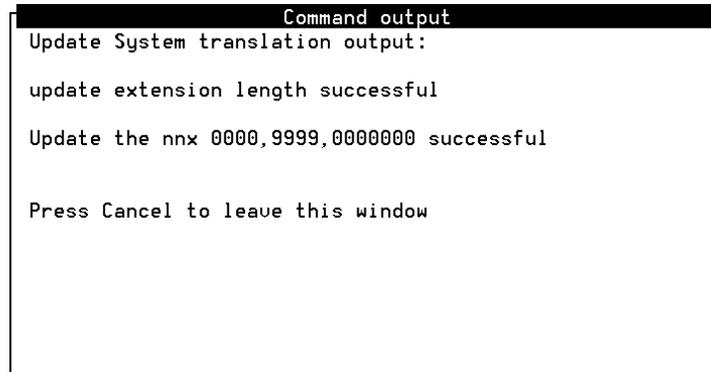
- Use Table 6-2 to enter the correct values in each field on the System Translation screen.

Table 6-2. System Translation Screen Entries

Field	Description
Switch link type	The field contains the current switch link type. You cannot change this setting.
Host type	The field contains the current host switch type. You cannot change this setting.
Host link ID	The field contains the current host link ID. You cannot change this setting.
Extension length	The field indicates the number of digits allowed for each extension in the address range. Setting: Enter a number from 3 to 10.
Address ranges: first Address ranges: last Address ranges: public network number	These fields indicate the first and last extension number in the address range and the public network number. Setting: Address ranges are obtained from the switch. You can have up to 8 address ranges, one for each public network number. These ranges cannot overlap. The number of digits for the first and last extensions corresponds to the setting in the extension length field. The number of digits for the public network number must match the dial string on the SID. The public network number must end with the digits of the first extension number.

- Press **(SAVE)** (F3) to save your entries on the screen.

The Command Output screen appears as shown in Figure 6-6. The message indicates that the fields were updated successfully.



```
Command output
Update System translation output:
update extension length successful
Update the nrx 0000,9999,00000000 successful

Press Cancel to leave this window
```

Figure 6-6. Command Output Screen

4. Press **CANCEL** (F6) until the INTUITY Administration menu appears.

Summary

You have completed the administration of the INTUITY system for the Northern Telecom integration. Proceed to Chapter 7, "Northern Telecom SL-1 Switch Administration".

Northern Telecom SL-1 Switch Administration

7

Introduction

This chapter contains instructions for administering a Northern Telecom SL-1 switch to work with an Intuity system. If you have a Northern Telecom Meridian or Meridian SL-1 switch, refer to Chapter 8, "Northern Telecom Meridian and Meridian SL-1 Switch Administration". If you have another type of switch, refer to the documentation provided with that switch for more information.

Acceptance Tests

Acceptance tests begin after you administer two test subscribers on the Intuity system. As explained in *Intuity New System Planning*, 585-310-603, two test subscribers should have been administered on the switch for acceptance tests. Refer to the documentation provided with your switch for additional information about performing acceptance tests.

Forwarding a subscriber to the Primary DN of the SL-1 set creates an integrated call. Software releases Generic 11 Release 10 and later allow different call forwarding paths for external and internal calls. Examine the needs of the individual users when determining the call forwarding conditions.

SL-1 sets have visual message waiting indicators controlled through the MWK key. Analog sets prior to Generic 11 Release 2 use neon lamps. To operate the neon lamps, the switch must have QPC267 cards and a QSY22 power supply. Switches with Generic 11 Release 2 or later optionally can use Audible Message Waiting (AMW) to provide a stutter dial tone on analog sets or SL-1 sets without an MWK key.

**CAUTION:**

If you change subscriber information, the subscriber may experience a loss of voice mail service or phone service.

Cut-to-Service

Cutting over an Intuity system requires you to change the coverage path used by all subscribers. All Intuity system initial administration, switch administration, and acceptance tests must be completed before you cut the system into service.

Cutting-to-service on the Northern Telecom SL-1 is a switch-based task. You must administer each subscriber and the process may require a large amount of time if you have a large subscriber base. Determine a time and a strategy for administering the subscribers. For example, you may plan to perform the administration at night or during a period of low call volume.

**NOTE:**

When you cut the subscribers into service, all subscribers receive Intuity system service. You need to prepare the subscribers and train the system attendants before you cut-to-service.

Switch Integration

The following procedures must be performed on the Northern Telecom switch to administer it for the integration.

- Verify switch options.
- Set up an analog line for each integrated voice mail port.
- Set up the SL-1 station emulation.
- Administer the subscribers.

**NOTE:**

The instructions in this chapter display only the screen fields and information necessary to integrate the SL-1 switch with an Intuity system. If additional information is required for any screens or processes, refer to the documentation supplied with the SL-1 switch. The switch administration process should be performed by a trained technician.

The sample displays used in this chapter are taken from the Northern Telecom administration terminal. Any field displayed in boldface must be entered by the user. Italics are used to indicate options that may not be present for all revisions of the PBX software.

The procedures on the following pages use specific extension numbers for SID, analog voice mail ports and subscribers as examples. Consult with your PBX administrator to determine the numbering plan and naming conventions you should follow. The following examples assume:

- SID is assigned a pilot extension number of 500.
- Eight extensions (500 and 551 through 557) will be created and administered onto keys 0 through 7 on the SL-1 set to create a queue for calls that forward under Ring/No Answer conditions.
- Five extensions (558 through 562) will be created and administered onto keys 13 through 17 on the SL-1 set to create a queue for calls that forward under Busy conditions.
- A four-port voice mail system will be installed. The analog ports are numbered 501, 502, 503, and 504.
- Extensions 201 and 202 are voice mail subscribers.

Verify Switch Options

Before proceeding with the configuration of the voice mail analog ports and the administration of the SL-1 station emulation, check the options installed on the SL-1 switch. The switch must contain the following two option packages:

- Package 19, Digit Display Software (DDSP)
- Package 46, Message Waiting Center (MWC)

Verify that the switch contains the software options by referring to the SL-1 LD 22 screen shown in Figure 7-1.

```
>LD 22
REQ PRT
TYPE PKG
OPTF
CDR
CTY
DISA
NCOS
DDSP
MWC
```

Figure 7-1. Option Verification

If you do not see one of the values on the screen, contact your switch administrator or your switch vendor for information on activating or installing the packages.

Proceed to the next section, "Administer the Analog Voice Mail Ports."

Administer the Analog Voice Mail Ports

Each voice mail port must be connected to an analog station line on the switch. These lines are configured as 2500 telephone sets. The extension numbers assigned to the voice mail ports are also entered into the SID. Sequentially numbering the extensions simplifies the process. You must complete the following two steps in the administration process for each analog port:

- Create new extension.
- Verify the administration.

Create Analog Voice Mail Port Extensions

⇒ NOTE:

The Northern Telecom SL-1 using QPC60, QPC452 or QPC192 (OPX) provides silence-on-disconnect to the voice mail system. Some systems may require an external device to provide loop current disconnect for supervision.

Create analog extensions for each voice mail port by referring to the SL-1 LD 10 screen shown in Figure 7-2. Your screen may not appear exactly like the example shown. Refer to "Worksheet C: Primary DN, Secondary DN and Range DNs for the SID" in Chapter 3, "Switch Integration Planning", for the Primary DN or forwarding target number that you should use.

```
LD      10
REQ     NEW
TYPE    500
TN      0 0 5 0
CDEN    SD          (SD if QPC60, DD if QPC452, 4D if QPC594)
DES
CUST    0
DIG
DN      501
HUNT
TGAR
NCOS
RNPG
CLS     DTN XFA
FTR
```

Figure 7-2. Creation of Extension

Repeat for each analog voice mail port extension to be created. When you finish creating voice mail port extensions, continue to the next section, "Verify Voice Mail Port Extensions."

Verify Voice Mail Port Extensions

Check each analog extension you created by referring to the SL-1 LD 20 screen shown in Figure 7-3. Enter the same TN that you entered during the last procedure, "Create Analog Voice Mail Port Extensions"

```
>LD      20
REQ      PRT
TYPE     TNB
TN       0 0 5 0
DATE
PAGE
DES

DES
TN       0 0 5 0
TYPE     500
CDEN     SD
DES
CUST     0
DIG
DN       501
HUNT
TGAR
NCOS
RNPG
CLS      DTN XFA
FTR
```

Figure 7-3. Extension Verification

Continue to the next section, "Administer SL-1 Station Emulation."

Administer SL-1 Station Emulation

For a Northern Telecom SL-1 to integrate properly with an Intuity system, you must administer an SL-1 station emulation on the switch. After the SL-1 has been configured on the switch, the SID emulates the SL-1 set and automatically handles button management.

NOTE:

Before beginning the SL-1 set configuration, locate an available interface channel, either QPC61 or QPC451.

As you configure the SL-1 set emulation, each key is assigned to a specific function. For example, key **0** must be set as the primary Directory Number (DN) or forwarding target for all voice mail subscribers. During the emulation administration, set key **0** to the extension assigned to the Intuity system. If the extension is 500, you assign key **0** to 500. Use the guidelines in Table 7-1 as you configure the SL-1 emulation.

Table 7-1. Key Assignments for the SL-1 Emulation

Key	Assignment
0	Primary DN or forwarding target for subscribers
1-7	Extensions used with the hunt key feature to provide an eight-line call queue for Ring/No Answer calls.
9	Release (RLS)
10	Message Indication (MIK)
11	Message Cancellation (MCK)
12	Transfer (TRN)
13	Forwarding target for Busy calls
14-17	Extensions used with the hunt key feature to provide a five-line call queue for Busy calls.
20-27	Channel extensions assigned to the voice mail ports
30-37	Channel extensions assigned to the voice mail ports
40-47	Channel extensions assigned to the voice mail ports

Create the Analog Extensions for the Busy Hunt Chain (Optional)

This process is optional. Refer to the SL-1 LD 10 screens shown in Figure 7-4 and Figure 7-5 while performing this task.

```
> LD 10
REQ    NEW
TYPE   500
TN     0 0 6 0
CDEN   SD      (SD if QPC60, DD if QPC452, 4D if QPC594)
DES
CUST   0
DIG
DN     558
HUNT   559
TGAR
NCOS
RNPG
CLS    HTA
FTR
```

Figure 7-4. Programming the First Extension for Busy Hunt Chain

```
> LD 10
REQ    NEW
TYPE   500
TN     0 0 6 1
CDEN   SD      (SD if QPC60, DD if QPC452, 4D if QPC594)
DES
CUST   0
DIG
DN     559
HUNT   560
TGAR
NCOS
RNPG
CLS    HTA
FTR
```

Figure 7-5. Programming the Second Extension for Busy Hunt Chain

Repeat this step for the three remaining extensions in the busy hunt chain. The last extension can be programmed to hunt to an attendant position for overflow, if required.

Create SL-1 Digital Set Emulation

Refer to the SL-1 LD 11 screen shown in Figure 7-6 while administering an SL-1 set. The screen may not appear exactly as the example shown depending upon the software version and options installed on your switch.

```

>LD 11
REQ      NEW
TYPE     SL1
TN       0 0 6 2
CDEN     SD      (SD if QPC61, DD if QPC451)
DES
CUST     0
KLS      5
FDN
TGAR
NCOS
RNPG
SSU
CLS      UNR DDS HTA
HUNT     000
LHK      7
KEY      00 SCR 500
KEY      01 SCR 551
KEY      02 SCR 552
KEY      03 SCR 553
KEY      04 SCR 554
KEY      05 SCR 555
KEY      06 SCR 556
KEY      07 SCR 557
KEY      09 RLS
KEY      10 MIK
KEY      11 MCK
KEY      12 TRN
KEY      13 SCR 558
KEY      14 SCR 559
KEY      15 SCR 560
KEY      16 SCR 561
KEY      17 SCR 562
KEY      20 SCN 501
MIX
KEY      21 SCN 502
MIX
KEY      22 SCN 503
MIX
KEY      23 SCN 504
MIX
KEY

```

Figure 7-6. Creating SL-1 Digital Set Emulation

Verify Administration of the SL-1

After configuring the SL-1 station emulation, verify the correct administration of the SL-1 by referring to the SL-1 LD 20 screen shown in Figure 7-7. The screen may not appear exactly as the example shown depending upon the software version and options installed on your switch.

Compare the values on the screen with the values you entered in the previous section. Check each hunt group extension and each analog voice mail port extension. If any of the information was not entered correctly, return to the previous section, "Create SL-1 Digital Set Emulation."

```
>LD 20
REQ      PRT
TYPE     TNB
TN       0 0 6 2
DATE
PAGE
DES

DES
TN       0 0 6 2
TYPE     SL-1
KLS      5
FDN
TGAR
NCOS
RNPG
SSU
CLS      UNR DDS HTA
HUNT     000
LHK      7
KEY      00 SCR 500
KEY      01 SCR 551
KEY      02 SCR 552
KEY      03 SCR 553
KEY      04 SCR 554
KEY      05 SCR 555
KEY      06 SCR 556
KEY      07 SCR 557
KEY      09 RLS
KEY      10 MIK
KEY      11 MCK
KEY      12 TRN
KEY      13 SCR 558
KEY      14 SCR 559
KEY      15 SCR 560
KEY      16 SCR 561
KEY      17 SCR 562
KEY      20 SCN 501
KEY      21 SCN 502
KEY      22 SCN 503
KEY      23 SCN 504
```

Figure 7-7. Verifying Administration of SL-1

Administer Subscribers

Software Generic 11 Release 10 and greater allows different call forwarding paths for external and internal calls. Call forwarding conditions should be determined by the needs of the individual users. Any phone forwarded to the main DN of SID will be answered automatically by integrated voice messaging. Subscribers' telephones are programmed to forward to the Primary DN of the SL-1 for Ring/No Answer calls and to the first extension in the Busy call queue for Busy calls.

The SL-1 sets have visual message waiting indication through the administration of the MWK key. Analog sets prior to Generic 11 Release 2 and greater have the Audible Message Waiting (AMW) option that provides a stutter dial tone on analog sets or SL-1 sets without an MWK key.

Lamp Allowed (LPA) is used in the Class of Service when the analog set is equipped with a neon lamp. If the PBX is equipped with AMW, Lamp Denied (LPD) will be programmed to allow stutter dialtone. Call Forward By Type (CFTA) is a feature available in PBXs with software Generic 11 Release 10 and greater. External Forward DN (EFD) and External Hunt (EHT) are used in conjunction with CFTA. Call Forward No Answer, Second Level (SFA) is a feature that is available in Generic 11 Release 15 and allows a call to be forwarded to a second level on Ring/No Answer.

Refer to the SL-1 LD 10 screen as shown in Figure 7-8 while performing system administration for analog sets.

```
>LD 10
REQ      CHG
TYPE     500
TN       0 0 7 1
CDEN
DES
CUST
DIG
DN
HUNT     558
TGAR
NCOS
RNPG
CLS      HTA FNA MWA LPA CFTA SFA
FTR      FDN 500
          EFD 500
          EHT 558
```

Figure 7-8. System Administration for Analog Sets

Refer to the SL-1 LD 11 screen as shown in Figure 7-9 while performing system administration for SL-1 sets.

Northern Telecom PBXs with Generic 11 Release 2 can have the optional AMW. The SL-1 set, in most circumstances, will have an MWK key for visual indication of a message waiting. If the SL-1 set does not have an MWK key it will receive stutter dialtone for an indication of message waiting. CFTA is a feature available in PBXs with software Generic 11 Release 10 and greater. EFD and EHT are used in conjunction with CFTA.

```
>LD 11
REQ      CHG
TYPE     SL1
TN       0 0 8 3
CDEN
DES
CUST
KLS
FDN      500
TGAR
NCOS
RNPG
CLS      HTA FNA MWA CFTA
EFD      500
HUNT     558
EHT      558
LHK
KEY      04 MWK 500
```

Figure 7-9. System Administration for SL-1 Sets

Verify Subscriber Administration

After performing subscriber administration, refer to the SL-1 LD 20 screen as shown in Figure 7-10 to verify the information.

```
>LD 20
REQ      PRT
TYPE     TNB
TN       0 0 8 3
DATE
PAGE
DES
DES
TN       0 0 8 3
TYPE     SL1
CUST     0
FDN      500
TGAR
NCOS
RNPG
SSU
CLS      HTA FNA MWA CFTA
EFD      500
HUNT     558
EHT      558
LHK
KEY      00 SCR 201
KEY      01 SCR 211
KEY      03 TRN
KEY      04 MWK 500
KEY      09 RLS
```

Figure 7-10. Verification of Subscriber Administration

Summary

If you are using multiple SIDs to support an Intuity system larger than eight ports, repeat the procedures in this chapter to configure the switch for additional SIDs. Use the correct SID number from "Worksheet B: Extension/LTN Plan" and "Worksheet C: Primary DN, Secondary DN and Range DNs for the SID" as you administer each SID.

You have finished performing switch administration on Northern Telecom SL-1 for integration with the Intuity system. Proceed to Chapter 9, "Switch Integration Device Administration", to configure the switch integration device.

Northern Telecom Meridian and Meridian SL-1 Switch Administration

8

Introduction

This chapter contains instructions for administering a Northern Telecom Meridian or Meridian SL-1 switch to work with an INTUITY System. If you have a Northern Telecom SL-1 switch, refer to Chapter 7, "Northern Telecom SL-1 Switch Administration". If you have another type of switch, refer to the documentation provided with that switch for more information.

Acceptance Tests

Acceptance tests begin after you administer two test subscribers on the INTUITY system. As explained in *INTUITY New System Planning*, 585-310-603, two test subscribers should have been administered on the switch for acceptance tests. Refer to the documentation provided with your switch for additional information about performing acceptance tests.

Forwarding a subscriber to the Primary DN of the SL-1 set creates an integrated call. Software releases Generic 11 Release 10 and later allow different call forwarding paths for external and internal calls. Examine the needs of the individual users when determining the call forwarding conditions.

SL-1 sets have visual message waiting indicators controlled through the MWK key. Analog sets prior to Generic 11 Release 2 use neon lamps. To operate the neon lamps, the switch must have QPC267 cards and a QSY22 power supply. Switches with Generic 11 Release 2 or later optionally can use Audible Message Waiting (AMW) to provide a stutter dial tone on analog sets or SL-1 sets without a MWK key.



CAUTION:

If you change subscriber information, the subscriber may experience a loss of voice mail service or phone service.

Cut-to-Service

Cutting over an INTUITY system requires you to change the coverage path used by all subscribers. All INTUITY system initial administration, switch administration, and acceptance tests must be completed before you cut the system into service.

Cutting-to-service on the Northern Telecom SL-1 is a switch-based task. You must administer each subscriber and the process may require a large amount of time if you have a large subscriber base. Determine a time and a strategy for administering the subscribers. For example, you may plan to perform the administration at night or during a period of low call volume.



NOTE:

When you cut the subscribers into service, all subscribers receive INTUITY system service. You need to prepare the subscribers and train the system attendants before you cut to service.

Switch Integration

The following procedures must be performed to administer the switch for the integration.

- Verify switch options.
- Set up an analog line for each integrated voice mail port.
- Set up the Meridian station emulation.
- Administer the subscribers.



NOTE:

The instructions in this chapter display only the screen fields and information necessary to integrate the Meridian switch with an INTUITY system. If additional information is required for any screens or processes,

refer to the documentation supplied with the Meridian switch. The switch administration process should be performed by a trained technician.

The sample displays used in this chapter are taken from the Northern Telecom administration terminal. Any field displayed in boldface must be entered by the user. Italics are used to indicate options that may not be present for all revisions of the PBX software.

The procedures on the following pages use specific extension numbers for SID, analog voice mail ports and subscribers as examples. Consult with your PBX administrator to determine the numbering plan and naming conventions you should follow. The following examples assume:

- SID is assigned a pilot extension number of 500.
- Seven extensions (500 and 551 through 556) will be created and administered onto keys 0 through 6 on the Meridian set to create a queue for calls that forward under Ring/No Answer conditions.
- Five extensions (557 through 561) will be created and administered onto keys 8 through 12 on the 2616 to create a queue for calls that forward under Busy conditions.
- A four port voice mail system is being installed. The analog ports are numbered 501, 502, 503, and 504.
- Extensions 201 and 202 are voice mail subscribers.

Verify Switch Options

Before proceeding with the configuration of the voice mail analog ports and the administration of the Meridian station emulation, check the options installed on the Meridian switch. The switch must contain the following two option packages:

- Package 19, Digit Display Software (DDSP)
- Package 46, Message Waiting Center (MWC)

Verify that the switch contains the software options by referring to the Meridian LD 22 screen shown in Figure 8-1.

```
>LD 22
REQ      PRT
TYPE     PKG
OPTF
CDR
CTY
DISA
NCOS
DDSP
MWC
```

Figure 8-1. Option Verification

If you do not see one of the values on the screen, contact your switch administrator or your switch vendor for information on activating or installing the packages.

Proceed to the next section, “Administer the Analog Voice Mail Ports.”

Administer the Analog Voice Mail Ports

Each voice mail port must be connected to an analog station line on the switch. These lines are configured as 2500 telephone sets. The extension numbers assigned to the voice mail ports are also entered into the SID. Sequentially numbering the extensions simplifies the process. You must complete the following two steps in the administration process for each analog port:

- Create new extensions.
- Verify the administration.

Create Analog Voice Mail Port Extensions

⇒ NOTE:

The Northern Telecom Meridian PBX using QPC60, QPC452, QPC594, or QPC192 (OPX) or NT8D03AB provides silence-on-disconnect to the voice mail system. Some systems may require an external device to provide loop current disconnect for supervision. Generic 11 Release 17 provides dial tone as disconnect supervision.

Create analog extensions for each voice mail port by referring to the Meridian LD 10 screen shown in Figure 8-2. Your screen may not appear exactly like the example shown. Refer to "Worksheet C: Primary DN, Secondary DN and Range DNs for the SID" in Chapter 3, "Switch Integration Planning", for the Primary DN or forwarding target number that you should use.

```
>LD 10
REQ      NEW
TYPE     500
TN       0 0 5 0
CDEN     SD      (SD if QPC60, DD if QPC452, 4D if QPC594)
DES
CUST     0
DIG
DN       501
HUNT
TGAR
NCOS
RNPG
CLS      DTN XFA
FTR
```

Figure 8-2. Creation of Extension

Repeat for each analog voice mail port extension to be created. When you finish creating voice mail port extensions, continue to the next section, "Verify the Voice Mail Port Extensions."

Verify the Voice Mail Port Extensions

Check each analog extension you created by referring to the Meridian LD 20 screen shown in Figure 8-3.

```
>LD 20
REQ      PRT
TYPE     TNB
TN       0 0 5 0
DATE
PAGE
DES
DES
TN       0 0 5 0
TYPE     500
CDEN     SD
DES
CUST     0
DIG
DN       501
HUNT
TGAR
NCOS
RNPG
CLS     DTN SFA
FTR
```

Figure 8-3. Extension Verification

Continue to the next section, "Administer Meridian 2616 Set Emulation."

Administer Meridian 2616 Set Emulation

For a Northern Telecom Meridian to integrate properly with an INTUITY system, you must administer a Meridian station emulation on the switch. After the Meridian digital station has been configured on the switch, the SID emulates a Meridian 2616 set and automatically handles button management.

⇒ NOTE:

Before beginning the Meridian set configuration, locate an available interface channel, either QPC578 or NT8D02.

As you configure the Meridian set emulation, each key is assigned to a specific function. For example, key must be set as the primary Directory Number (DN) or forwarding target for all voice mail subscribers. During the emulation administration, key is set to the extension assigned to the INTUITY system. If the extension is 500, you assign key to 500. Use the guidelines in Table 8-1 as you configure the Meridian emulation.

Table 8-1. Key Assignments for the Meridian Emulation

Key	Assignment
0	Primary DN or forwarding target for subscribers
1-6	Extensions used with the hunt key feature to provide a seven line call queue for Ring/No Answer calls.
8-12	Optionally, may be programmed as a secondary queue for Busy calls. The DN assigned to Key 8 acts as the forwarding target for Busy calls. You must use this administration if your voice mail system supports separate greetings for Ring/No Answer and Busy calls.
13	Message indication (MIK)
14	Message cancellation (MCK)
15	Transfer (TRN)
16-37	Channel extensions assigned to the voice mail ports

Make sure, when programming the 2616 telephone, that DDS (Delay Display) is used rather than ADD (Automatic Digit Display).

Create Meridian Emulation Channel

Refer to the Meridian LD-11 screen shown in Figure 8-4 to create the 2616 digital set emulation. This is a standard administration that does not provide support for a separate busy-forward call queue. Every call forwarded to SID will be transferred to voice mail and labeled as Ring/No Answer. Optionally, calls can be forwarded to a separate busy-forward call queue. Refer to Figure 8-5 for this option.

```
>LD      11
REQ      NEW
TYPE     2616
TN       0 0 6 2
DES
CUST     0
AOM      1
FDN
TGAR
NCOS
RNPG
SSU
CLS      DDS HFD CNDD HTA
HUNT     000
LHK      6
KEY      00 SCR 500
KEY      01 SCR 551
KEY      02 SCR 552
KEY      03 SCR 553
KEY      04 SCR 554
KEY      05 SCR 555
KEY      06 SCR 556
KEY      13 MIK
KEY      14 MCK
KEY      15 TRN
KEY      16 SCN 501
MIX
KEY      17 SCN 502
MIX
KEY      18 SCN 503
MIX
KEY      19 SCN 504
```

Figure 8-4. Meridian Digital Set Emulation

Administer Separate Call Queue for Busy Calls

Optionally, calls can be forwarded to the secondary call queue (Ext. 558) and will be transferred and labeled as Busy Forwarded. Refer to the Meridian LD 11 screen as shown in Figure 8-5.

```
>LD      11
REQ      NEW
TYPE     2616
TN       0 0 6 2
DES
CUST     0
AOM      1
FDN
TGAR
NCOS
RNPG
SSU
CLS      DDS HFD CNDD HTA
HUNT     000
LHK      12
KEY      01 SCR 500
KEY      02 SCR 552
KEY      03 SCR 553
KEY      04 SCR 554
KEY      05 SCR 555
KEY      06 SCR 556
KEY      08 SCR 557
KEY      09 SCR 558
KEY      10 SCR 559
KEY      11 SCR 560
KEY      12 SCR 561
KEY      13 MIK
KEY      14 MCK
KEY      15 TRN
KEY      16 SCN 501
MIX
KEY      17 SCN 502
MIX
KEY      18 SCN 503
MIX
KEY      19 SCN 504
```

Figure 8-5. Separate Call Queue for Busy Calls

Verify Meridian Emulation Channel

After configuring the Meridian station emulation, verify the correct administration by referring to the Meridian LD 20 screen shown in Figure 8-6. Use the same terminal number you used in the previous section, "Create the Meridian Emulation Channel."

Compare the values on the screen with the values you entered in the previous section. Check each hunt group extension and each analog voice mail port extension. If any of the information was not entered correctly, return to the previous section, "Create the Meridian Emulation Channel."

```
>LD      20
REQ      PRT
TYPE     TNB
TN       0 0 6 2
DATE
PAGE
DES

DES

CUST     0
AOM      1
FDN
TGAR
NCOS
RNPG
SSU
CLS      DDS HFD CNDD HTA
HUNT     000
LHK      6
KEY      00 SCR 500
KEY      01 SCR 551
KEY      02 SCR 552
KEY      03 SCR 553
KEY      04 SCR 554
KEY      05 SCR 555
KEY      06 SCR 556
KEY      08 SCR 557
KEY      09 SCR 558
KEY      10 SCR 559
KEY      11 SCR 560
KEY      12 SCR 561
KEY      13 MIK
KEY      14 MCK
KEY      15 TRN
KEY      16 SCN 501
MIX
KEY      17 SCN 502
MIX
KEY      18 SCN 503
MIX
KEY      19 SCN 504
```

Figure 8-6. Verification of Meridian Emulation

Administer Subscribers

Software Generic 11 Release 10 and greater allows different call forwarding paths for external and internal calls. Call forwarding conditions should be determined by the needs of the individual users. Any phone forwarded to the main DN of SID will be answered automatically by integrated voice messaging. Subscriber's telephones are programmed to forward to the Primary DN of the Meridian for Ring/No Answer calls and to the first extension in the Busy call queue for Busy calls.

The digital Meridian and SL-1 sets have visual message waiting indication through the administration of an MWK key or an LED on the telephone. Analog sets prior to Generic 11 Release 2 use neon lamps on the set for visual indication of a message waiting. To operate the neon lamps, QPC789 or NT8D09AB cards are required for the analog stations. PBX's with Generic 11 Release 2 and greater can have optional Audible Message Waiting (AMW) that provides a stutter dial tone on analog sets or Meridian and SL-1 sets without an MWK key.

Lamp Allowed (LPA) is used in the Class of Service when the analog set is equipped with a neon lamp. If the PBX is equipped with AMW, LPD (Lamp Denied) will be programmed to allow stutter dial tone. Call Forward By Type (CFTA) is a feature available in PBXs with software Generic 11 Release 10 and greater. EFD (External Forward DN) and EHT (External Hunt) are used in conjunction with CFTA. Call Forward No Answer, Second Level (SFA) is a feature that is available in Generic 11 Release 15 and allows a call to be forwarded to a second level on Ring/No Answer.

Refer to the LD 10 screen shown in Figure 8-7 while performing system administration for analog sets.

```
>LD 10
REQ    CHG
TYPE   500
TN     0 0 7 1
CDEN
DES
CUST
DIG
DN
HUNT   557
TGAR
NCOS
RNPG
CLS    HTA FNA MWA LPA CFTA SFA
FTR    FDN 500
        EFD 500
        EHT 557
```

Figure 8-7. System Administration for Analog Sets

Refer to the Meridian LD 11 screen as shown in Figure 8-8 while performing system administration for SL-1 sets.

Northern Telecom PBXs with Generic 11 Release 2 can have the optional AMW. The SL-1 set, in most circumstances, will have an MWK key for visual indication of a message waiting. If the SL-1 set does not have an MWK key it will receive stutter dial tone for an indication of message waiting. CFTA is a feature available in PBXs with software Generic 11 Release 10 and greater. EFD and EHT are used in conjunction with CFTA.

```
>LD 11
REQ      CHG
TYPE     SL1
TN       0 0 8 3
CDEN
DES
CUST
KLS
FDN      500
TGAR
NCOS
RNPG
SSU
CLS      HTA FNA MWA LPA CFTA
EFD      500
HUNT     557
EHT      557
LHK
KEY      04 MWK 500
```

Figure 8-8. System Administration for SL-1 Sets

Refer to the Meridian LD 11 screen as shown in Figure 8-9 while performing system administration for digital sets. The M2008 telephones have a built-in LED, therefore an MWK key is not programmed on the set.

```
>LD 11
REQ      CHG
TYPE     2008
TN       0 1 8 3
ECHG
DES
FDN      500
TGAR
NCOS
RNP
SSU
CLS      HTA FNA MWA CFTA SRA
EHD      500
HUNT     557
EHT      557
LHK
```

Figure 8-9. System Administration for Digital Sets

Verify Subscriber Administration

After performing subscriber administration, refer to the Meridian LD 20 screen as shown in Figure 8-10 to verify the information.

```
>LD 20
REQ      PRT
TYPE     TNB
TN       0 1 8 3
DATE
PAGE
DES
DES
TN       0 1 8 3
TYPE     2008
CUST     0
FDN      500
TGAR
NCOS
RNPG
SSU
CLS      HTA FNA MWA CFTA SRA
EFD      500
HUNT     557
EHT      557
LHK
KEY      00 SCR 201
KEY      01 SCR 211
KEY      03 TRN
KEY      09 RLS
```

Figure 8-10. Verification of Subscriber Administration

Summary

If you are using multiple SIDs to support an INTUITY system larger than eight ports, repeat the procedures in this chapter to configure the switch for additional SIDs. Use the correct SID number from "Worksheet B: Extension/LTN Plan" and "Worksheet C: Primary DN, Secondary DN and Range DNs for the SID" as you administer each SID.

You have finished performing switch administration on a Northern Telecom Meridian or Meridian SL-1 switch for integration with the INTUITY system. Proceed to Chapter 9, "Switch Integration Device Administration", to configure the switch integration device.

Switch Integration Device Administration

9

Introduction

This chapter explains how to configure the switch integration device (SID) to integrate with a Northern Telecom switch and an INTUITY system. The installation technician administers the SID based on Northern Telecom switch administration information provided by the customer. As you administer the SID configuration, perform the following procedures:

- Administer the basic parameters
 - Number of voice mail ports
 - Message desk number
 - Calling party identification pad (CPID) string
 - Message waiting indicator (MWI) pad string
 - MWI features
- Administer the extensions and logical terminal numbers
- Save and start the configuration
- Administer the serial data links
- Change the system parameters
 - Set the date and time
 - Set the remote access device control

If you have multiple SIDs for an INTUITY system larger than eight ports, perform all SID administration procedures on each SID.

Power On and Check the SID

Use the following procedure to power on the SID.

1. Toggle the SID power switch to the *ON* position. The power switch is located on the back of the SID on the left side as viewed from the back.

After you power on the SID, the following screen appears.

```
VoiceBridge Bootstrap Module      V1.xx
Selftest.....
```

The system is "bootstrapping" or initializing. The App... and Com... messages appear briefly on the screen. The procedure lasts about 20 seconds.

The following screens appear.

```
M-1 Integration Module           V1.xx
Copyright 1992 Voice Technologies Group
```

```
SETUP      1-Params      2-Ports      3-Clear
            4-Advanced
```

2. Press **(FUNC)** on the SID keypad to access the Main Menu.

The Main Menu appears as shown in the following example.

```
M-1          1-View      2-Utills     3-System
            4-Setup      5-Logs       6-Diags
```

3. If you have an INTUITY system larger than eight ports using multiple SIDs, repeat the procedure for each SID.

Continue to the next procedure, "Administer the Basic Parameters."

Administer the Basic Parameters

In Chapter 3, "Switch Integration Planning", you completed switch integration planning worksheets and determined the values for each of the basic parameters. If you did not complete the worksheets, turn to Chapter 3 and complete them now before you proceed with the instructions in this chapter.

After you complete the worksheets in Chapter 3, continue with the instructions in this procedure to configure the basic parameters. For general instructions about using the SID's menus and screens, see Chapter 2, "Switch Integration Device Basics".

1. To access the basic parameters edit screens, press **(FUNC)** on the SID keypad.

The Main Menu appears as shown in the following example.

M-1	1-View	2-Utils	3-System
	4-Setup	5-Logs	6-Diags

2. Press **(4)** on the SID keypad to select the Setup option.

The Setup menu appears as shown in the following example.

SETUP	1-Params	2-Ports	3-Clear
	4-Advanced		

3. Press **(1)** on the SID keypad to access the first in a series of eight Params edit screens as shown in the following example.

SETUP	Number of Ports	8
-------	-----------------	---

4. Enter from "Worksheet A: Switch Integration Information" the number of analog voice mail ports that the SID must support for the INTUITY system.
5. Press **(↓)** to accept the number and move to the Msg Desk Number screen as shown in the following example.

SETUP	Msg Desk Number:	001
-------	------------------	-----

6. Press **(↓)** to accept the default message desk number of 001 and move to the the CPID Pad String screen as shown in the following example.

SETUP	CPID Extension Length:	3
	CPID Pad String:	0000xxx

7. Press **(ENTER)** to accept the default CPID Extension Length number of 3 or enter from "Worksheet A: Switch Integration Information" the extension length assigned on the switch and move to the next line.

8. Press **ENTER** to accept the default CPID Pad String number of 0000xxx or enter from "Worksheet A: Switch Integration Information" the appropriate pad string. Press **↓** to move to the MWI Pad String screen, as shown in the following example.

```
SETUP      MWI Extension Length:      3
           MWI Pad String:      0000xxx
```

9. Press **ENTER** to accept the default MWI extension length number of 3 or enter from "Worksheet A: Switch Integration Information" the extension length assigned on the switch and move to the next line.
10. Press **ENTER** again to accept the default MWI Pad String number of 0000xxx or enter from "Worksheet A: Switch Integration Information" the appropriate pad string. Press **↓** to move to the MWI Feature screen as shown in the following example.

```
SETUP      MWI Feature:      ENABLE
<-  ->1
```

11. Set the value for the message waiting feature as listed on "Worksheet A: Switch Integration Information" in Chapter 3.
- The SID defaults to Enable. If you want to turn off the feature, press the left or right arrow key to change the value to Disable.
12. Press **↓** to move to the MWI Interleave screen, as shown in the following example.

```
SETUP      MWI Interleave:      5_
```

13. Press **↓** to accept the default value and move to the Call Sequence screen as shown in the following example.

```
SETUP      Call Sequence:      Call/Data
```

14. Press **↓** to accept the default value and move to the Primary DN screen as shown in the following example.

```
SETUP      Primary DN:      _____
```

15. Enter the primary DN as listed on "Worksheet C: Primary DN, Secondary DN and Range DNs for the SID" in Chapter 3.
16. Press **(↓)** to accept the default value and move to the Secondary DN screen as shown in the following example.

```
SETUP      Secondary DN:      _____
```

17. Enter the secondary DN as listed on "Worksheet C: Primary DN, Secondary DN and Range DNs for the SID" in Chapter 3.
18. Press **(FUNC)** to save the basic parameter information and return to the Main Menu.

If you have multiple SIDs to support an INTUITY system larger than eight ports, administer the basic parameters on each SID.

Proceed to the next procedure, "Assign LTNs and Extensions," to continue the SID configuration.

Assign LTNs and Extensions

As you assign LTNs and extensions, associate a Centrex LTN with each analog extension number used by the INTUITY system. For each extension, you must assign the same LTN to the extension as assigned on the INTUITY system. If the same LTN is not assigned, the SID does not integrate calls properly. Read the section "Using AutoFill," following this procedure, before assigning extensions and LTNs.

Use the following instructions to assign LTNs and extensions.

1. Press **(FUNC)** on the SID keypad.

The Setup menu appears as shown in the following example.

```
SETUP      1-Params      2-Ports      3-Clear
            4-Advanced
```

2. Press **(2)** to select Ports and access the chain of screens used to enter extension and LTN information.

The VM Port screen appears as shown in the following example.

```
VM Port 1  LTN:          0001
            Extension:      -----
```

The VM Port screen and the next series of screens link together. The number of VM Port screens linked together depends on the number entered on the Number Of Voice Mail Ports screen in the "Administer the Basic Parameters" procedure. If you entered 4, for example, the SID would link 4 VM Port screens together.

In Chapter 3, you completed "Worksheet B: Extension/LTN Plan". Use "Worksheet B: Extension/LTN Plan" while entering LTNs and extensions.

3. If you do not want to use the default LTN, use the keypad to type an LTN over the default. The sample screen uses an LTN of 0001.
4. Press **ENTER** to confirm the LTN. The cursor moves to the Extension field.
5. Use the keypad to type an extension for the LTN.
6. After entering the extension, press **↓** to move to the next VM Port screen as shown in the following example.

VM Port 2	LTN:	0002
	Extension:	211__

In the example, notice that the LTN default automatically increased by one to 0002. You also can set the extension field to automatically increase by using the Autofill feature. For more information on the Autofill feature, refer to the following procedure, "Using Autofill."

7. Repeat steps 4 through 6 for each analog voice mail port.
8. After entering valid LTNs and extensions for all screens, press **FUNC** to return to the Main Menu.

Using AutoFill

If you use consecutive extension numbers, that is, numbers that increase by one, the SID provides an *AutoFill* feature that automates the entry process. Using AutoFill, enter the first extension number on the first VM Port screen. When moving to the next VM Port screen, AutoFill adds one to the extension entered and places the number in the Extension field.

Use the following instructions to use the AutoFill feature.

1. After accessing the first VM Port screen as instructed in the previous procedure of this book, enter an extension number in the Extension field. The following example uses 210 as the first extension number.

VM Port 1	LTN:	0001
	Extension:	210__

2. Position the cursor on the extension number you entered.

3. Press the MODE key for editor help.

An editor help screen appears as shown in the following example.

EDIT	1-Overtyp	2-Insert	3-Clear
	4-Undo	5-AutoFill	6-Lockport

Press **5** to activate the AutoFill option. The SID now uses the number you entered in the first extension field as the base number, adds one to the number for each screen, and places the new number in the extension fields of the remaining screens. In the example, 210 was used as the first extension number. AutoFill automatically places the extension numbers 211, 212, and 213 into the second, third and fourth screens and then returns to the VM Port screen.

If only part of the extensions are numbered consecutively, you can still use the AutoFill feature.

Example: You have a 12 port system. The five extension numbers from 100 to 104 are consecutive. After extension 104, the extensions skip to 200 and continue consecutively to 206. To use the AutoFill feature, follow the regular Autofill instructions for numbers 100 to 104. When you reach the screen that contains extension 105, move the cursor to the Extension field. Enter 200 in the field and turn on AutoFill again. The SID places extensions 201 to 206 in the remaining 6 edit screens.

You also can use AutoFill for LTN data. If you need to start your LTNs at 0010, for example, enter **0010** into the first screen. Turn on AutoFill. AutoFill enters 0011 and up in the LTN fields of the remaining screens.

⇒ NOTE:

If you are using two SIDs to support a system with more than twelve ports, assign extensions and LTNs on each SID. Refer to "Worksheet B: Extension/LTN Plan".

Continue to the next procedure, "Save and Start the Configuration."

Save and Start the Configuration

After administering the basic parameters and assigning LTNs and extensions, you must save the configuration.

⇒ NOTE:

Although the system will ask whether or not the integration should be started, you first should perform the tasks in the following "Administer Serial Data Links" procedure to check the default settings for the SMDI communication link.

Use the following instructions to save the configuration and start the system.

1. Press **[FUNC]** on the SID keypad.

The Setup menu appears.

2. Press **[FUNC]** again to return to the Main Menu.

The SID checks the current configuration against the information you entered. Because you made changes to the configuration, the SID places the following prompt on the screen.

```
SAVE EDITS?                1-Yes        2-No
```

3. Press **[1]** to select Yes and save the configuration changes.

The SID saves the information entered and displays the following message on the screen.

```
Setup Saved...
```

4. After a short pause, the SID places another prompt on the screen as shown in the following example.

```
START SYSTEM?              1-Yes        2-No
```

5. If you want to start the integration, press **[1]** to select Yes.

If you are not ready to start the integration, press **[2]** to select *No* and refer to the following procedure, "Administer Serial Data Links."

After pressing **[1]**, the Restarting System... message appears on the screen. The SID pauses for a few seconds then starts the integration. When the integration starts, the VM_MON screen appears as shown in the following diagram.

```
VM_MON Idle
```

When the SID receives calls, the screen changes to show the SMDI packet being sent to the INTUITY system.

The screen is similar to the following example.

```
VM_MON:  Line:01 Port:0001-350      OK
500
```

⇒ NOTE:

If you are using a multiple SID arrangement, save and start the configuration on each SID.

For more information on view modes, refer to Appendix B, "Using Views During Integration". Continue to the next procedure, "Administer Serial Data Links."

Administer Serial Data Links

The SID assigns a default configuration to the Centrex (SMDI) communication port. Check the SID to make sure the default is set correctly and matches the requirements of your integration. The SID sets the defaults shown in Table 9-1 for the serial data links.

Table 9-1. Serial Data Link Default Values

Link Type	Settings
SMDI:	1200 baud
(Link A)	7 data bits
	1 stop bit
	EVEN parity

⇒ NOTE:

This integration does not use the AuxPort communication port.

Use the following instructions to check or correct the default settings.

1. To access the edit screens used to change the serial data links, press **FUNC** to access the Main Menu.

The Main Menu appears as shown in the following example.

```
M-1      1-View      2-Utills      3-System
          4-Setup      5-Logs        6-Diags
```

2. Select Utills from the menu by pressing **2** on the SID keypad.

The Utils menu appears as shown in the following example.

```
UTILS      1-Login      2-Date/Time  3-Serial
           4-Misc      5-Upgrade
```

3. Press **3** on the SID keypad to access the Serial menu.

The Serial menu appears as shown in the following example.

```
SERIAL      1-Centrex    2-AuxPort
```

4. Press **1** on the SID keypad to access the Centrex serial data link.

When you select Centrex (SMDI) from the menu, you access four edit screens. Use the screens to set the serial data to the values your application requires. For example, press **1** on the keypad.

The Baud Rate edit screen appears as shown in the following example.

```
CENTRX Baud Rate:      1200
<-  ->1
```

5. Set the baud rate to the default value of 1200.

6. Press **↓** to confirm your choice and move to the next screen.

The Parity screen appears as shown in the following example.

```
CENTRX Parity:      EVEN
<-  ->1
```

7. Parity must match the parity value on the Northern Telecom switch. To change the default parity value shown in the field, press the left or right arrow key to toggle through the optional values. Stop pressing the arrow keys when the parity value you want is displayed.

8. Press **↓** to confirm your choice and move to the next screen.

The Byte Length screen appears as shown in the following example.

```
CENTRX Byte Length:      7 Bits
<-  ->1
```

9. To change the default byte length shown in the field, press the left or right arrow key to toggle through the optional values. Stop pressing the arrow keys when the byte length you want to use is displayed.

10. Press **(↓)** to confirm your choice and move to the last screen.

The Stop Bits screen appears as shown in the following example.

CENTRX Stop Bits:	1
<- ->1	

11. To change the default stop bit value shown in the field, press the left or right arrow key to toggle through the optional values. Stop pressing the arrow keys when the stop bit value you want is displayed.

12. Press **(FUNC)** to confirm your choice and return to the Main Menu.

13. You have completed the SMDI configuration setup. The SID automatically accepts and saves any information you change.



NOTE:

Administer the serial data links on all SIDs.

Continue to the next section, “Changing System Parameters.”

Change System Parameters

The SID provides access to two adjustable global system parameters. You can change the following parameters.

- Date and time
- Remote access device control



NOTE:

Use the instructions in this procedure to change the system parameters on all SIDs.

Setting the Date and Time

Set the date and time when installing the SID system so error log messages are properly timestamped. Although the date and time are set at the factory, you may need to change the time to correct differences in time zones. Use the following instructions to set the date and time.

1. Press **(FUNC)** to access the Main Menu.
2. Press **(2)** to access the Utilities menu.
3. Press **(2)** to access the Date and Time screen.

The DT/TM screen appears as shown in the following example. The cursor appears in the date field.

DT/TM	Date:	11/18/92
	Time	15:35:00

The date appears in the format MM/DD/YY (month/day/year), and the time appears in the format HH:MM:SS (hours:minutes:seconds). Each part of the date and time is in a separate field, for a total of six fields. When the form is first displayed, the cursor is located on the month field.

4. Type the correct month or accept the current value, and press **ENTER**.
5. Type the correct day or accept the current value, and press **ENTER**.
6. Type the correct year or accept the current value, and press **ENTER**.
7. Type the correct hours or accept the current value, and press **ENTER**.
8. Type the correct minutes or accept the current value, and press **ENTER**.
9. Type the correct seconds or accept the current value, and press **ENTER**.
10. Press **FUNC** to return to the Main Menu.

SID automatically accepts the information; you do not have to save the information or restart the integration.

Continue to the next procedure, "Setting the Remote Access Device Control."

Setting the Remote Access Device Control

The SID contains an internal 2400 baud modem for remote maintenance. You must connect an analog line to the modem port. Follow the instructions below to set the control for the modem.

1. Press **FUNC** to access the Main Menu.
2. Press **2** to access the Utilities menu.
3. Press **4** to access the Miscellaneous Tools menu.

The Misc menu appears as shown in the following example.

MISC	Remote Access:	MODEM
<-	->1	

4. If MODEM appears in the upper right corner of the screen, press **FUNC** to return to the Main Menu.

If MODEM does not appear in the field, press the right and left arrow keys until MODEM appears then press **FUNC** to return to the Main Menu.

Continue to the next procedure, "Set a Security Level."

Set a Security Level

The various features and functions of the SID are available only at specific security levels. The list below shows each security level and the options available at that level.

- Access Level 0 — The lowest security level. The only options available at Level 0 are the ability to view integration activities, view the software version level, and log in to other access levels. The SID normally operates at Level 0 and you do not need a password to access Level 0.
- Access Level 1 — The second highest security level. Level 1 allows access to all Level 0 features and all of the tools needed to administer the system. The password for this level is 1 followed by the last four digits of your serial number.
- Access Level 2 — The highest security level. Level 2 allows access to all Level 0 and Level 1 features and several special diagnostic tools available only to trained personnel. Only AT&T-authorized personnel can access this level, either on-site or remotely, to perform testing and diagnostics on the SID. The password for this level is given only to authorized personnel.

The factory sets the SID to access Level 1. When you first power on the SID, the unit accesses the SETUP menu and allows you to access all tools required to perform the administration tasks. Select a security level for the SID and make the security level part of the configuration.

NOTE:

AT&T recommends using security Level 0 as the normal operating mode for the SID. Users can access only Level 0 features; this reduces the risk of tampering by unauthorized users.

Use the following instructions to set the security level on the SID.

1. Press **FUNC** to access the Main Menu as shown in the following example.

M-1	1-View	2-Utils	3-System
	4-Setup	5-Logs	6-Diags

2. Press **(2)** to select the Utils menu as shown in the following example.

```
UTILS      1-Login      2-Date/Time    3-Serial
           4-Misc      5-Upgrade
```

3. Press **(1)** to select the Login screen as shown in the following example.

```
LOGIN      Access Level:    1
<- ->     Password
```

4. Press the arrow (**<- ->**) keys to change the access level to 0.

5. Press **(ENTER)** to save the change. The SID immediately updates the security level.

To log in to Level 1, use the instructions above to access the Login screen. Use the arrow keys to set Access Level to 1. The SID now asks you for a password. Type in the Level 1 password and press **(ENTER)**.

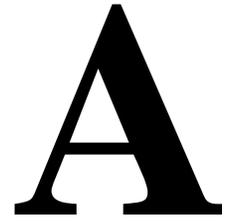
⇒ NOTE:

As you type the password, the letters do not appear on the screen. Set the security level on all SIDs.

Summary

You have configured the SID to integrate with a Northern Telecom switch and an INTUITY system.

Troubleshooting and Error Logs



Introduction

Appendix A provides troubleshooting information to help you isolate and correct problems that may occur with an INTUITY system integrated with a Northern Telecom SL-1, Meridian, and Meridian SL-1 switch. The problems outlined in this appendix refer only to problems related to the integration device and integration processes. If you do not find your problem in this appendix, refer to *INTUITY Platform Administration and Maintenance for Release 3.0*, 585-310-557, for more information or call your local service representative for assistance.

⇒ NOTE:

Each problem listed has both several possible reasons and several possible remedies. Try all the remedies before seeking additional information.

Switch Integration Device Problems

The SID does not power on.

Possible Reason:	The power cord connection may be loose or disconnected.
Remedy:	Make sure the power cord is firmly plugged into the wall outlet and the SID.
Possible Reason:	The wall outlet may not have power.
Remedy:	Make sure the circuit breaker for the wall outlet is <i>ON</i> .
Possible Reason:	The SID power switch may be set to the <i>OFF</i> position.
Remedy:	Turn the SID power switch to the <i>ON</i> position.
Possible Reason:	The SID may have a bad fuse.
Remedy:	Contact your service representative for assistance in checking the fuse.

The SID does not boot.

Possible Reason:	The power cord connection may be loose or disconnected.
Remedy:	Make sure the power cord is firmly plugged into the wall outlet and the SID.
Possible Reason:	The wall outlet may not have power.
Remedy:	Make sure the circuit breaker for the wall outlet is <i>ON</i> .
Possible Reason:	The SID power switch may be set to the <i>OFF</i> position.
Remedy:	Turn the SID power switch to the <i>ON</i> position.
Possible Reason:	The SID may have a bad fuse.
Remedy:	Call service representative for assistance in checking fuse.
Possible Reason:	The SID may have a bad CPU card.
Remedy:	Check all other possible reasons for the problem and perform the recommended actions. If you still have the problem, contact your AT&T service representative.

The SID LCD shows NDSP for every call the SID receives.

Possible Reason:	The Northern Telecom switch was not configured for the Digit Display Software (DDS) option (option 19).
Remedy:	Refer to Chapter 7, "Northern Telecom SL-1 Switch Administration", for instructions on configuring the switch for the DDS option.
Possible Reason:	The Northern Telecom switch Class of Service (CLS) does not contain the DDS code.
Remedy:	Refer to Chapter 7, "Northern Telecom SL-1 Switch Administration", for instructions on configuring the CLS for the DDS option.
Possible Reason:	The Northern Telecom modular connector is not properly connected.
Remedy:	Check the modular connector and refer to Chapter 4, "Hardware Installation", for instructions on the connector and the other cables.
Possible Reason:	The SID may have a bad CPU card.
Remedy:	Check all other possible reasons for the problem and perform the recommended actions. If you still have the problem, contact your AT&T service representative.

Calls are not integrated.

Possible Reason:	The Northern Telecom switch was not configured for the Digit Display Software (DDS) option (option 19).
Remedy:	Refer to Chapter 7, "Northern Telecom SL-1 Switch Administration", for instructions on configuring the switch for the DDS option.
Possible Reason:	The Northern Telecom SL-1 switch Class of Service (CLS) does not contain the DDS code.
Remedy:	Refer to Chapter 7, "Northern Telecom SL-1 Switch Administration", for instructions on configuring the CLS for the DDS option.
Possible Reason:	The cables between the SID and the INTUITY system platform may not be correctly connected.
Remedy:	Refer to Chapter 4, "Hardware Installation", to check the cable connections.

Continued on next page

Possible Reason:	The INTUITY system may not be correctly administered.
Remedy:	Refer to Chapter 6, "Administering INTUITY System for Northern Telecom Integration", to check the administration of the INTUITY system switch integration.
Possible Reason:	The SID may be administered incorrectly.
Remedy:	Refer to Chapter 3, "Switch Integration Planning" and Chapter 9, "Switch Integration Device Administration", to check the administration of the system. Make sure the channels and extensions are configured correctly.
Possible Reason:	The baud rate for the SID to INTUITY system connection may not be set correctly.
Remedy:	Refer to Chapter 3, "Switch Integration Planning" and Chapter 9, "Switch Integration Device Administration" to set the baud rate correctly.

Calls are integrated but the message waiting lamp (MWL) does not work.

Possible Reason:	The MWL may not be administered correctly on the INTUITY system.
Remedy:	Check the administration of the system using Chapter 6, "Administering INTUITY System for Northern Telecom Integration".
Possible Reason:	The packet format and MWL codes are set incorrectly on the switch.
Remedy:	Refer to Chapter 7, "Northern Telecom SL-1 Switch Administration" or Chapter 8, "Northern Telecom Meridian and Meridian SL-1 Switch Administration" to set the information correctly.
Possible Reason:	The cable between the SID and the INTUITY system may be defective.
Remedy:	Replace the cable.

Most calls end with the ABORT message.

Possible Reason:	The busy indicator administration may not be correct for the Northern Telecom switch.
Remedy:	Refer to Chapter 7, "Northern Telecom SL-1 Switch Administration" or Chapter 8, "Northern Telecom Meridian and Meridian SL-1 Switch Administration", for information on administering the busy indicator for the Northern Telecom switch.
Possible Reason:	The SID dial plan may not be administered correctly.
Remedy:	Refer to Chapter 3, "Switch Integration Planning" and Chapter 9, "Switch Integration Device Administration", to check the LTN/extension administration on the SID.
Possible Reason:	The INTUITY system ports are not dialing out or are being called directly.
Remedy:	Use the INTUITY System Monitor to observe the ports.
Possible Reason:	The INTUITY system IVC6 board may have a bad port.
Remedy:	Use the diagnostic procedures to check the voice ports on the boards.

PBX LED is red constantly.

Possible Reason:	The Northern Telecom modular cable is loose.
Remedy:	Tighten the cable connections.
Possible Reason:	The Northern Telecom modular cable may be defective.
Remedy:	Replace the cable. Refer to Chapter 4, "Hardware Installation", to connect the Northern Telecom modular cable to the SID and to the Northern Telecom switch.
Possible Reason:	The SID may contain a bad CPU card.
Remedy:	Check all other possible reasons for the problem and perform the recommended actions. If you still have the problem, contact your AT&T service representative.

The VM LED is yellow constantly (more than 5% packet transmission error).

Possible Reason:	The cable connecting the INTUITY system to the SID is loose.
Remedy:	Tighten the cable connections.
Possible Reason:	The Centrex communications port baud rate, parity, and other settings are not set correctly on the SID.
Remedy:	Refer to Chapter 3, "Switch Integration Planning" and Chapter 9, "Switch Integration Device Administration" for instructions on configuring the Centrex link.
Possible Reason:	The Centrex cable may be defective.
Remedy:	Replace the cable. Refer to Chapter 4, "Hardware Installation", for instructions on connecting the Centrex cable.

VM LED is red constantly (more than 50% packet transmission error).

Possible Reason:	The Northern Telecom modular cable is loose.
Remedy:	Tighten the cable connections.
Possible Reason:	The Centrex communications port baud rate, parity, and other settings are not set correctly on the SID.
Remedy:	Refer to Chapter 3, "Switch Integration Planning" and Chapter 9, "Switch Integration Device Administration", for instructions on configuring the Centrex link.
Possible Reason:	The Northern Telecom modular cable may be defective.
Remedy:	Replace the cable. Refer to Chapter 4, "Hardware Installation" for instructions on connecting the Northern Telecom modular cable to the SID and to the Northern Telecom switch.

Error Logs

The SID accumulates and records or *logs* error messages. The error messages can help solve problems and trace errors. You can access the error logs on the SID if you are authorized to use Level 1 security features.

The error logs also are available to trained support personnel while assisting with troubleshooting. Use the instructions in this procedure to log on to the SID and view the error logs.

1. Press **FUNC** to access the Main Menu as shown in the following example.

M-1	1-View	2-Utils	3-System
	4-Setup	5-Logs	6-Diags

2. Press **5** to select Logs. The Logs menu appears as shown in the following example.

LOGS	1-View	2-Purge
------	--------	---------

3. Press **1** to view the error logs. An error log screen appears, similar to the following example.

ER_LOG	No PBX Pkts in 60 Secs >	
	5%	I
	01/12 12:34 01/16	
	23:14	56

Read the following explanation of the error log to understand the information shown on an error log screen.

⇒ NOTE:

Your error log screens may appear differently than the screen shown in the example.

Value from Example	Field Description
16	The error code number used by AT&T support personnel when they access the SID through the remote diagnostic modem.
No PBX Pkts in 60 Secs.	Informational text that provides a brief description of the error. In the example, the SID displays an informational message indicating that no packets had been received from the switch in the previous 60 seconds.
I	A letter that indicates the error type and severity. The error messages can be either informational (I), warning (W), or error (E) types.
01/ 12_12:34	The date and time, rounded to the nearest minute, that the error or warning first occurred.
01/ 16_23:14	The date and time the error or warning last occurred.
56	The number of times the SID produced the error or warning between the first and last occurrence. The number tells you how frequently the errors have occurred. If a severe error occurs frequently, contact your support representative.

The SID can record many different errors. All errors are displayed in the same format, explained in the above example. You may use the up arrow and down arrow keys to scroll through the list of messages. The Table A-1 lists all SID error codes, description and type.

Table A-1. SID Error Codes

Code	Description	Type
1	VM Comm Error	W
2	No Free VM_IN Packets	W
3	Excess Data -- VM_IN Pkts	W
4	NULL MWI Pkt from VM_IN_Q	E
5	Bad MWI Pkt	W
6	No Free Centrex Pkts	W
7	NULL Cntrx Pkt from OUT_Q	E
8	MWI Dropped	E
9	Lockout Timeout	E
10	AP to CP Cmd Timeout	E
11	Kernel Error	E
12	Wait Light Timeout	W
13	Idle Task Not Enough Time	W
14	Intgr Stall, Reboot Sys	E
15	Line Dropped	W
16	No PBX Pkts in 60 Secs	I
17	System Startup	I
18	CP: LCA Not Programmed	E
19	System Powerdown	I
20	CP: > 5% Unknown Pkts	I
21	CP: Lost Carrier Detect	I
22	CP: > 50% Unknown Pkts	I
23	CP: Hardware Watchdog Tout	E
24	CP: Loss of CD > 15 Min	E
25	No CP activity in 30 Secs	E
26	CP: Gained Carrier Detect	I
27	Bad MWI Pkts > 50%	I
28	Bad MWI Pkts > 5%	I
29	CP: Unknown PBX Packet	E
30	Cntrx Not Xmting, Reboot	E

Continued on next page

Table A-1. SID Error Codes

Code	Description	Type
31	CP: Error Pkt Overflow	E
32	Hardware Watchdog Reboot	E
33	Integration Stop	I
34	Integration Start	I
35	No Display Info	E
36	Hardware Reset	I
37	VM Remote Reset	I
38	Software Reset	I
39	Boot Error: RTC	E
40	Boot Error: SCC	E
41	Boot Error: LD	E
42	Boot Error: Modem	E
43	Boot Error: DPRAM	E
44	VM Comm Error > 5%	E
45	VM Comm Error > 50%	E
46	CP Load Timeout	E
47	No Dial Tone	W
48	No Confirmation Tone	W
49	CP: Error Packet Rcvd	E
50	Modem Init Error	E
51	Software Upgrade Request	I
52	Remote Dial Failure	E
53	BBS Access Failure	E
54	Remote Upgrade Failure	E
55	Software Upgrade Complete	I
56	User Upgrade Abort	I

From time to time, you may want to purge your error logs. For example, if you suspect there is a problem with your integrated messaging system and you may want to set a baseline from which to measure. You can purge error logs on the SID if you have authorization to access Level 1 security features. Use the following instructions to purge error logs.

1. Press **[FUNC]** to access the Main Menu.
2. Press **[5]** to select Logs. The Logs menu appears as shown in the following example.

```
LOGS          1-View          2-Purge
```

3. Press **[2]** to select Purge. The following menu appears.

```
PURGE LOGS?      1-Yes      2-No
```

4. Press **[2]** to cancel the purge. The SID will save the error logs.
Press **[1]** to erase the error logs.

The SID starts to record new error messages after you purge the old logs. As the SID completes the purge, the following message appears on the screen.

```
Purging Logs...
```

Clearing Your Configuration

When adding voice mail ports or changing the switch dial plan, you may need to reconfigure the SID. In most cases, you can accomplish the task by editing the existing setup and restarting the system. If required, the SID provides the capability to restore the factory default settings.

To clear your configuration and restore the factory setting, use the following instructions.

1. Press **[FUNC]** to access the Main Menu

2. Press **(4)** to select the Setup option. The Setup menu appears as shown in the following example.

SETUP	1-Params	2-Ports	3-Clear
	4-Advanced		

3. Press **(3)** to select Clear. The Clear Setup menu appears as shown in the following example.

CLEAR SETUP?	1-Yes	2-No
--------------	-------	------

4. Press **(2)** to cancel the Clear Setup menu and return to Setup.
5. Or, press **(1)** to restore the factory default settings. When you clear your configuration, you remove all global parameter, dial plan, logical terminal number, and Centrex serial port information. The contrast and Enhanced MWI handling settings are restored to the factory defaults. The only information preserved are the error logs and statistical tables. Using the Clear command stops the integration. You must reconfigure and start the system to integrate calls.

Testing the Northern Telecom Station Set Emulation

If the SID integration does not operate properly after administering the system, use the procedure in this section to test the SID's Northern Telecom station emulation.

To test the Northern Telecom station set emulation, perform the following tasks.

- Receive a call on the SID
- Place a call from the SID
- Transfer a call with the SID
- Light a message waiting lamp with the SID

Use the instructions in this section to test the SID Northern Telecom station set emulation.

1. Press **[FUNC]** to access the Main Menu.

The Main Menu appears as shown in the following example.

M-1	1-View	2-Utils	3-System
	4-Setup	5-Logs	6-Diags

2. Press **[6]** on the SID keypad to access the Diagnostics menu.

The Diags menu appears as shown in the following example.

DIAGS	1-Emulator	2-Centrex
-------	------------	-----------

3. Press **[1]** on the SID keypad to access the telephone emulator screen. The EM screen appears as shown in the following example.

EM	00000000	oooooooooooooooooooooooooooo	000
	00000		

The top line of the EM screen contains the following sections:

- The first eight characters show the state of the call appearance lamps on the Northern Telecom set.
- The next 24 characters show the state of the lamps on the busy indicator line appearances.
- The last three upper-case characters show the state of the MIK, MCK, and transfer key lamps. The bottom line of the EM screen contains the following sections:
 - The first five characters represent the state of the busy queue call appearance lamps on the Northern Telecom set.
 - The SID uses the remainder of the bottom line to *echo* or mirror the display string usually shown in the Northern Telecom set.

When the switch updates the lamp status on the Northern Telecom station set, the EM screen changes. Use Table A-2 to understand the meanings of the EM screen display characters.

Table A-2. Lamp Status for Appearance Fields and Feature Buttons

Character	Lamp Status: Appearance Field and Feature Buttons
O or o	dark - no activity
F or f	flashing - ringing
W or w	flicker steady - hold or transfer
S or s	steady - selected or off-hook

In addition to viewing the phone activity, the EM screen also allows you to manipulate the phone. Table A-3 shows the SID keys and the action produced on the EM screen.

Table A-3. SID Key Functions

Key	Action
1,2,3,4,5,6,7,8,9,0	Data Entry
*,#	Data Entry
Func	Return to the main menu
Mode	Key code prefix command
Up arrow	Go off hook
Down arrow	Go on hook
Left/Right arrows	No action
Enter	Toggle the speaker on or off

By using the SID's ability to display the telephone state and to manipulate the telephone, you can perform four tests to determine if the SID is properly installed as a Northern Telecom digital station set. Continue to the next procedure, "Test One: Receive a Call at the SID," to perform the first test.

Test One: Receiving a Call at the SID

Perform the first test by placing a call from a test subscriber station to the INTUITY system.

1. Select a subscriber to use for the test.
2. From the test subscriber's phone, dial the extension number assigned to the SID. After dialing the number, the EM screen appears as shown in the following example.

```
EM   F0000000  oooooooooooooooooooooooooooooo  000
      00000
```

The first call appearance, F in the example, has changed to a ringing state. This indicates that a call is available on the selected appearance. You can answer the call by pressing (MODE) (0) (1) to go off-hook. The EM screen changes as shown in the following example.

```
EM   S0000000  oooooooooooooooooooooooooooooo  OSO
      00000      500
```

If you speak into the test subscriber's handset, you can hear the voice through the SID's speaker. To end the test, press (MODE) (1) (7) to hang up the call.

If any of the test fails, perform the same troubleshooting procedures on the switch that you would perform if a Northern Telecom set was connected instead of the SID. Continue to the next test procedure, "Test Two: Place a Call from the SID."

Test Two: Placing a Call from the SID

In the second test, you place an outgoing call from each call appearance. To press a button on the phone that is not obvious on the SID keypad, use Table A-4 to determine the correct SID key to use for the phone set key. To use the keys shown in the table, you must first press **MODE**.

Table A-4. SID Key Mapping for SL-1 Set Keys

Press MODE then	To Emulate
01	RNA call appearance 1
02	RNA call appearance 2
03	RNA call appearance 3
04	RNA call appearance 4
05	RNA call appearance 5
06	RNA call appearance 6
07	RNA call appearance 7
08	RNA call appearance 8
09	Busy call appearance 1
10	Busy call appearance 2
11	Busy call appearance 3
12	Busy call appearance 4
13	Busy call appearance 5
14	Transfer
15	MIK
16	MCK
17	Release
18	Hold

1. Press **MODE** **0** **5** to initiate a call from the fifth appearance.
2. Press **MODE** **0** **1** to place the SID in an off-hook state.

After pressing the keys, you hear dial tone and the EM screen changes as shown in the following example.

```
EM      0000S000  000000000000000000000000  000
          00000
```

- Use the SID to dial the test subscriber's extension. For example, if the subscriber's extension was 500, you would press **(5) (0) (0)**.

After dialing the number, the EM screen changes to the screen shown in the following example. The test subscriber's phone should be ringing.

EM	0000S000	oooooooooooooooooooooooooooo	000
	00000		500

- Press **(MODE) (1) (7)** to release the call.

⇒ NOTE:

Use this test procedure on each of the call appearance buttons.

Continue to the next test procedure, "Test Three: Transfer a Call with the SID."

Test Three: Transferring a Call with the SID

The third test transfers a call using the SID. To perform the test, place a call to the SID then transfer the call. You need two test subscriber extensions to perform the test. Use the following instructions to complete the test.

- Using the test subscriber telephone, dial the extension number of the SID. The EM screen appears as shown in the following example.

EM	F0000000	oooooooooooooooooooooooooooo	00
O			
	00000		

- Answer the call on the SID by pressing **(MODE) (0) (1)** on the SID keypad to go off-hook. The EM screen appears as shown in the following example.

EM	S0000000	oooooooooooooooooooooooooooo	000
	00000		500

- Transfer the call by pressing **(MODE) (1) (4)**. You hear a dial tone and the screen appears as shown in the following example.

EM	W0000000	oooooooooooooooooooooooooooo	OOS
	00000		500

The character for the first line appearance, W, shows that the line appearance is now winking and waiting for a transfer.

- Using the SID keypad, dial the extension of the second test subscriber.
For example, if the second test subscriber extension is 501, dial **5 0 1**.

After entering the extension, the EM screen changes as shown in the following example.

```
EM      W0000000  00000000000000000000000000000000  OOS
          00000          501
```

- Release the transfer by pressing **MODE 1 4**.

The switch completes the transfer. The first subscriber extension is now connected to the second subscriber extension and not the SID. After the transfer, the EM screen appears as shown in the following example.

```
EM      00000000  00000000000000000000000000000000  000
          00000
```

You have completed the transfer test. Continue to the next test procedure, "Test Four: Lighting a Message Waiting Lamp with the SID."

Test Four: Lighting a Message Waiting Lamp with the SID

The fourth test lights a message waiting lamp through the SID. Use the following instructions to complete the test.

- At the EM screen, press **MODE 1 5**, the SID key combination for the MIK key on the Northern Telecom set. The EM screen appears as shown in the following example.

```
EM      00000000  00000000000000000000000000000000  S00
          00000
```

- Dial the extension of the test subscriber. For example, if the test subscriber extension is 500, press **5 0 0**. After you dial the extension, the EM screen appears as shown in the following example.

```
EM      0000S000  00000000000000000000000000000000
S00
          00000          500
```

3. Use the MIK key again by pressing (MODE) (1) (5) on the SID keypad. The message waiting lamp will be turned on.
4. To turn the message waiting lamp off, repeat steps 1 through 3, but use the MCK key, or (MODE) (1) (6) on the SID keypad.

If you completed all four tests without any problems, the Northern Telecom station emulation is configured correctly and ready for the integration. If any of the tests did not work correctly, consult with the switch technician to confirm that the Northern Telecom digital station set emulation is configured properly.

⇒ NOTE:

If you have multiple SIDs to support an INTUITY system larger than eight ports, perform the emulation tests on each SID.

Special Processing for Message Waiting Lamps

⇒ NOTE:

This procedure, enabling enhanced WMI, can be performed only by trained AT&T software specialists.

The SID can buffer up to 4000 individual message waiting transactions and wait for small intervals of time to perform the transactions. Incoming calls receive a higher priority. If you use the Statistics View and discover that the SID is holding a large number of MWI transactions, you can perform one of the following actions.

- You can alter the MWI Interleave Factor.
By decreasing the MWI Interleave Factor, the speed of transactions out of the queue increases, but call processing speed decreases. See the documentation supplied with your switch for more information.
- You can use the SID's enhanced MWI processing. Continue with the instructions in this section to use the enhanced MWI processing.

On a very active voice mail system, a subscriber can receive multiple messages in a very short period of time. Each message turns on the MWI which quickly increases the size of the buffer. Enhanced MWI handling ensures that only a single entry in the MWI queue is used for a specific subscriber; this reduces the queue loading.

For example, the INTUITY system receives three MWI requests in rapid succession. The first turns on John Smith's lamp, the second turns off J. Doe's lamp, and the third turns on John Smith's lamp. Each is a valid request and each is queued for processing. John Smith's lamp does not need to be lit twice, however.

Enhanced MWI processing defaults to *disabled*. Therefore, the SID queues and processes all MWI requests in sequence. In the example above, all three requests would be processed and John Smith's lamp would be lit twice in quick succession.

If you enable enhanced MWI processing, the MWI command for John Smith is sent to the queue as a normal request. Any future requests for John Smith overwrite the first, ensuring that John's lamp is only turned on once and set to the state that the voice messaging system expects at the time of the operation. When enhanced MWI processing is activated, the number of requests made by the INTUITY system can be considerably larger than the actual number of transactions undertaken by the SID.

Use the following instructions to enable the enhanced MWI processing feature.

1. Press **(FUNC)** on the Main Menu to access the Setup menu as shown in the following example.

M-1	1-Params	2-Ports	3-Clear
	4-Advanced		

2. Press **(4)** to select the Advanced option. The Advnc screen appears as shown in the following example.

ADVNC	MWI Compress:	OFF
-------	---------------	-----

3. Use the left and right arrow keys to turn MWI Enhanced processing to *On*.
After enabling MWI Enhanced processing, the SID automatically begins to use the feature.
You do not have to save or restart the configuration.

Summary

This appendix provides troubleshooting information that helps isolate and correct problems that may occur with an INTUITY system integrated with a Northern Telecom switch. Appendix B provides information concerning real-time viewing of the integration process.

Using Views During Integration

B

Introduction

The SID provides you with three real-time views of the integration process:

- View mode
- Statistics mode
- Metrics mode

Each mode shows different information in a common screen layout. A typical view mode appears as shown in the following example.

```
VW_MON          Line:020Port: 02-351    OK
500  501
```

View modes remain on the screen, constantly changing as calls and message waiting transactions are processed. Use the information in this appendix to access and use the view modes.

View Mode

The first option on the View menu is the View mode. The View mode permits you to observe transactions as they occur at the SID. View mode is a useful tool that provides condensed, real-time reporting of all switch integration transactions.

View mode is set as the default display mode for a configured SID. When the system first boots up and is idle, the display appears as shown in the following example.

```
VW_MON Idle
```

Use the following instructions to access the View mode.

1. At the Main Menu, press **1** to select the View option. The View menu appears as shown in the following example.

```
VIEW          1-Monitor    2-Stats      3-Metrics
```

2. Press **1** to select the Monitor option and access the View mode screen as shown in the following example.

```
VW_MON          Line:02 Port:  02-351      OK
500  501
```

3. To exit the View mode screen, press **FUNC** to return to the Main Menu.

When transactions are being processed, the screen updates continuously. The following descriptions explain the contents of each field in the example View mode screen. Each type of view screen contains similar fields.

Line:02	This field indicates the line appearance button from which the SID processed the call.
Port:0002-35 1	This field shows the LTN sent to the INTUITY system and the extension to which the call was transferred. The SID uses the LTN/extension pairing you administered in Chapter 9, "Switch Integration Device Administration".
OK	The field provides the status of the call transfer process.
	<ul style="list-style-type: none"> ■ OK indicates that the SID successfully transferred the call to the INTUITY system.
	<ul style="list-style-type: none"> ■ RTRY indicates that the SID is again attempting the transfer operation.
	<ul style="list-style-type: none"> ■ ABOR indicates that the caller disconnected during the transfer.
	<ul style="list-style-type: none"> ■ FAIL indicates that the SID could not transfer the call.
	<ul style="list-style-type: none"> ■ NDSP indicates that the SID could not retrieve display information from the Northern Telecom set.
500 501	This field shows a duplicate of the Northern Telecom display. In the example, the field indicates that extension 500 called extension 501. Extension 501 was busy or unanswered and the SID transferred the call to the INTUITY system. The SID also transfers the called party extension number to the system.

When the SID processes a message waiting command, the screen appears as shown in the following example.

VW_MON	MWI SET	Ext 500	OK
--------	---------	---------	----

The example indicates that the message waiting lamp at extension 500 is turned on. The MWI field can contain the following values.

- SET — Indicates that the MWI is turned on.
- CLEAR — Indicates that the MWI is turned off.
- RTRY — Indicates that the MWI process is being repeated.
- FAIL — Indicates that the MWI process failed.

If all of the analog ports on the INTUITY system are busy, the View mode screen appears as shown in the following example.

```
VW_MON      Line:01 Waiting for Port
```

As soon as an analog port becomes available, the SID processes the call and the View mode screen updates. The SID processes as many MWIs as possible when waiting for an open port. The View mode screen appears as shown in the following example.

```
VW_MON      Line:01 Waiting for Port
             MWI Clear Ext
             501                      OK
```

If you attempt to use the view monitor before configuring the SID, the warning shown below appears on your screen. You must first configure your system before you use the view modes.

```
VW_MON      Integration Stopped
```

Using Statistics Mode

Use the following instructions to use the Statistics monitor mode.

1. Access the View menu as described in the previous section.
2. Press **(MODE)**.
3. Press **(2)** to select the Stats option. You see the following screen.

```
VW_STA      Calls: 1024 Inc: 45 Abnd: 123
             MWIs: 988 Inc: 12 Q: 234-06%
```

The screen updates continuously, showing the total number of calls processed and the number of bad packets received from the switch. The screen also shows the total number of message waiting commands processed, the number of bad MWI packets received from the INTUITY system, and the total number of MWI commands residing in the SID's queue. Use the Statistics mode to monitor activity on your integrated system.

Using Metrics Mode

Use the following instructions to use the Metrics monitor mode.

1. Access the View menu as described in the previous section.
2. Press **MODE** .
3. Press **3** to select the Metrics option. You see the following screen.

VM_MET	Calls ATQ	3	Min:	2	Max:	8
	Calls/Hr	980	MWIs/Hr:			670

This display updates occasionally, showing performance measurements for both the SID's call processing and message waiting activities. The top line shows a running average time in queue for each call appearing at the SID and the minimum and maximum time in queue for all calls measured. The measurements are shown in seconds. On the bottom line, you can observe the current running average for calls processed per hour and message waiting commands processed per hour. Use the Metric mode to monitor the performance characteristics of your integrated system.

Using Diagnostic Monitors

You can use two types of diagnostic views, emulation and monitor, on the SID. You must have access to Level 1 security to use the views. The first view, emulation, is the telephone emulator described in Appendix , "Troubleshooting and Error Logs", in the "Test the SID Northern Telecom Station Set Emulation" section. When the integration is stopped, the EM screen operates as an active emulator that allows you to interact and use the SID as a telephone.

You access the second type of diagnostic view, monitor, when the integration is operating. The MN screen, shown in the example below, acts as a passive monitor and allows you to view the activity of the Northern Telecom display and the MWI lamp updates. Use the following instructions to use the diagnostic monitor view.

1. Press **FUNC** to access the Main Menu.
2. Press **6** to select the Diagnostic option. The following screen appears..

DIAGS	1-Emulator	2-Centrex
-------	------------	-----------

3. Press **(1)** to select the Emulator option. You see the following screen.

```

MN      FFFW0000  ooooooooooooooooooooooooooooo  OOS
                00000          500  501
    
```

The name of the screen, MN, stands for *monitor*. If you saw the name EM on the screen, the integration would not be operating. Similar to the EM screen, the top line of the screen shows you the state of the call appearance lamps, feature buttons, and the message waiting lamps. The bottom line of the screen *echoes* or mirrors the 40 character display string shown on the Northern Telecom. Use Table B-1 to understand the display as you use the diagnostic monitor.

Table B-1. Diagnostic Monitor Display

Character	Lamp Status: Appearance Field and Feature Buttons
O or o	dark - no activity
F or f	flashing - ringing
W or w	flicker steady - hold or transfer
S or s	steady - selected or off-hook

Clearing Statistical Information

The SID accumulates data that supports the Statistics and Metrics views. You may wish to purge the data and begin taking new measurements, especially when you add subscribers, analog voice mail ports, or when subscribers' usage habits change. To clear the data, use the following instructions.

1. Log on to Level 1 security.

For instructions on logging on to the security level, refer to Chapter 9, "Switch Integration Device Administration".

2. Press **MODE** at the View action screen.
3. Press **5** to select Clear and remove the old statistics. After you press the key, the following message appears on the screen.

Clearing Statistics...

The SID clears all statistical information. After a few seconds, the display clears and the SID returns to the View menu.

Switch Administration for INTUITY Lodging

C

Introduction

This chapter describes the switch administration you need to complete if you have INTUITY Lodging. Read the information and configure your switch as required.

Hunt Group Administration

A hunt group is a set of extension numbers assigned to another phone number. When a call is received by this number, a programmed search of the hunt group is made and the call is forwarded to a member of the hunt group that is not busy. For example, when two calls are made to the designated phone number, both are forwarded to two free extensions in the hunt group. Hunt groups are a commonly-used switch feature. Your switch probably has some hunt groups already assigned.

In order to configure a hunt group for calls being received by the INTUITY system you must:

1. Administer your switch to create a hunt group for your INTUITY system.
2. Have the switch ports that terminate the hunt group extensions wired to the voice ports on the INTUITY platform. Wire them as described in one of the following documents, depending on your system:
 - INTUITY™ MAP/5 Hardware Installation, 585-310-146
 - INTUITY™ MAP/40 Hardware Installation, 585-310-138
 - INTUITY™ MAP/100 Hardware Installation, 585-310-139

Message Retrieval Administration

The message retrieval number is the telephone number that subscribers call to retrieve voice mail messages. Like other calls to the INTUITY system, message retrieval calls are ultimately forwarded to the INTUITY hunt group.

Message Retrieval in Lodging Systems without AUDIX

Provide the INTUITY system's message retrieval number to your subscribers.

Message Retrieval in Systems Shared with AUDIX

There must be two message retrieval numbers in a shared system, one to retrieve from the AUDIX application, and one to retrieve from the Lodging application.

Retrieval from the AUDIX Application

Provide the INTUITY system message retrieval number to your subscribers for the AUDIX application.

Retrieval from the Lodging Application

1. Administer on your switch an extension number *not* associated with a switch port. (These are often called *phantom* or *dummy* numbers.) This number becomes the Lodging message-retrieval number for your system.
2. Configure the Lodging message retrieval number so that the INTUITY hunt group covers all calls.
3. Provide the Lodging message retrieval number to your subscribers for the Lodging application.

Alternate Message Retrieval Method

Guests can also be allowed to log on from a remote phone to any mailbox for which they have a password. A guest will call a number to access this service then enter an extension number and a password to retrieve messages in the mailbox.

To provide this service:

1. Administer on your switch a phantom number. This is the message retrieval number used from a remote phone.
2. Configure the phantom number so the INTUITY system hunt group covers all calls.
3. If your switch has password capability, assign a password to the new extension.
4. Assign to the new extension, the service: "ldg_ni_vm."

- a. Log on to the INTUITY system as sa or craft.
- b. From the INTUITY Administration menu select the following sequence:.



>Voice System Administration



Voice Equipment

- c. From the Voice Equipment screen, press **CHG-KEYS** (F8) then **ASSIGN** (F3).
 - d. Select Services to Called Numbers from the Assign menu.
 - e. Press **CHOICES** (F2) and select ldg_ni_vm.
 - f. Enter the called number that was administered on the switch for this purpose.
 - g. Press **SAVE** (F3). A command-output screen appears confirming your choice.
 - h. Press **CANCEL** (F6) three times to exit to the Voice Equipment screen.
5. If the phantom extension is to be accessed from outside your system, assign the extension to a Direct-Inward-Dialing number.
 6. Provide the Lodging message retrieval number to your subscribers for the Lodging application.

Voice Mail Administration

Voice mail is enabled when the switch sends a guest's call to a coverage path. The following procedure, however, provides a separate number that can be used at any time to send voice mail to a guest.

To provide this service:

1. Administer on your switch a phantom number. This number is used to send voice messages to your subscribers.
2. Configure the phantom number so that the INTUITY system hunt group covers all calls.
3. Assign to the new extension, the service: "ldg_ni_ca" as follows:

- a. Log on to the INTUITY system as sa or craft.
- b. From the INTUITY Administration menu select the following sequence:.

>Voice System Administration

Voice Equipment

- c. From the Voice Equipment screen, press **CHG-KEYS** (F8) then **ASSIGN** (F3).
 - d. Select Services to Called Numbers from the Assign menu.
 - e. Press **CHOICES** (F2) and select ldg_ni_ca
 - f. Enter the called number of your choice.
 - g. Press **SAVE** (F3). A command-output screen appears confirming your choice.
 - h. Press **CANCEL** (F6) three times to exit to the Voice Equipment screen.
4. If the phantom extension will be accessed from outside your system, assign the extension to a Direct-Inward-Dialing number.
 5. Provide the Lodging voice mail number to subscribers for the Lodging application.

Call Coverage Path

A coverage path directs the switch to transfer unanswered calls to a hunt group, to a service, or to another extension.

When a call goes to coverage, the switch forwards the called number to the INTUITY system. The INTUITY system detects that the called number is administered as a specific subscriber's extension and treats the call as one to be answered and recorded. Depending on how the extension is configured, the call may be answered by either the AUDIX or the Lodging application.

1. Administer your switch to assign call coverage for each guest's extension to the associated INTUITY system hunt group number.

Do-Not-Disturb

Look for features on your switch that adapt themselves especially well to lodging situations. One example is the *Do not Disturb* feature on some switches. This feature makes it possible to request that a particular extension not receive calls until a specified time. At the specified time, the switch automatically deactivates the feature and allows calls to terminate normally at the extension.

If this extension is covered by the INTUITY system hunt group, then calls received while *Do-not-Disturb* is active will be recorded for later retrieval.

Cut-to-Service

A cut-to-service of the INTUITY Lodging application amounts to changing the coverage path for each guest extension to the INTUITY system hunt group. The associated system must be completely installed before you cut the INTUITY Lodging application into service. Furthermore, all INTUITY system initial administration, associated switch administration, and acceptance tests must be completed.

Some switching systems make it possible to group these extensions as a set allowing the coverage path to be changed simultaneously. Most switching systems permit changing the coverage path for guest extensions one extension at a time. You may use either method.

Gradual Cut-to-Service

Using this cut-to-service strategy, enter guests into the INTUITY Lodging system as they check in. Only new guests, not current guests, receive INTUITY Lodging services.

The advantages of this method include:

- Attendants can learn the new system while only a portion of guests are also learning to use it.
- Guests do not have to learn both the previous and the new systems. Current guests use the previous system; new guests use the INTUITY Lodging system.
- Custom passwords and language options can be assigned to each guest as the guest is checked in.

Gradually cut-to-service as follows:

1. Administer your switch to send the guests' telephone call coverage to the INTUITY system hunt group.
2. Check in each new guest as described in *INTUITY Lodging Administration and Feature Operations, 585-310-559*.

One-Step Cut-to-Service

On switches where a coverage path is separately defined and then applied to a class of stations, assign all guest stations to INTUITY Lodging at once.

Using this cut-to-service strategy, all guest stations are changed to INTUITY Lodging at the same time.

The advantages of this method include:

- Since INTUITY Lodging is brought up in one step, attendants must cope with only one call-answering system at a time.
- Cut-to-service is over at once. Multiple messaging systems can confuse the guests.
- Reasonable coverage options can be assigned to all guests at once; administration can be modified for the few that have unusual requirements.

Cut-to-service as follows:

1. Use INTUITY Lodging to administer the options that guests require.
2. Make sure guests and attendants know when the change will take place and have some idea of how the new service operates.
3. On your switch, determine the coverage path that applies to your guests' stations.
4. On your switch, set the new coverage path for your guests' stations to the INTUITY system hunt group.

Summary

You have completed the switch integration tasks necessary to configure your INTUITY system for the Lodging application.

Abbreviations

A

AC

alternating current

ACD

automatic call distribution

ADAP

administration and data acquisition package

ADU

asynchronous data unit

ALT

assemble load and test

AMIS

Audio Messaging Interchange Specification

AT&T

American Telegraph and Telephone

AUDIX

Audio Information Exchange

AWG

American wire gauge

B

BIOS

basic input/output system

bps

bits per second

BRI

basic rate interface

BSC

binary synchronous communications

BTU

British thermal unit

C

CCA

call classification analysis

CDH

call data handler process

CELP

code excited linear prediction

CIC

customer information center

CICS

customer information control system

CNT

count

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

CPID

calling party identification pad

CPU

central processing unit

CTS

clear to send

Abbreviations

D

DAC	dial access code
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
DN	directory number
DNIS	dialed number identification service
DSP	digital signal processor
DSU	data service unit
DTE	data terminal equipment
DTMF	dual tone multifrequency
DTR	data terminal ready

E

EIA	Electronic Industries Association
------------	-----------------------------------

ESD

electrostatic discharge

ESS

electronic switching system

EXT

Extension

F

FACE

framed access command environment

FIFO

first-in first-out

FOOS

facility out of service

FMLI

form and menu language interpreter

FKY

function key

G

GBCS

Global Business Communications Systems

H

Hz

hertz

I

IDI

isolating data interface

IMG

Interface Module Group

INADS

initialization and administration system

Abbreviations

I/O

input/output

IRQ

interrupt request

ISDN

integrated services digital network

IVC6

integrated voice CELP card (6 channels)

K

Kbps

kilobits per second

Kbyte

kilobyte (1024 bytes)

kHz

kilohertz

L

LCD

liquid crystal display

LED

light-emitting diode

LENS

logical equipment number

LTN

logical terminal number

LWC

leave word calling

M

MANOOS

manually out of service

Mbyte

megabyte (one million bytes)

MCI

Message Center Interface

MD

Message Desk

MHz

megahertz

MMG

multi-module group

modem

modulator/demodulator

MPDM

modular processor data module

ms

millisecond

MT

maintenance (INTUITY™ software component)

MTBF

mean time between failures

MWI

message-waiting indicator

N

NW

INTUITY AUDIX Digital Networking

O

OA&M

operations, administration, and maintenance

OP

operate

OS

operating system

P

PBX

private branch exchange

PC

power converter or personal computer

Abbreviations

PDM
processor data module

PEC
price element code

POST
power-on self test

R

RAM
random-access memory

REN
ringer equivalence number

RMV
remove

RNA
ring-no-answer

ROM
read-only memory

RSC
route restriction class

RTS
request to send

RTU
right to use

S

SCSI
small computer systems interface

SID
switch integration device

SFC
service feature class

SFI
service feature index

SIMM
single in-line memory module

SMDI
simplified message desk interface

SMSI
simplified message service interface

STN
station

STRC
Sales and Technical Resource Center

SW
switch integration (INTUITY software component)

SYS
system

T

TDD
telecommunications device for the deaf

TDM
time division multiplex

TEC
telephone class

TN
tenant number

T/R
tip/ring

TRIP
tip/ring input process

TSC
AT&T's Technical Services Center

U

UCD
uniform call distribution

UMG
ultra-module group

UPS
uninterruptible power supply

V

VM

INTUITY AUDIX Voice Messaging

VP

voice platform (INTUITY software component)

VR

INTUITY Intro Voice Response

VROP

voice response output process

Glossary

1A ESS Switch

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

5ESS Switch

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

A

accessed message

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

ACD

See *automatic call distribution*.

activity menu

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

ADAP

See *administration and data acquisition package*.

address

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

adjunct

A separate system closely integrated with a switch, such as an INTUITY system or a call management system (CMS).

administration

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

administration and data acquisition package (ADAP)

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

ADU

See *asynchronous data unit*.

alarm log

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

alarms

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

alphanumeric

Alphabetic, numeric, or punctuation symbols.

AMIS

See *Audio Messaging Interchange Specification*.

AMIS Prefix

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

ampere (amp)

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

analog networking

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

analog signal

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

announcement fragment

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

antistatic

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

asynchronous communication

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

asynchronous data unit (ADU)

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

asynchronous transmission

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

Audio Messaging Interchange Specification (AMIS)

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

Audio Information Exchange (AUDIX)

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

audit

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

AUDIX

See *Audio Information Exchange*.

automated attendant

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

automatic call distribution (ACD)

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

automatic message scan

An INTUITY AUDIX feature that allows subscribers to scan all message headers and messages at the touch of two buttons.

B

background testing

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

backup

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

basic input/output system (BIOS)

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

baud

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

baud rate

Transmission signaling speed.

basic call transfer

A switchhook-flash method used to send the INTUITY AUDIX transfer command over analog voice ports.

basic rate access

See *basic rate interface*.

basic rate interface (BRI)

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

binary digit (bit)

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

binary synchronous communications (BSC)

A character-oriented synchronous link protocol.

BIOS

See *basic input/output system*.

bit

See *binary digit*.

body

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

boot

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

boot filesystem

The filesystem from which the system loads its initial programs.

bps (bits per second)

The number of binary units of information (1s or 0s) that can be transmitted per second. Mbps refers to a million bits per second; Kbps refers to a thousand bits per second.

BRI

See *basic rate interface*.

broadcast messaging

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

BSC

See *binary synchronous communications*.

buffer

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

bulletin board

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

bus

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

busy-out/release

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

byte

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

C

call-answer

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

callback number

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

call coverage

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

call-distribution group

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

call vectoring

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

card cage

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

cartridge tape drive

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

central office (CO)

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

central processing unit (CPU)

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

channel capacity

A measure of the maximum bit rate through a channel.

class of service (COS)

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

clear to send (CTS)

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

CO

See *central office*.

collocated

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

collocated adjunct

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

comcode

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

command

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

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*.

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.

CTS

See *clear to send*.

D

database

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

data communications equipment (DCE)

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

data communications interface unit (DCIU)

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

data link

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

data service unit (DSU)

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

data set

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

data terminal equipment (DTE)

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

data terminal ready (DTR)

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

DBP

See *data base processor*.

DCE

See *data communications equipment*.

DCIU

See *data communications interface unit*.

DCP

See *digital communications protocol*.

DCS

See *distributed communications system*.

debug

See *troubleshoot*.

dedicated line

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

default

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

delivered message

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

demand testing

Testing performed on request (usually by service personnel).

diagnostic testing

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

dial-ahead/dial-through

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

digital

Discrete data or signals such as 0 and 1.

digital communications protocol (DCP)

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

digital networking

A method of transferring voice mail messages between voice messaging systems in a digital format. See also *INTUITYINTUITY AUDIX Digital Networking*.

DIP switch

See *dual in-line package switch*.

direct memory access (DMA)

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

directory

An INTUITY AUDIX feature allowing you to hear a subscriber's name and extension after typing **N at the activity menu. Also, a group of related files accessed by a common name in software.

display terminal

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

distributed communications system (DCS)

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

distribution list

See *mailing list*.

DMA

See *direct memory access*.

DSR

See *data set ready*.

DSU

See *data service unit*.

DTE

See *data terminal equipment*.

DTR

See *data terminal ready*.

dual in-line package (DIP) switch

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

E

electrostatic discharge (ESD)

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

enabled/disabled

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

enhanced call transfer

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

enhanced serial data interface

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

equipped/unequipped

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

error message

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

errors

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

escape to attendant

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

ESD

See *electrostatic discharge*.

events

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

F

field

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

file

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

filename

Alphanumeric characters used to identify a particular file.

file redundancy

See *mirroring*.

filesystem

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

F key

See *function key*.

format

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

function

Individual steps or procedures within a voice mailbox activity.

function key (F key)

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

G

Generic 1, 2, or 3

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

generic tape

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

guest password

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

H

hard disk drive

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

hardware

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

header

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

help

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

hertz (Hz)

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

host switch

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

hunt group

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

Hz

See *hertz*.

I

IDI

See *isolating data interface*.

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 card

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.

interrupt request (IRQ)

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

INTUITY AUDIX Digital Networking

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

I/O address

input/output address.

IRQ

See *interrupt request*.

ISDN

See *integrated services digital network*.

isolating data interface (IDI)

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

J

jumper

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

K

Kbps

kilobits per second. One thousand bits per second.

L

label

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

LCD

See *liquid crystal display*.

leave word calling (LWC)

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

LED

See *light emitting diode*.

light emitting diode (LED)

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

liquid crystal display (LCD)

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

load

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

local AUDIX machine

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

local installation

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

local network

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

login

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

login announcement

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

M

magnetic peripherals

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

mailbox

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

mailing list

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

maintenance

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

major alarm

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

megabyte

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

memory

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

message categories

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

message delivery

An optional INTUITY feature that permits subscribers to send recorded 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-waiting indicator (MWI)

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

minor alarm

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

mirroring

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

modem

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

modular

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

modular processor data module (MPDM).

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

MPDM

See *modular processor data module*.

MWI

See *message-waiting indicator*.

N

networking

See *INTUITY AUDIX Digital Networking*.

networking prefix

A set of digits that identifies an INTUITY machine.

not deliverable message

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

O

on-line help

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

operating system (OS)

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

option

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

OS

See *operating system*.

outcalling

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

outgoing mailbox

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

P

parallel transmission

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

password

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

PBX

See *private branch exchange*.

PDM (processor data module)

See *modular processor data module (MPDM)*.

peripheral device

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

personal directory

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

pinouts

The signal description per pin number for a particular connector.

port

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

priority messaging

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

priority outcalling

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

private branch exchange (PBX)

A private switching system. See also *switch*.

private mailing list

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

private messaging

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

processor data module (PDM)

See *modular processor data module (MPDM)*.

processor interface (PI)

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

programmed function key

See *function key*.

protocol

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

public mailing list

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

R

RAM

See *random access memory*.

random access memory (RAM)

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

reboot

See *boot*.

remote access

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

remote installation

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

remote network

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

remote service center

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

remote subscribers

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

remote terminal

A terminal connected to a computer over a phone line.

REN

See *ringer equivalence number*.

reply loop escape

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

reply to sender

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

request to send (RTS)

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

restart

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

restore

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

retention time

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

ringer equivalence number (REN)

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

RTS

See *request to send*.



S

sales representative

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

SCA

See *switch communications adapter*.

scan

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

scheduled delivery time

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

SCSI

See *small computer system interface*.

serial transmission

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

shielded cables

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

SIMMs

See *single in-line memory modules*.

simplified message service interface (SMSI)

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

single in-line memory modules (SIMMs)

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

small computer systems interface (SCSI)

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

SMSI

See *simplified message service interface*.

split

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

subscriber

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

surge

A sudden voltage rise and fall in an electrical circuit.

surge protector

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

switch

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

switched access

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

switch hook

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

switch hook flash

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

switch network

Two or more interconnected switching systems.

synchronous communication

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

synchronous transmission

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

system configuration

See *configuration*.

T

tape cartridge

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

tape drive

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

terminal

See *display terminal*.

terminal type

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

terminating resistor

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

tip/ring

A term used to denote the analog telecommunications interface.

tone generator

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

traffic

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

translations

Software assignments that tell a system what to expect on a certain voice port or the data link, or how to handle incoming data. They customize the INTUITY system and switch features for users.

troubleshoot

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

U

UCD

See *uniform call distribution*.

undelivered message

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

Unequipped

See *equipped/unequipped*.

unfinished message

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

uniform call distribution (UCD)

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

UNIX operating system

A multi-user, multitasking computer operating system.

untouched message

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

user population

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

V

vector

A customized program in the switch for processing incoming calls.

voice link

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

voice mail

See *voice message*.

voice mailbox

See *mailbox*.

voice message

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

voice port

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

voice terminal

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

voicing

Either speaking a message into the INTUITY system during recording, or having the system play-back a message or prompt to a subscriber.

volt

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

W

watt

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

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