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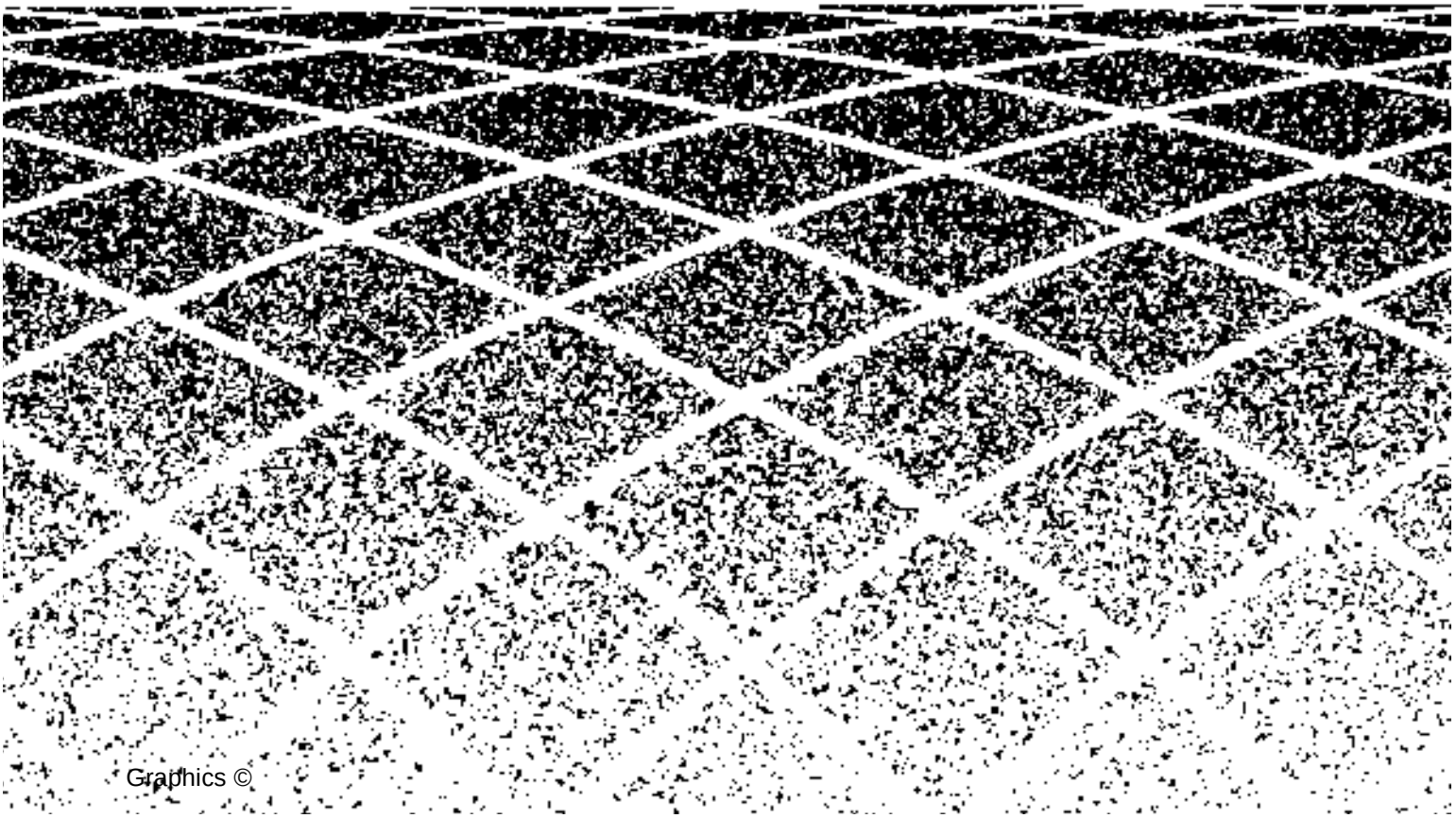
INTUITY™ Integration with Mitel™



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Contents

Contents

Contents

Contents

Contents

Contents

Contents

Contents

About This Book

Purpose

Intuity™ Integration with Mitel™, 585-310-222, contains installation and administration instructions for integrating a Mitel 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
- Mitel SX-200 DIGITAL, SX-100 and SX-200 administration instructions
- SID troubleshooting guide

This book contains information only for a Mitel 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 Mitel 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 Mitel 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 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 information for installing only 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 for integration with the Mitel switches.
- Chapter 6, "Administering the Intuity System for the Mitel 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, "Mitel SX-200 DIGITAL Switch Administration" contains information on administering a Mitel switch to work with an Intuity system.
- Chapter 8, "Mitel SX-100 and SX- 200 Switch Administration" contains information on administering a Mitel SX-100 and SX-200 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 Mitel switch.
- Appendix B, "Using Views During Integration" provides three real-time views of the integration process.
- Appendix C, "Switch Administration for INTUITY Lodging" provides switch administration procedures if you have Intuity Lodging.

The document 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 Mitel 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 documents.

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

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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.
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Phillips®	Registered trademark of Phillips Screw Company
Mitel™	Trademark of Mitel Limited
SX-100®	Registered trademark of Mitel Corporation
SX-200®	Registered trademark of Mitel Corporation
SX-200®DIGITAL	Registered trademark of Mitel Corporation
SUPERSET®	Registered trademark of Mitel Corporation

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Product Name	Company
TMI™	Trademark of Texas Micro Systems, Inc.
UNIX®	Registered trademark of UNIX Systems Laboratories, Inc.
VT100™	Trademark of Digital Equipment Corporation

Related Resources

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

Title	Order Number
Intuity System Description	585-310-211
Intuity AUDIX Feature Descriptions	585-310-212
Intuity Documentation Guide	585-310-540
Migration to the Intuity System	585-310-602
Intuity New System Planning	585-310-603
Intuity New System Planning for Release 3.0	585-310-605
Intuity MAP/5 Hardware Installation	585-310-146
Intuity MAP/5 Installation Checklist	585-310-147
Intuity MAP/40 Hardware Installation	585-310-138
Intuity MAP/40 Installation Checklist	585-310-141
Intuity MAP/100 Hardware Installation	585-310-139
Intuity MAP/100 Installation Checklist	585-310-137
Intuity Software Installation	585-310-140
Intuity Integration with System 75 and DEFINITY Communications System G1and G3	585-310-214
Intuity Integration with System 85 and DEFINITY Communications System G2	585-310-215
Intuity Integration with 5ESS	585-310-219
Intuity Integration with DMS-100	585-310-220
Integration with NEAX	585-310-216
Intuity AUDIX Digital Networking Administration	585-310-533

Continued on next page

Title	Order Number
AMIS Analog Networking	585-300-512
Intuity Intro Voice Response	585-310-716
Intuity Platform Administration and Maintenance	585-310-534
Intuity AUDIX Announcement Customization- American English	585-310-535
Intuity AUDIX Announcement Customization- British English	585-310-536
Intuity AUDIX Announcement Customization- Latin Spanish	585-310-537
Intuity AUDIX Announcement Customization- French Canadian	585-310-538
AUDIX Administration and Data Acquisition Package	585-302-502
A Portable Guide to Voice Messaging	585-300-701
Voice Messaging Quick Reference	585-300-702
Multiple Personal Greetings Quick Reference	585-300-705
Voice Messaging Wallet Card	585-300-704
Outcalling Quick Reference	585-310-721
Voice Messaging Business Card Stickers	585-304-705
Voice Messaging Subscriber Artwork Package	585-310-724

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Introduction and Requirements for Integration

1

Introduction

This chapter describes the requirements for a Mitel SX-200 DIGITAL, SX-100, and SX-200 switch integration with an Intuity system. It includes diagrams and checklists that show the different configurations for the Intuity system.

Overview of SID Integration

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 Mitel 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 Mitel 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 Mitel station set. The SID uses the Mitel set to provide integration information to the Intuity system. The set connects to the SID through a standard Mitel telephone line cord. The SID connects to the Intuity system through an RS-232 cable.

Because of limitations imposed by the Mitel switch and the SID, an Intuity system integration with a Mitel 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 Mitel 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	12 of 24 ports supported per SID	1	2	12
MAP/40	12 of 24 ports supported per SID	2	4	24
MAP/100	12 of 24 ports supported per SID	2	4	24

The SID emulates a Mitel 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 Mitel switch 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 a Mitel station set and requires the same components.

The link between the Mitel and the SID is a six-foot telephone line cord. The SID must be installed within the local loop length limit for an Mitel 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 Mitel 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 Mitel switch:

- Systems with 12 ports or less
- Systems with 12 to 24 ports

This section contains component connectivity diagrams for each configuration.

System with 12 Ports or Less

Figure 1-1 shows the connections between an Intuity system on a MAP/100 or MAP/40 and a Mitel switch through the multi-port serial card. Figure 1-2 shows the connections between an Intuity system on a MAP/5 platform and a Mitel switch through COM1. Both diagrams are for Intuity systems with 12 ports or less that requires one SID.

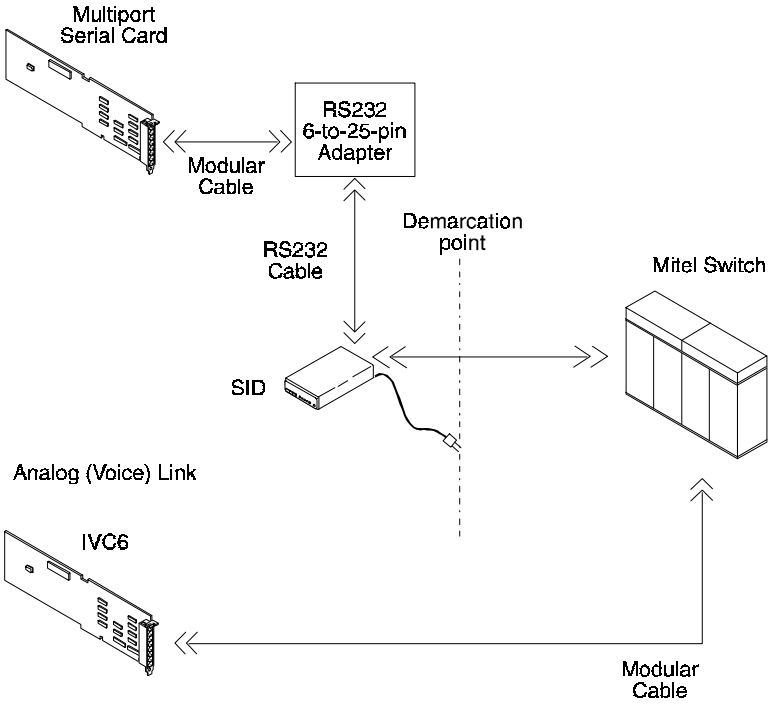


Figure 1-1. Connections through the Multiport Serial Card for an Intuity Integration with a Mitel Switch (One SID)

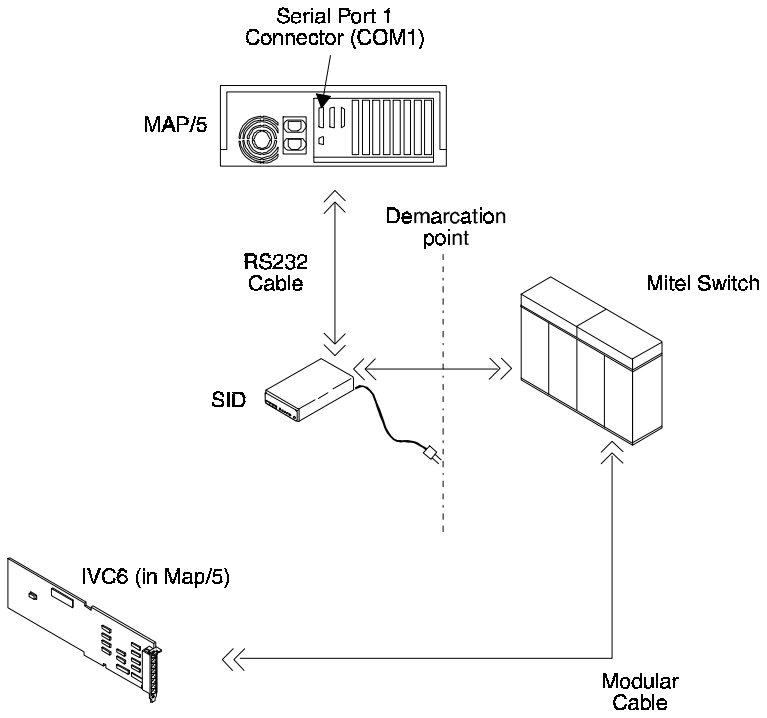


Figure 1-2. Connections through the COM 1 Serial Port for an Intuity Integration with a Mitel Switch (MAP/5 only)

System with 12 to 24 Ports

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

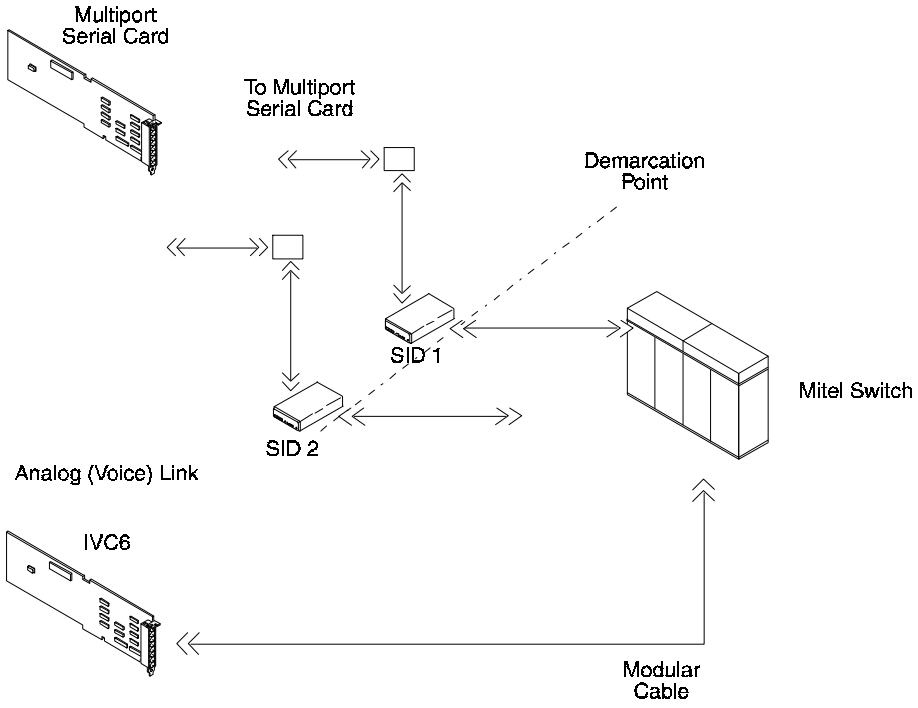


Figure 1-3. Connections through the Multiport Serial Card for an Intuity Integration with a Mitel Switch (Two SIDs)

Intuity System Required Hardware

Table 1-3 lists the hardware components required on the Intuity system for a Mitel 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 4 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 card	Multiport serial 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 multiport serial card must be used for the SID connection. On the MAP/5, the COM1 port can be used for the SID connection if only one SID is used.	X	
MAP/5 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	
Multiport serial card connection only: RS-232 cable with 6-pin to 25-pin adapter	For a connection to the 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 required 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	
Mitel telephone line cord or Mitel modular cable	Used to connect the SID to the switch **NOTE:** AT&T assumes responsibility only for connecting the cord to the SID. All remaining connections must be performed by the customer or the customer's switch technician.		X

Mitel Switch Components

The customer must provide the correct switch and related components as described in Table 1-4. 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 Mitel switch generics and related components described in the tables.

Table 1-4. Mitel SX-200 DIGITAL Required Components

Component	Description	AT&T Supplied	Customer Supplied
Mitel SX-200 DIGITAL switch	Generic 1000, 1001, 1002, 1003 or 1004 — Software support for Mitel Message Waiting feature		X
Digital port	Four digital ports configured for SUPERSET 4 station sets (sets not required)		X
Line card	COV 9109-040		X
Analog port	One analog port configured as a 2500 set for each integrated voice port: Part Number ONS 9109-010 Part Number OPS 9109-040		X

Table 1-5. Mitel SX-100 Required Components

Component	Description	AT&T Supplied	Customer Supplied
Mitel SX-100 switch	Generic 217 — Software support for Mitel Message Waiting feature		X
Digital port	Four digital ports configured for SUPERSET 4 station sets (sets not required)		X
Line card	COV line card or 9110/410 Analog SUPERSET 4 line card		X
Analog port	One analog port configured as a 2500 set for each integrated voice port, part number 9110-110		X

Table 1-6. Mitel SX-200 Required Components

Component	Description	AT&T Supplied	Customer Supplied
Mitel SX-200 switch	Generic 1000, 1001, 1002, 1003, or 1004 — Software support for Mitel Message Waiting feature		X
Digital port	Four digital ports configured for SUPERSET 4 station sets (sets not required)		X
Line card	COV line card or 9110/410 Analog SUPERSET 4 line card		X
Analog port	One analog port configured as a 2500 set for each integrated voice port, part number 9110-110		X

Summary

You have read the information concerning the requirements for a Mitel SX-200 DIGITAL, SX-100 and SX-200 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.

Switch Integration Device Basics

2

Introduction

Before you attempt to operate and administer the Switch Integration Device (SID) and integrate a Mitel 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.

This 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.

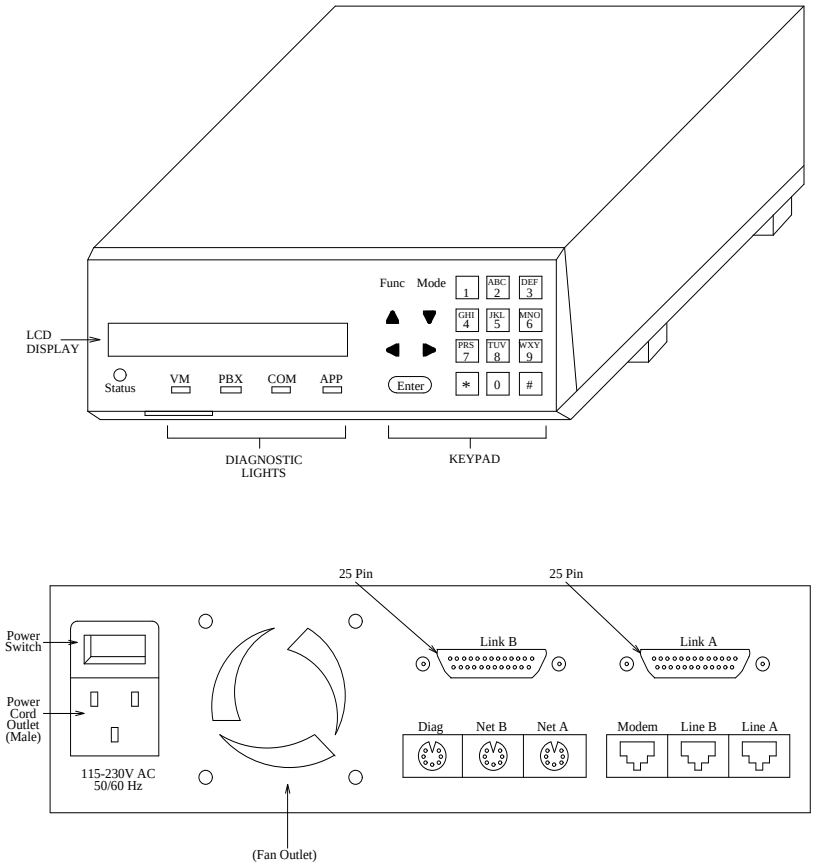


Figure 2-1. Top: SID Front Panel
Bottom: SID Back Panel

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, the Main Menu.

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

Figure 2-2. Sample Menu Screen

A menu screen contains the following two items:

Name	The menu name appears in the upper left hand corner of the LCD display. Use the name as a reference item.
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.

For example, to display the Setup screen from the sample menu shown in Figure 2-3, press **4** on the keypad. The Main Menu is cleared and the Setup menu 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 Screen 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 Centrex Baud Rate screen.

```
CENTREX Baud Rate:                  1200
← →
```

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 Centrex screen to set the baud rate for the SMSI link to specific values between 1200 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	Display next higher value
Left Arrow	Display next 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 functions. To access the help function, 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-Overtype      2-Insert   3-Clear
              4-Undo
```

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

The following list describes each available help screen option.

Overtype	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; or 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 lists 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
Arrows	No action
Enter	No action

Summary

You have read the basic information necessary to integrate an Intuity system with a Mitel 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 Mitel switch with an Intuity system, you must plan the process. This chapter provides worksheets and information to plan and record the integration. Use the worksheets when completing the switch integration process.

The worksheets help you collect the following information:

- Number of voice mail ports and SIDs
- Message desk number
- Extension length
- Calling party identification (CPID) pad string
- Message waiting indicator (MWI) pad string
- Message waiting indicator feature
- Call sequence
- Class of service (COS) numbers
- Extensions/logical terminal number (LTN) plan
- Pilot number, SUPERSET extensions and MWI extension

Continue with the following instructions to plan the switch integration.

Worksheet A: Switch Integration Information

Use Worksheet A 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:		12
	Number of SIDs Required: ❑ 1-12 ports, 1 SID ❑ 13-24 ports, 2 SIDs		N/A
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.	Call Sequence:	Call/Data	Data/Call
8.	COS # for the analog voice ports	4	N/A
9.	COS # for the incoming call lines	4	N/A
10.	COS # for the message waiting notification line	5	N/A

Determining the Number of Voice Ports and SIDs

You must specify the number of voice mail ports that each Switch Integration Device (SID) will support and monitor. To determine the number of ports needed, refer to *Intuity New System Planning for Release 3.0,* 585-310-605.

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

Table 3-1. Voice Ports Supported by an Intuity System Integrated with a Mitel 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	12	1	2	12
MAP/40	12	2	4	24
MAP/100	12	2	4	24

After determining 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 12 ports on the Intuity system, you must use two SIDs. Check the appropriate box under "Number of SIDs Required" on line 1 of Worksheet A.

Setting the Message Desk Number

The Simplified Message Desk Interface (SMDI) message desk number usually must match the number assigned on the voice mail system. However, since the Intuity system does not use the message desk number, use the default value, *001*, assigned to the SID. Line 2 on Worksheet A already contains the default value.

Setting the Extension Length Number

The CPID and 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.

Setting the CPID Pad String

The SID retrieves calling and called party information identical to the display information provided on the Mitel SUPERSET 4 telephone 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.

Setting the MWI Pad String

The MWI Pad String operates on the same basis as the CPID Pad String. As with the CPID Pad String, the SID uses a seven-digit string, called the MWI pad string, that provides MWI format information generated by the Intuity system. The SID uses the MWI pad string to strip off digits not required by the Mitel SUPERSET 4 telephone set. The SID assigns a default MWI pad string of 0000xxx. If you change the default pad string, 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 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 Mitel integration, change the default setting to *Call/Data*. Line 7 on Worksheet A already contains this setting.

Setting COS Numbers

COS identifies the features available to an extension, such as call hold and retrieve access and do not disturb features. You must program three COS numbers, one for the analog voice mail ports, one for the three SUPERSET telephone extensions that process incoming calls, and a third for the SUPERSET extension used to process message waiting notification.

Use COS 4 to select features for analog voice mail ports and the three Superset ports not used for MWI activity. Use COS 5 to select features for the Superset port used for MWI.

Worksheet B: Extension/LTN Plan

Use Worksheet B to record extension, logical terminal number (LTN), and equipment number 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	Equipment No.	LTN	Extension	Equipment No.	LTN
		0001			0007
		0002			0008
		0003			0009
		0004			0010
		0005			0011
		0006			0012

SID Number Two

Extension	Equipment No.	LTN	Extension	Equipment No.	LTN
		0013			0019
		0014			0020
		0015			0021
		0016			0022
		0017			0023
		0018			0024

Setting the Extension/LTNs

On the Intuity system, you assign a channel to each extension to allow for switch communication. For the SID application, associate a logical terminal number (LTN) and equipment number, if you have an SX-100 or SX-200 switch, 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 assigned on the Intuity system. If you are using a Mitel SX-100 or SX-200 switch, also list the associated equipment number. Use Worksheet B to record the LTNs, ports, and extensions.

If you require more than 12 ports on the Intuity system, you must use two SIDs. When assigning extensions and LTNs for two SIDs, assign the extensions and LTNs in sequential order. For example, if you have a 16 port Intuity system, SID number one would have LTNs 0001 through 0012, and SID number two would have LTNs 0013 through 0016. Worksheet B contains space for two SIDs, the maximum supported by an Intuity system integrated with a Mitel switch. The LTNs have already been entered in sequential order. Enter the extensions for each of the voice ports and associated equipment numbers.

Worksheet C: Pilot Number, SUPERSET Extensions, and MWI Extension

Use Worksheet C to record information needed for the integration. Use the procedures following Worksheet C to fill out the appropriate lines of the worksheet.

Worksheet C: Pilot Number, SUPERSET Extensions, and MWI Extension

SID Number One

Line #	Extension Type	Extension	Equipment Number
1	Hunt Group Pilot Number		
2	SUPERSET Incoming Call Extension		
3	SUPERSET Incoming Call Extension		
4	SUPERSET Incoming Call Extension		
5	Message Waiting Notification Extension		

SID Number Two

Line #	Extension Type	Extension	Equipment Number
1	Hunt Group Pilot Number		
2	SUPERSET Incoming Call Extension		
3	SUPERSET Incoming Call Extension		
4	SUPERSET Incoming Call Extension		
5	Message Waiting Notification Extension		

Setting the Pilot, SUPERSET and MWI Extensions

The hunt group pilot number is the extension assigned to the SID. Intuity system subscribers dial the pilot number to access their voice mail. The pilot number serves as the extension number that the switch associates with the SUPERSET 4 station. If the pilot number is busy, the SID *hunts* or searches through a range of four keys used to complete the call. The hunt group serve three purposes.

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

For the integration to work, determine the pilot number for the SID and the extensions for the hunt group, the target for all busy-forwarded calls. When selecting a pilot number, use an extension number not currently assigned on the Mitel switch. Use a number that is easy to remember. You also need to select a range of four extensions. Try to select four sequential numbers.

For example, if you determine that you want to use 400 as the pilot number, then assign 401, 402, 403, and 404 as the extensions for the hunt group. The last extension, 404, is reserved as the message waiting notification server extension.

After you determine the pilot number, write the extension number and associated equipment number on line 1 of Worksheet C. Write the extension numbers for the hunt group and associated equipment numbers on lines 2 through 4 of Worksheet C. Write the last extension and associated equipment number on line 5 of Worksheet C.

If you use two SIDs for the integration, you must determine a pilot number and hunt group range for each SID. These extensions will be assigned to a switch group or hunt group in Chapter 7, "Mitel SX-200 DIGITAL Switch Administration" or in Chapter 8, "Mitel SX-100 and SX- 200 Switch Administration" Worksheet C contains space for two SIDs, the maximum supported by an Intuity system integrated with a Mitel switch. Enter the pilot number and hunt group range extensions for both 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.

Hardware Installation

4

Introduction

This chapter describes the hardware and cable installation tasks required to integrate a Mitel switch with an Intuity system through a switch integration device (SID). Before you proceed with the instructions in this chapter, verify that the platform 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 tasks must be performed by the AT&T installation technician, the customer, or the customer's switch technician. Each procedure indicates who should perform the task.

The hardware installation tasks covered in this chapter include:

- Connect an analog line to the modem
- Connect the Mitel 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 two SIDs, repeat step 1 for the other SID.

Proceed to the next procedure.

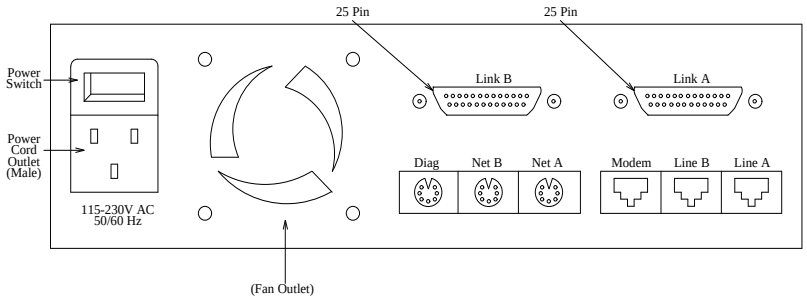


Figure 4-1. Back View of the SID

Connect the SID to the SX-200 DIGITAL, SX-100 or SX-200 Mitel 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 Mitel switch.

The SID connects to the switch exactly the same as a Mitel set connects to the switch. The Mitel switch communicates with the SID through a standard Mitel 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 two SIDs, repeat the procedure for the other SID.

Proceed to the next procedure.

Connect the SID to the Intuity System

This task 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 adapter.
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 two SIDs, repeat the procedure for the other SID.

Proceed to the next procedure.

Connect the SID Power Cord

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

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 two SIDs, repeat the procedure for the other SID.

Summary

You have completed the hardware installation steps required for the Mitel 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 software installation guide 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 transfer feature.

Each of these procedures is described in the following sections.

Requirements for Installation

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

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

Stop the Voice System

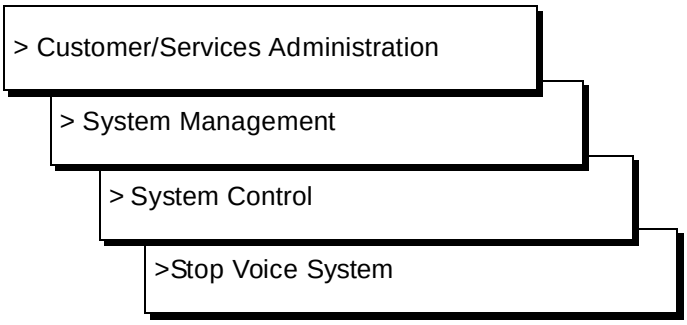
Before you can load the SID software, you must stop the voice system.

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:

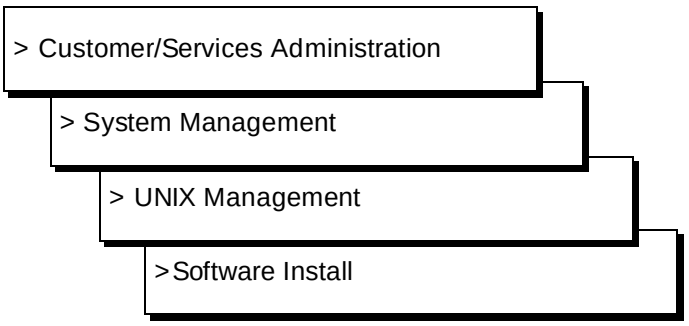
   ```
   The Voice System has stopped
   Press ENTER to continue...
   ```
5. Press ENTER.

   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 section.

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.

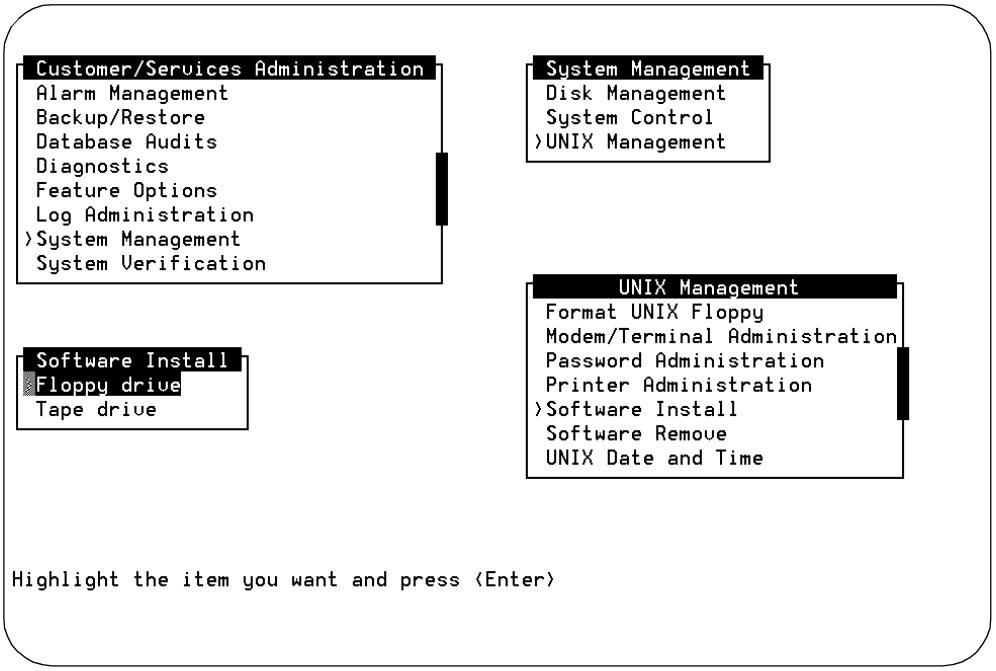


Figure 5-1. Software Install Menu

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, *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 **3** to select Mitel. The system responds with the following confirmation message:

```
Confirm:  You selected option 3.  (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.

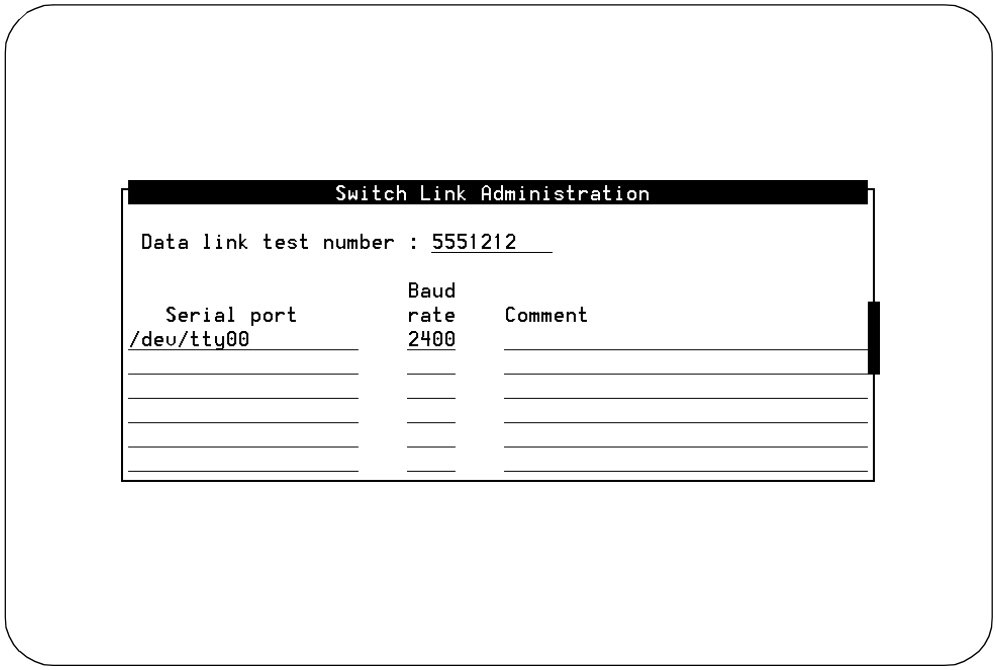


Figure 5-2. Switch Link Administration Screen with System Defaults

11. Use Table 5-1, following, to enter the correct values in each field on the Switch Link Administration screen as shown in Figure 5-2.

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/ttysa*x*, 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 the serial port was registered successfully and the voice system must be started.

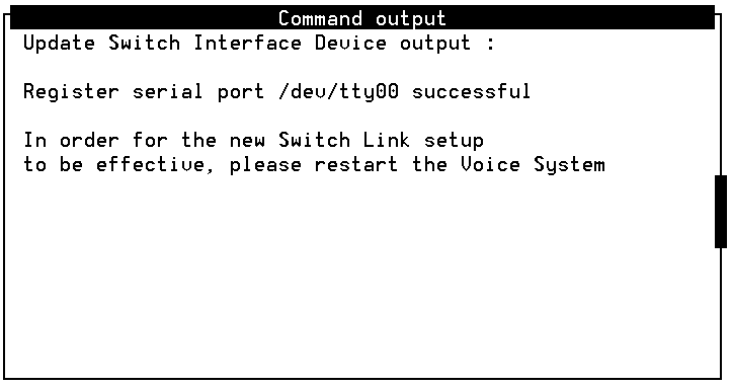


Figure 5-3. Switch Link Administration Confirmation Message

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.

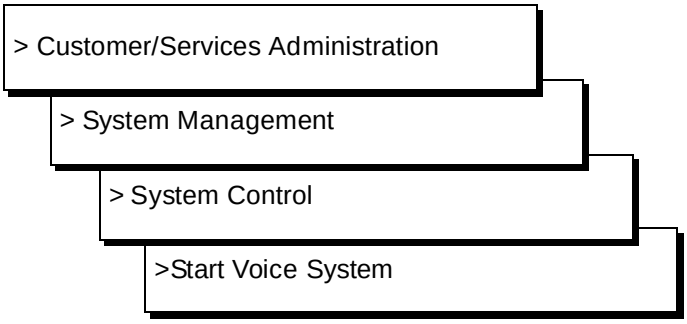
17. Press CANCEL (F6) until the Intuity Administration menu appears.

    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, see *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 Mitel integration. Proceed to Chapter 6, "Administering the Intuity System for the Mitel Integration".

Administering the Intuity System for the Mitel Integration

6

Introduction

This chapter describes how to administer the Intuity system for integration with the Mitel switch. To integrate with the Mitel 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.

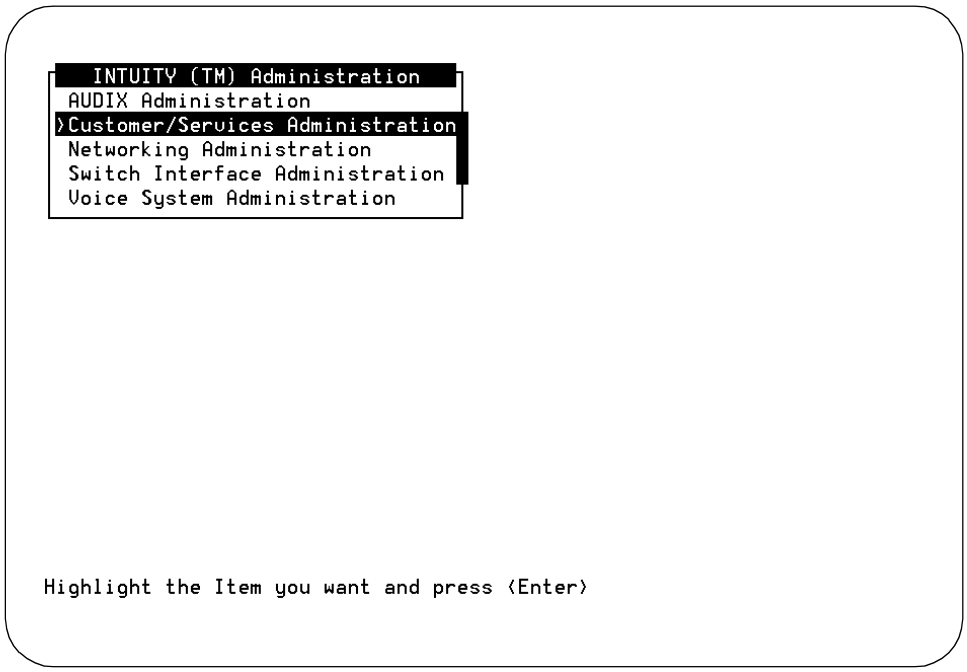


Figure 6-1. Intuity Administration Menu

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.

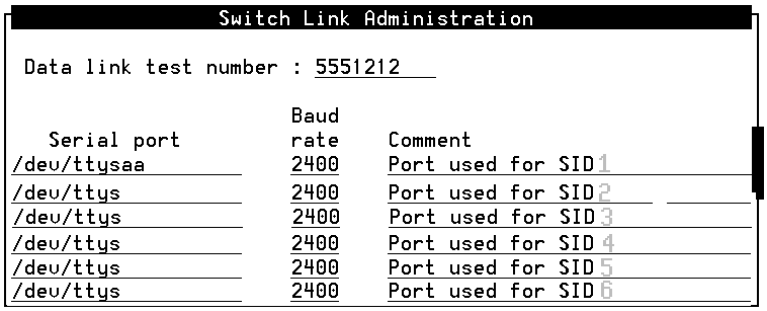


Figure 6-3. Switch Link Administration Screen Showing Multiple SID Serial Port Assignments

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

Table 6-1. 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 serial 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/ttysa*x*, 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. If you have two SIDs, enter the serial port address for each of the SIDs.
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 this field to enter a comment. Enter a maximum of 30 characters. In your comment, do not use double quotation marks (“) or SHIFT + backslash (\). If you have two SIDs, use the comment field to identify the number of the SID.

6. Press SAVE (F3).

   A confirmation message appears as shown in Figure 6-4. The message indicates that the serial port was registered successfully and the voice system must be stopped and restarted.

   NOTE:
   If two SIDs were assigned, the confirmation message shows a successful registration of both ports.

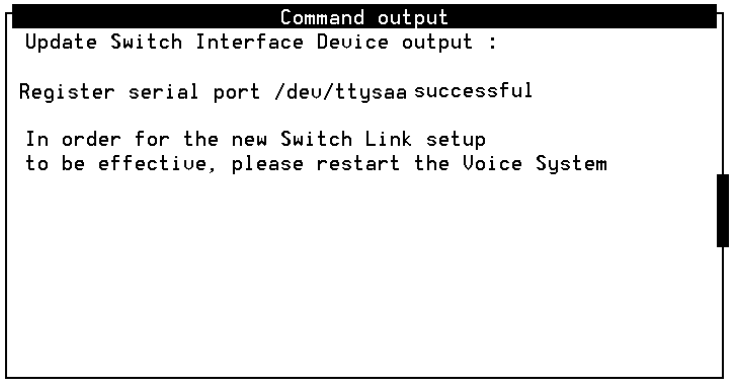


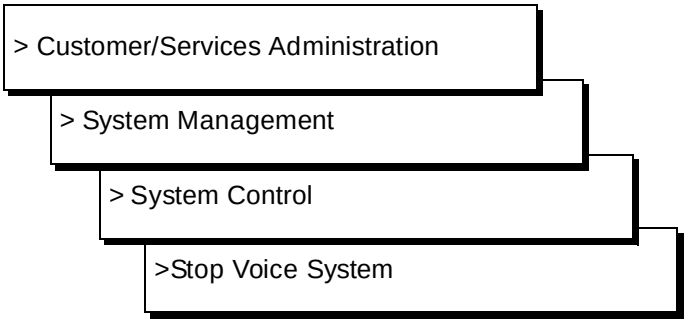
Figure 6-4. Switch Link Administration Confirmation Message

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 Voice System."

Stop and Restart the 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:



   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 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. . .
   ```

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 starting. When the process finishes, the following messages appear:

   ```
   Startup of the Voice System is complete
   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:

> Switch Interface Administration
>
> > System Translation

The System Translation screen appears as shown in Figure 6-5.

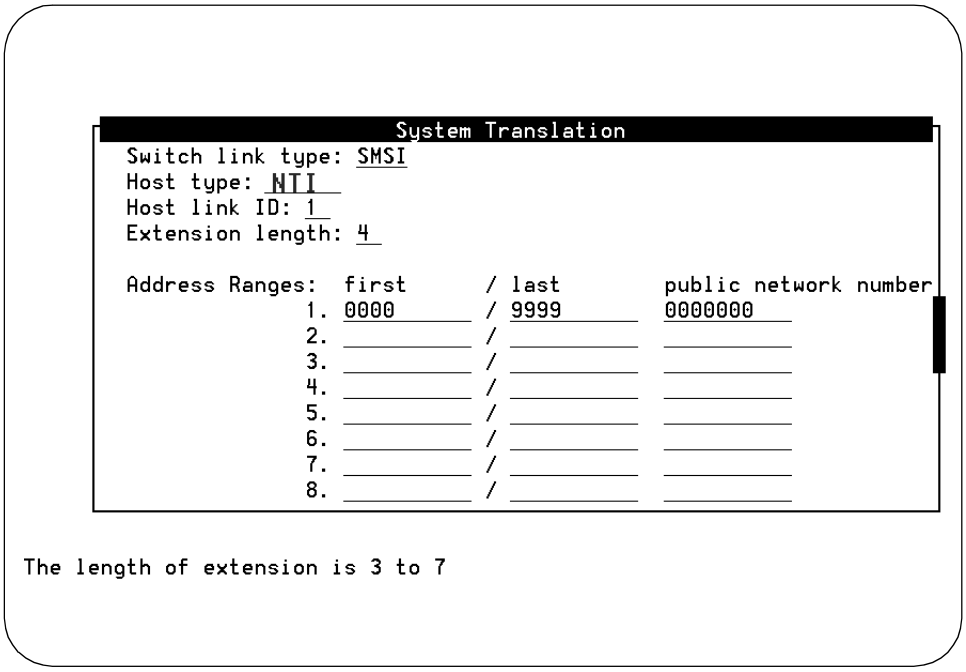


Figure 6-5. System Translation Screen

2. 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	This field contains the current switch link type. You cannot change this setting.
Host type	This field contains the current host switch type. You cannot change this setting.
Host link ID	This field contains the current host link ID. You cannot change this setting.
Extension length	This 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.

3. 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.

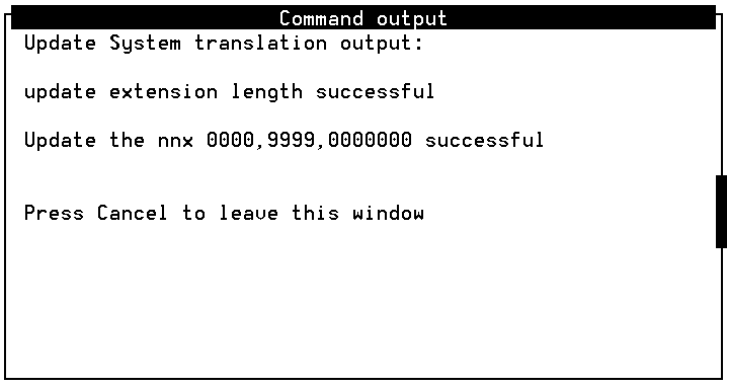


Figure 6-6. Command Output Screen

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

Summary

You have completed the administration of the Intuity system for the Mitel integration. Proceed to Chapter 7, "Mitel SX-200 DIGITAL Switch Administration".

Mitel SX-200 DIGITAL Switch Administration

7

Introduction

This chapter contains instructions for administering a Mitel SX-200 DIGITAL switch to work with an Intuity system. If you have a Mitel SX-100 or SX-200 switch, refer to Chapter 8, "Mitel SX-100 and SX- 200 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.

⚠ 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 Mitel switch is a phone-based task. A procedure must be performed at each subscriber telephone to administer the extension on the switch. Although each telephone requires administration only once, the process may require a large amount of time if you have a large subscriber base. Instead of having the system administrator perform the subscriber telephone tasks, have each subscriber perform the task. Determine the best cut-to-service strategy in advance and plan a time to administer the subscriber extensions.

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 Mitel switch to administer it for the integration.

- Program three Classes of Service (COS)
- Administer the analog voice ports
- Administer the SUPERSET 4s
- Program hunt group
- Administer subscriber station sets

NOTE:
The information presented in this chapter represents guidelines for administering the Mitel SX-200 DIGITAL switch to integrate with an Intuity system. If additional information is required for any screens or processes, refer to the documentation supplied with the Mitel switch. The switch administration process should be performed by a trained Mitel technician. AT&T services personnel will not administer the Mitel switch.

The sample displays used in this chapter are taken from a Mitel SX-200 DIGITAL Generic 1001 administration terminal. Any field displayed in boldface must be entered by the user.

The following procedures use specific extension numbers for SID, analog voice mail ports, and subscribers as examples. The following examples assume:

- SID is assigned a pilot extension number of 500.
- A four-port voice mail system is being installed. The analog ports are numbered 501, 502, 503, and 504.
- Coverage path *1* is used when administering subscriber stations that must cover to SID.
- Extensions 201 and 202 are voice mail subscribers.

NOTE:
Use the examples only for illustration purposes. Refer to Chapter 3, "Switch Integration Planning", to find the correct information to be used with your integration.

Program the COS

The COS identifies the features available to an extension, such as call hold and retrieve access and do not disturb features. You must program two COSs, one for the analog voice mail ports and the three SUPERSET telephone extensions that process incoming calls, and one for the SUPERSET extension used to process message waiting notification. In Chapter 3, "Switch Integration Planning", two COS were selected and recorded on Worksheet A.

Refer to the following Mitel main menu screen shown in Figure 7-1 while programming COSs.

```
11:00 AM    10-AUG-95              alarm status = NONE

FORMS

01=SYSTEM CONFIGURATION            02=FEATURE ACCESS CODES
03=COS DEFINE                      04=SYSTEM OPTIONS/SYSTEM
05=TENANT INTERCONNECTION          TIMERS
TABLE                              06=TENANT NIGHT SWITCHING
07=CONSOLE ASSIGNMENTS             CONTROL
09=STATIONS/SUPERSET SETS          08=ATTENDANT LDN ASSIGNMENTS
11=RESERVED                        10=PICKUP GROUPS
13=TRUNK CIRCUIT DESCRIPTORS       12=RESERVED
15=DIAL-IN TRUNKS                  14=NON-DIAL-IN TRUNKS
17=HUNT GROUPS                     16=TRUNK GROUPS
19=CALL REROUTING TABLE            18=MISCELLANEOUS SYSTEM PORTS
21=ARS: DAY ZONE DEFINITION        20=ARS: COR GROUP DEFINITION
23=ARS: ROUTE DEFINITION           22=ARS MODIFIED DIGIT TABLE
25=ARS: ROUTE PLANS                24=ARS: ROUTE LISTS
27=FORM ACCESS RESTRICTION         26=ARS: DIGIT STRINGS
DEF'N                              28=RESERVED

ENTER FORM NUM:  3

    6-QUIT    7-TOP  8-BOTTOM      9-          0-
```

Figure 7-1. Mitel Main Menu

1. Enter **3** to select the COS Define option.

   After entering the selection, the COS Administration screen appears. A sample partial screen is shown in Figure 7-2. Scroll through the screen to display all the options available. Note that COS numbers 4 and 5 will be configured for our example.

,

```
11:00 AM  1-AUG-95                              alarm status = NONE


[COS : 4] OPTION NAME (DISPLAYING ENABLED)     STATUS  OPTION NUM

Attendant-Timed Recall (NO ANSWER) 10-60 s        20        115
Attendant-Timed Recall (HOLD) 10-60 s             60        116
Attendant-Timed Recall (CAMP-ON) 10-60 s          30        117
Attendant Automatic Call Forward No Answer Timer  30        118
Account Code, Forced Entry - External Calls       ENABLED   200
Account Code, Forced Entry - Long Distance Calls  ENABLED   201
Call Hold And Retrieve Access                     ENABLED   211
Can Flash If Talking To An Incoming Trunk         ENABLED   212
Data Security                                     ENABLED   216
Directed Call Pickup                              ENABLED   218
Clear All Features                                ENABLED   221
Message Register Applies                          ENABLED   229


1- TOP     2-COPY COS      3-COS NUMBER      4-     5-BOTTOM

6-QUIT     7-OPTION NUM    8-SHOW DISABLE    9-     0-
```

Figure 7-2. COS Administration Screen

2. A prompt appears requesting a COS number. Enter **4**.
3. Enable and disable the features listed in Table 7-1.

Table 7-1. COS Options for Analog Voice Mail Ports and SUPERSET Ports

Field	Option Number	Setting
Can flash if talking to an incoming trunk	212	ENABLED
Can flash if talking to an outgoing trunk	213	ENABLED
Data security	216	ENABLED
COV voice main port (1003 MR3 and greater)	229	ENABLED
Override security	238	ENABLED
Call hold and retrieve access	259	ENABLED
Message waiting setup (bell)	231	DISABLED
Message waiting setup (lamp)	232	DISABLED
Camp on	301	DISABLED
Call forwarding - busy	206	DISABLED
Call forwarding - don't answer	207	DISABLED
Call forwarding - external	208	DISABLED
Call forwarding - follow me	209	DISABLED
Do not disturb	220	DISABLED
Automatic call back	300	DISABLED
SUPERSET line select	604	DISABLED
Originate only	235	DISABLED
Receive only	241	DISABLED
Never a forwardee	234	DISABLED

4. Return to the Mitel main menu and enter **3** to select COS Define option.
5. A prompt appears requesting a COS number. Enter **5**.
6. Enable and disable the features listed in Table 7-2.

Table 7-2. COS Options for SUPERSET Port Used for MWI

Field	Option Number	Setting
Call forwarding - follow me	209	ENABLED
Can flash if talking to an incoming trunk	212	ENABLED
Can flash if talking to an outgoing trunk	213	ENABLED
Data security	216	ENABLED
Station override security	238	ENABLED
COV voice main port (1003 MR3 and greater)	229	ENABLED
Message sending (1003 only)	259	ENABLED
SUPERSET sub-attendant (dial out for message waiting)	606	ENABLED
Camp on	301	DISABLED
Call forwarding - busy	206	DISABLED
Call forwarding - don't answer	207	DISABLED
Call forwarding - external	208	DISABLED
Do not disturb	220	DISABLED
Automatic call back	300	DISABLED
SUPERSET line select	604	DISABLED
Originate only	235	DISABLED
Receive only	241	DISABLED
Never a forwardee	234	DISABLED

7. Assign COS 4 to the analog voice mail ports and the three SUPERSET ports not used for MWI activity.
8. Assign COS 5 to the SUPERSET port to be used for MWI activity.
9. When programming COS for subscriber telephones, enable or disable the features listed in Table 7-3. Consult the system administrator if other features are required.

Table 7-3. COS Options for Subscriber Extensions

Field	Option Number	Setting
Call forwarding - no answer	207	ENABLED
Can flash if talking to an incoming trunk	212	ENABLED
Can flash if talking to an outgoing trunk	213	ENABLED
Message waiting set up (lamp or bell)	232	ENABLED
Call forwarding - busy (below 1003 MR3)	206	DISABLED
Call forwarding - follow me (below 1003 MR3)	209	DISABLED
Automatic call back	300	DISABLED
Camp on	301	DISABLED

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

Administer the Analog Voice Ports

Each analog 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 analog voice ports are also entered into the SID. Sequentially numbering the extensions simplifies the process.

NOTE:
To make sure that you create an extension for each analog voice port, refer to Chapter 3, "Switch Integration Planning", Worksheet B: Extension/LTN Plan. If the integration requires two SIDs, be sure to include the extension numbers for both SIDs.

The following example uses extensions 501, 502, 503, and 504 as voice ports. They are assigned the COS from our example, COS 4.

Use the following procedure to administer the analog voice ports.

1. From the Mitel main menu, select option 9, Stations/Superset Sets. After you enter the selection, the Stations/Superset Sets screen appears. A sample screen is shown in Figure 7-3.

```
11:00 AM    1-AUG-95                    alarm status = NONE

BAY  SLOT  CCT  TEN  EXT NUM  COS  COR  TYP  ANNOUNCE  BLF  COM
3    01    01   1    501      4    1    Stn
3    01    02   1    502      4    1    Stn
3    01    03   1    503      4    1    Stn
3    01    04   1    504      4    1    Stn

     1-          2-FIND EXT       3-          4-        5-RANGE
     6-QUIT      7-BAY/SLT/CCT  8-DELETE      9-REVIEW  0-
```

Figure 7-3. Stations/SUPERSET Sets Screen - Administer Analog Voice Ports

2. Configure extensions 501 through 504 as *2500* sets (Stn in the Type field). They are assigned the same COS, in this case 4. (COR and TEN should be assigned by the system administrator).

   Return to the Mitel main menu.

Proceed to the next section, “Administer the SUPERSET 4.”

Administer the SUPERSET 4

The SID emulates four Mitel SUPERSET 4 digital telephone stations to create the integration between the Mitel switch and the Intuity system. For the integration to operate properly, you must administer the SUPERSET on the switch.

In the following example,. four SUPERSET 4 telephones will be programmed with specific COS requirements and restrictions. Extensions 511, 512, and 513 will share the same COS, COS 4. Extension 514 will have a unique COS, COS 5.

Administer the SUPERSET 4 Emulation

Use the following procedure to configure the SUPERSET 4:

1. At the Mitel main menu, select **9**, Stations/Superset Sets.
2. The Stations/SUPERSET Sets screen appears. A sample screen is shown in Figure 7-4, with the SUPERSET 4 settings appearing in bold type.

```
11:00 AM    1-AUG-95                    alarm status = NONE

BAY  SLOT  CCT  TEN  EXT NUM  COS  COR  TYP  ANNOUNCE  BLF  COM
3    01    01   1    501      3    1    Stn
3    01    02   1    502      3    1    Stn
3    01    03   1    503      3    1    Stn
3    01    04   1    504      3    1    Stn
1    06    02   1    511      4    1    Set
1    06    03   1    512      4    1    Set
1    05    02   1    513      4    1    Set
1    05    03   1    514      5    1    Set

     1-          2-FIND EXT       3-          4-        5-RANGE
     6-QUIT      7-BAY/SLT/CCT    8-DELETE    9-REVIEW  0-
```

Figure 7-4. Stations/SUPERSET Sets Screen - Administer SUPERSET 4

3. Configure the SUPERSETs. The type will be *Set*. Set the COS to 4 on extensions 511, 512 and 513. Set the COS to 5 on extension 514 for message waiting processing. Refer to Chapter 3, "Switch Integration Planning", Worksheet C, for the list of extensions to be used with your configuration.

   NOTE:
   The SUPERSET extension used for message waiting notification has a different COS than the other three extensions. When you enter the message waiting notification extension, refer to Worksheet A and enter the correct COS for the extension. In Figure 7-4, extension 514 is the message waiting notification extension and 5 is assigned as the COS.

4. Do not exit the SUPERSET Administration screen. Proceed to the next section, “Administer the SUPERSET MWI Line.”

Administer the SUPERSET MWI Line

The procedure in this section explains how to administer the buttons for the message waiting notification server. The server controls the operation of the message waiting indicators for the system.

The following example assumes that consecutive busy indicators will be assigned for the voice mail ports to keys 4,5,6, and 7 on the extension 514 phone.

1. Press ▼ until extension number 514 is highlighted.
2. Press ESC 3 for Expand Set. The screen changes to the screen shown in Figure 7-5.

```
11:00 AM    1-AUG-95                    alarm status = NONE


KEY  TYPE   DIRECTION  RING    SECRETARIAL  EXT NUM   TRUNK NUMBER
01   Prime  In/Out     Immed   No    514
02   Speed
03   Speed
04   Key    In/Out     Immed   No    501
05   Key    In/Out     Immed   No    502
06   Key    In/Out     Immed   No    503
07   Key    In/Out     Immed   No    504
08   Speed
09   Speed
10   Speed
11   Speed
12   Speed
1-KEY LINE  2-MULTI-CALL  3-PERSONAL O/G  4-DIR TRK ACC  5-PRIV TRK
6-QUIT      7-KEY         8-              9-REVIEW       0-
```

Figure 7-5. Extension Expansion Screen

Note that voice mail port extensions 501 through 504 are assigned to keys 4 through 7. SID uses these busy indicators to determine the available voice mail ports.

Proceed to the next procedure, “Administer the Hunt Group.”

Administer the Hunt Group

The Mitel switch recognizes the SID as a group of SUPERSET digital stations. Because the SID acts as a SUPERSET, use the pilot number of the hunt group as the forwarding target for the Intuity system. Worksheet C in Chapter 3, "Switch Integration Planning" contains the pilot number.

The following example assumes that three phones (extensions 511, 512, and 513) will be programmed identically and will be the only members of a hunt group whose pilot number will be 500.

Refer to the following screens while administering the hunt group.

1. At the Mitel main menu, press **17**, Hunt Groups.

   The Hunt Groups screen appears as shown in Figure 7-6.

```
11:00 AM    1-AUG-95                      alarm status = NONE


[GRP  1:500  ]  [CIRC][STN/SET]  EXT NUM  BAY  SLT  CCT   COMMENTS
                                 511      1    06   02
                                 512      1    06   03
                                 513      1    05   02




                                 511      1    06   02
1-GROUP TYPE    2-TERMINAL     3-INSERT   4-       5-HUNT GROUP
6-QUIT          7-ACCESS CODE  8-DELETE   9-       0-
```

Figure 7-6. Hunt Groups Screen

2. Create a hunt group whose pilot number is 500. The group includes extensions 511, 512 and 513.

NOTE:
Omit from the hunt group list, extension 514, the dedicated MWI processor. This is critical to the proper operation of message waiting.

Administer Subscriber Station Sets

All subscribers are forwarded to the hunt group containing the SUPERSETs. In our example, they are forwarded to extension 500.

Program SUPERSET 4 Telephones

If your SUPERSET 4 telephone was programmed with a name string, and your phone extension is not included, follow these steps.

1. Press the soft key for Program.
2. Press the soft key for Name.
3. Using the dial pad, enter your extension number followed by a blank space followed by your name. Examples are shown below:
   - *201 Smith*
   - *202 JST*

Configure SUPERSET 4 Telephones

1. Press the soft key for Program.
2. Press the soft key for Call Forward.
3. Select the appropriate call forward option:
   - Always Forward.
   - When No Answer
   - When Set's Busy
4. Assign the target extension as *500*, the pilot number for our three SUPERSET telephones. When this is first configured, it automatically places the call in a forwarding mode.

Activate Call Forwarding on SUPERSET 4 Telephones

1. Press the Select Features key.
2. Dial feature *1* for FWD.
3. Press the *ON* soft key.

Deiactivate Call Forwarding on a SUPERSET 4 Telephone

1. Press the Select Features key.
2. Dial feature *1* for FWD.
3. Press the *OFF* soft key.

Activate Call Forwarding for Analog Telephones

1. Listen for dial tone.
2. Dial the Busy/Ring No Answer feature code provided by your system administrator.
3. Dial extension 500, the SID pilot number.
4. Hang up.

NOTE:
Names cannot be programmed on analog telephones; station information will be provided instead.

Deactivate Call Forwarding for Analog Telephones

1. Listen for dial tone.
2. Dial the Busy/Ring No Answer feature code provided by your system administrator.
3. Hang up.

Summary

You have finished the Mitel SX-200 DIGITAL switch administration. Proceed to Chapter 9, “Switch Integration Device Administration,” to configure the switch integration device.

Mitel SX-100 and SX- 200 Switch Administration

8

Introduction

This chapter contains instructions for administering a Mitel SX-100 or SX-200 switch to work with an Intuity system. If you have a Mitel SX-200 DIGITAL switch, refer to Chapter 7, "Mitel SX-200 DIGITAL 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.

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 Mitel switch is a phone-based task. A procedure must be performed at each subscriber telephone to administer the extension on the switch. Although each telephone requires administration only once, the process may require a large amount of time if you have a large subscriber base. Instead of having the system administrator perform the subscriber telephone tasks, have each subscriber perform the task. Determine the best cut-to-service strategy in advance and plan a time to administer the subscriber extensions.

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 Mitel switch to administer it for the integration.

- Add switch options
- Program Classes of Services (COS)
- Administer analog voice mail ports
- Administer SUPERSET 4s
- Program hunt groups
- Administer subscriber station sets

NOTE:
The information presented in this chapter represents guidelines for administering the Mitel SX-100 and SX-200 switch to integrate with an Intuity system. If additional information is required for any screens or processes, refer to the documentation supplied with the Mitel switch. The switch administration process should be performed by a trained Mitel technician. AT&T services personnel will not administer the Mitel switch.

The following procedures use specific extension numbers for SID, analog voice mail ports, and subscribers as examples. The following examples assume:

- SID is assigned a pilot extension number of 500.
- Four extensions, 511, 512, 513 and 514, will be administered as SUPERSET telephones. The corresponding equipment numbers are 21, 22, 23, and 24. Extension 514 will be programmed for dedicated message waiting indicator (MWI) processing.
- The Intuity system uses four analog voice ports numbered 501, 502, 503, and 504. The corresponding equipment numbers are 10, 11, 12, and 13.
- Extensions 201 and 202 are voice mail subscribers.

NOTE:
Use the examples only for illustration purposes. Refer to Chapter 3, "Switch Integration Planning", to find the correct information to be used with your integration.

Set the System Options

For the integration to operate properly, you must add the system options listed in Table 8-1 to the Mitel switch.

Table 8-1. System Options to be Added

Options
Can Flash If Talking to a Station.
Can Flash If Talking to an Incoming Trunk.
Can Flash If Talking to an Outgoing Trunk.
Message Waiting Set-up (Bell).
Message Waiting Set-up (Lamp).
Customer Programming of SUPERSET 4 Enable.

Use the following instructions to add the system options.

1. Place the Programming Console Overlay on the attendant console station as shown in Figure 8-1.

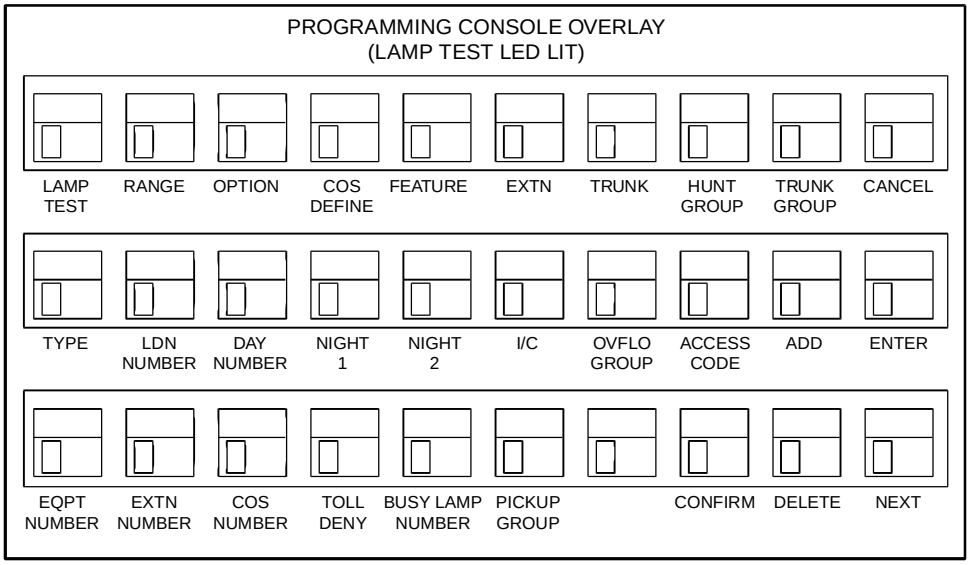


Figure 8-1. Programming Console Overlay on the Attendant Console

2. Dial Feature Access code for feature 29. The attendant console is placed into standard programming mode.
3. Press [OPTION].
4. Dial the option code for the Can Flash If Talking to a Station system option.

   If you do not know the system option codes, consult your system administrator or switch vendor.
5. Press [ADD].
6. Repeat steps 3 through 5 for the remaining system options listed in Table 8-1.
7. Press [ENTER] to save the additions.

Proceed to the next task, “Program the Class of Service.”

Program the COS

The COS identifies the features available to an extension, such as call hold and retrieve access and do not disturb features. The following procedure explains how to enable or disable features in a COS. You must program two COS, one for the analog voice mail ports and the three SUPERSET telephone extensions that process incoming calls, and one for the SUPERSET extension used to process message waiting notification. In Chapter 3, "Switch Integration Planning", two COS were selected and recorded on Worksheet A.

Program the Analog Voice Port and SUPERSET COS

Use COS 4 for the three SUPERSET telephones (extensions 511, 512 and 513) used to process incoming telephone calls and for the four analog voice mail ports.

1. Place the Programming Console Overlay on the attendant console as shown in Figure 8-1.
2. Press [COS DEFINE] on the attendant console and dial the COS number, COS 4.

   The COS number appears in the destination display.
3. Press [OPTION].
4. Dial Option Number *79* to add the Call Hold and Retrieve Access option.
5. Press [ADD].
6. Dial Option Number *41* to add the Data Security option.
7. Press [ADD].
8. Dial Option Number *42* to add the Station Override Security option.
9. Press [ADD].
10. Press [OPTIONS]. Delete the options not required for the integration. The options to be deleted appear in Table 8-2.

Table 8-2. Options to Delete from the COS

Option Name	Option Number
Automatic Call Back	33
Call Forwarding - Busy	34
Call Forwarding - Don't Answer	35
Call Forwarding - Follow Me	36
Message Waiting Applies	77
Never a Forwardee	38
Originate Only	44
Receive Only	45
Meet Me Conference	50
Station Conference	49

11. Dial the option number of the first option in Table 8-2.
12. Press (DELETE).
13. Dial the option number of the next option in Table 8-2.
14. Press (DELETE).
15. Repeat steps 13 through 14 until each option listed in Table 8-2 has been deleted.

Proceed to the next procedure, "Program the SUPERSET COS for Message Waiting Notification."

Program the SUPERSET COS for Message Waiting Notification

Use COS 5 for the single SUPERSET telephone (extension 514) used to process message waiting notification.

1. Place the Programming Console Overlay on the attendant console as shown in Figure 8-2.

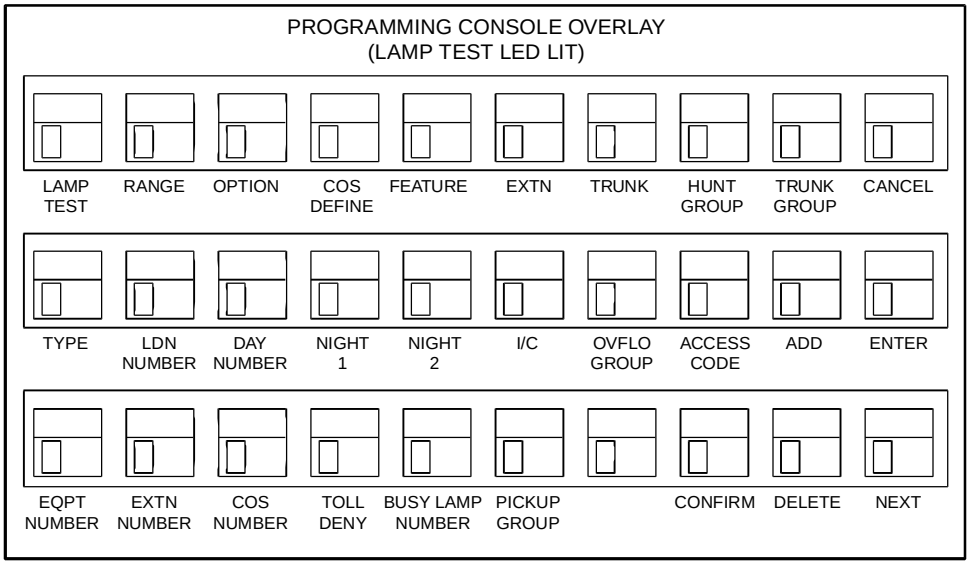


Figure 8-2. Programming Console Overlay on the Attendant Console

2. Press [COS DEFINE] on the attendant console and dial the COS number, COS 5.

   The COS number appears in the destination display.

3. Add options listed in Table 8-3. If you do not know the option codes, consult the system administrator or switch vendor.

Table 8-3. Options to Add to the MWI COS

Option Name
Call Hold and Retrieve Access
SUPERSET 4 Sub-Attendant
SUPERSET 4 Sub-Attendant Message Program
Call Forwarding - Follow Me
Message Waiting Applies
Data Security
Station Override Security

4. Delete the options not required for the integration. Options to be deleted are listed in Table 8-4. If you do not know the option codes, consult the system administrator or switch vendor.

Table 8-4. Options to Delete from the MWI COS

Option Name
Automatic Call Back
Call Forwarding - Busy
Call Forwarding - Don't Answer
Never a Forwardee
Originate Only
Receive Only

Proceed to the next procedure, "Administer the Analog Voice Ports."

Administer the Analog Voice Ports

Each analog voice 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 analog voice ports are also entered into the SID. Sequentially numbering the extensions simplifies the process.

NOTE:
To make sure that you create an extension for each analog voice port, refer to Chapter 3, "Switch Integration Planning", Worksheet B: Extension/LTN Plan. If the integration requires two SIDs, be sure to include the extension numbers for both SIDs.

The following example uses extensions 501, 502, 503, and 504 as voice ports. The corresponding equipment numbers are 10, 11, 12, and 13. They are assigned the COS from our example, COS 4.

Use the following procedure to administer the analog voice ports.

1. Place the Programming Console Overlay on the attendant console as shown in Figure 8-3.

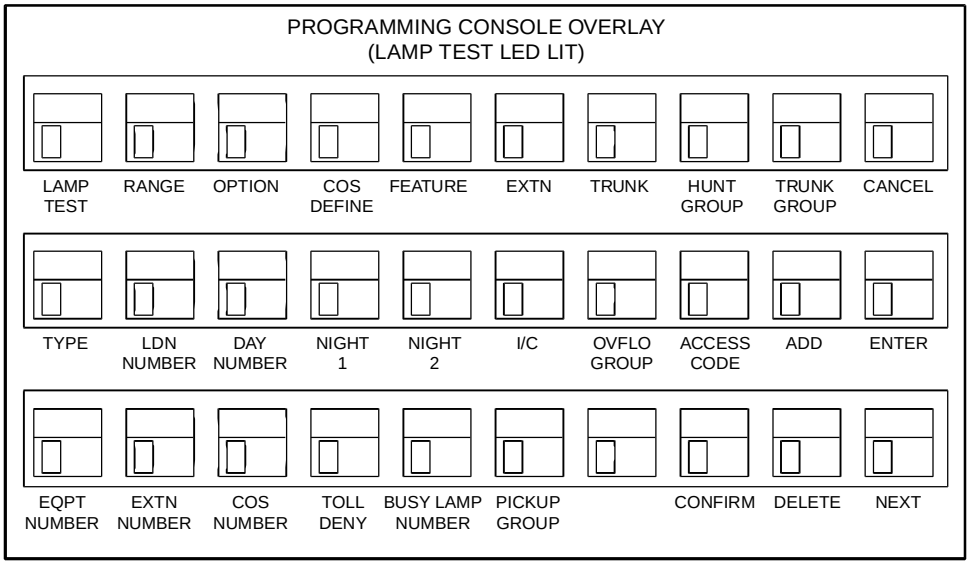


Figure 8-3. Programming Console Overlay on the Attendant Console

2. Press [EXTN].
3. Press [EQPT NUMBER]. The button lamp lights to verify that the button is active.
4. Dial *1* and then *0*, the equipment number of the first analog extension. The destination display shows the equipment number dialed.
5. Press [EXTN NUMBER] on the console.
   - If the attendant console bell rings, an error has occurred. Consult your system administrator or switch vendor for information.
   - If the attendant console does not ring, continue with the next step.
6. Dial extension *501* then press [COS NUMBER].
7. Dial *4*, the COS for extension 501.

   NOTE:
   Do not perform the next two steps until you consult with your system administrator or switch vendor to determine if the steps are required.

8. Press [TOLL DENY] followed by [DELETE].
9. Press [BUSY LAMP NUMBER] followed by [DELETE].
10. Press [PICKUP GROUP] followed by [DELETE].
11. Press [ENTER].

12. Repeat steps 2 through 12 for extensions 502, 503, and 504.
13. When programming for the analog voice port extensions is finished, press NEXT. The SUPERSET LED will light, indicating that the system is in Extended Programming Mode.

Proceed to the next procedure, "Administer the SUPERSET 4."

Administer the SUPERSET 4

The SID emulates four Mitel SUPERSET 4 digital telephone stations to create the integration between the Mitel switch and the Intuity system. For the integration to operate properly, you must administer the SUPERSET on the switch.

In the following example, four SUPERSET 4 telephones will be programmed with specific COS requirements and restrictions. Extensions 511, 512, and 513 will share the same COS, COS 4. Extension 514 will have a unique COS, COS 5.

SUPERSET 4 Programming for the Call Integration Stations

Use the following procedure to configure extensions 511, 512, and 513. The system should still be in Extended Programming Mode.

1. Place the SUPERSET 4 Programming Overlay on the attendant console as shown in Figure 8-4.

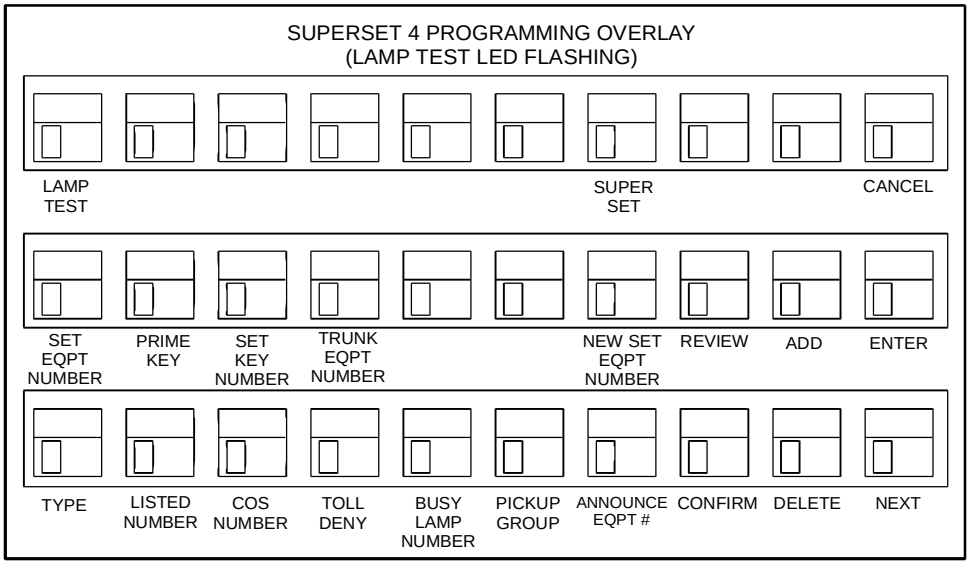


Figure 8-4. SUPERSET 4 Programming Overlay

2. Press [SUPER SET] on the attendant console to start the programming.
3. Press [SET EQPT NUMBER].
4. Dial equipment number *21*, the equipment number corresponding to extension 511.

   Refer to Worksheet C for a list of SUPERSET extensions and equipment numbers to be used with your configuration.
5. Press [PRIME KEY].
6. Press [LISTED NUMBER].
7. Dial the extension number *511*.
8. Press [COS NUMBER].
9. Dial COS number *4*.

   Refer to Worksheet A for the list of COSs to be used with your configuration.
10. Press [ENTER].
11. Repeat steps 2 through 10 for the two remaining call integration SUPERSET 4 extensions in this COS, extensions 512 and 513.

Proceed to the next procedure, "SUPERSET Programming for the Message Waiting Indicator."

SUPERSET 4 Programming for the Message Waiting Indicator

The MWI server is a dedicated SUPERSET 4 phone used to process message waiting notification. Use the following procedure to configure the extension used to perform message waiting processing and to assign busy appearances to it. This example uses extension 514. Analog voice mail port extensions 501 through 504 will be assigned to keys 4 through 7 for busy appearances.

1. Place the SUPERSET 4 Programming Overlay on the attendant console as shown in Figure 8-4.
2. Press [SUPER SET] on the attendant console to start the programming.
3. Press [SET EQPT NUMBER].
4. Dial equipment number *24*, the SUPERSET equipment number corresponding to the MWI extension, 514.
5. Press [PRIME KEY].
6. Press [LISTED NUMBER].
7. Dial extension number *514*.
8. Press [COS NUMBER].
9. Dial COS number *5*, the COS number created for the MWI server extension.

   Refer to Worksheet A for a list of COSs to be used with your configuration.
10. Press [ENTER].
11. Press [SET KEY NUMBER].
12. Press [4] to assign a busy appearance to the MWI server extension.
13. Press [TYPE]
14. Dial *2211* to assign the required types to the MWI server extension. The key sequence assigns the following types:

Table 8-5. Types Assigned to MWI Server Extension

Number	Description
2	line type (using key line)
2	direction variant (incoming only)
1	ring variant (immediate ring)
1	secretarial variant (non-secretarial)

NOTE:
Consult the system administrator if other options are required.

15. Press [LISTED NUMBER].
16. Dial extension *501*. Refer to Worksheet B for a list of extensions to be used with your configuration.
17. Repeat steps 11 through 16 for each of the remaining voice port extensions, extensions 502, 503 and 504. Assign keys 5, 6, and 7 to the corresponding extensions in step 12.

Proceed to the next section, “Administer the Hunt Group.”

Administer the Hunt Group

The Mitel switch recognizes the SID as a group of SUPERSET digital stations. Because the SID acts as a SUPERSET, use the pilot number of the hunt group as the forwarding target for the Intuity system. Worksheet C in Chapter 3, "Switch Integration Planning", contains the pilot number to be used with your configuration.

The following example assumes that three phones (extensions 511, 512, and 513) will be programmed identically and will be the only members of a hunt group whose pilot number will be 500.

Use the following procedure to set up the hunt group for the SID.

1. Press [NEXT] to place the console into standard programming mode.
2. Place the Programming Console Overlay (Lamp Test LED Lit) on the attendant console as shown in Figure 8-5.

NOTE:
The Lamp Test LED Lit overlay is different from the overlay used in previous procedures.

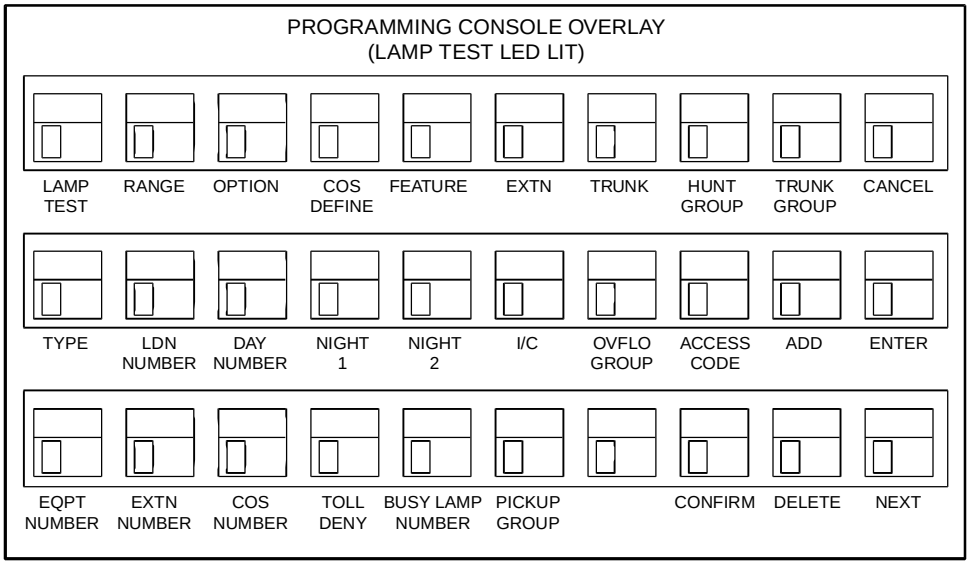


Figure 8-5. Lamp Test LED Lit Programming Overlay

3. Press [HUNT GROUP] on the attendant console to start the programming.
4. Press [1] for Hunt Group 1.
5. Press [ACCESS CODE],
6. Dial the hunt group pilot number, *500*.
7. Press [EQPT NUMBER].
8. Dial the SUPERSET equipment number assigned to extension 511. In our example, 21 is the equipment number assigned to extension 511.

   Refer to Worksheet C for the SUPERSET extensions and equipment numbers to be used with your configuration.
9. Press [EQPT NUMBER].
10. Repeat steps 7 through 9 for the equipment numbers of extensions 512 and 513.

    NOTE:
    Omit from the hunt group list, extension 514, the dedicated MWI processor. This is critical to the proper operation of message waiting operations.

11. Press [LAMP TEST].

12. Remove the programming console overlay and replace it with the overlay that existed before the console was placed into standard programming mode.

Proceed to the next procedure, “Administer Subscriber Station Set.”

Administer Subscriber Station Set

All subscribers are forwarded to the hunt group containing the SUPERSETs. In our example, they are forwarded to extension 500.

Program SUPERSET 4 Telephones

If your SUPERSET 4 telephone was programmed with a name string, and your phone extension is not included, follow these steps.

1. Press the soft key for Program.
2. Press the soft key for Name.
3. Using the dial pad, enter your extension number followed by a blank space followed by your name. Examples are shown below:
   - *201 Smith*
   - *202 JST*

Configure SUPERSET 4 Telephones

1. Press the soft key for Program.
2. Press the soft key for Call Forward.
3. Select the appropriate call forward option:
   - Always Forward
   - When No Answer
   - When Set’s Busy
4. Assign the target extension as *500*, the pilot number for our three SUPERSET telephones. When this is first configured, it automatically places the call in a forwarding mode.

Activate Call Forwarding on SUPERSET 4 Telephones

1. Press the Select Features key.
2. Dial feature *1* for FWD.
3. Press the *ON* soft key,

Deactivate Call Forwarding on SUPERSET 4 Telephones

1. Press the Select Features key.
2. Dial feature *1* for FWD.
3. Press the *OFF* soft key.

Activate Call Forwarding for Analog Telephones

1. Listen for dial tone.
2. Dial the Busy/Ring No Answer feature code provided by your system administrator.
3. Dial extension 500, the SID pilot number.
4. Hang up.

Deactivate Call Forwarding for Analog Telephones

1. Listen for dial tone.
2. Dial the Busy/Ring No Answer feature code provided by your system administrator.
3. Hang up.

Summary

You have finished the Mitel SX-100 or SX-200 switch administration. 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 Mitel switch and an Intuity system. The installation technician administers the SID based on Mitel switch administration information provided by the customer. As you administer the SID configuration, you must perform the following tasks:

- Administer the basic parameters
  - — Number of voice mail ports
  - — Message desk number
  - — Calling party identification (CPID) pad string
  - — Message waiting indicator (MWI) pad string
  - — MWI features
- Assign 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
- Set the security level

If you have two SIDs for an Intuity system larger than 12 ports, perform all SID administration tasks on each SID.

Power On 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:

```
MITEL 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:

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

3. If you have an Intuity system larger than 12 ports, you must use two SIDs. Repeat this procedure for each SID.

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

Administer the Basic Parameters

In Chapter 3, "Switch Integration Planning" you completed "Worksheet A: Switch Integration Information", to determine the values for each of the basic parameters that must be set on the SID. If you did not complete this worksheet, turn to Chapter 3 and complete it 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".

To administer the basic parameters on the SID, use the following procedure:

1. Press FUNC on the SID keypad. The Main Menu appears as shown in the following example.

```
Mitel        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          12
```

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 value, *001*, and move to the CPID Pad String screen, as shown in the following example:

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

7. Enter the CPID extension length from "Worksheet A: Switch Integration Information", or press ENTER to accept the default number of *3* and move to the next line.

8. Press ↓ to accept the default CPID Pad String number of *0000xxx* and 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. Enter the MWI Pad String number, as shown on line 5 of "Worksheet A: Switch Integration Information" or press ↓ to accept the default value of 0000xxx and move to the MWI Feature screen as shown in the following example:

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

11. Press the left and right arrow keys to set the value for the message waiting feature as listed on "Worksheet A: Switch Integration Information" in Chapter 3. The SID defaults to Enable.
12. Press ↓ to accept the value and move to the Call Sequence screen, as shown in the following example:

```
SETUP       Call Sequence:            Call/Data
<-   ->
```

13. Press the left or right arrow key to select Call/Data, as shown on line 9 of "Worksheet A: Switch Integration Information".
14. Press FUNC to save the basic parameter information and return to the Main Menu.

If you are using two SIDs to support an Intuity system larger than 12 ports, administer the basic parameters on the other SID.

To continue the SID configuration, proceed to the next section, “Assign LTNs and Extensions.”

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.

NOTE:
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:                222
```

   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 as described in the preceding section, "Administer the Basic Parameters". 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. Refer to "Worksheet B: Extension/LTN Plan", and use the SID keypad to type the extension corresponding to the LTN. The sample screen uses an extension of 222.

5. Press ↓ to move to the next VM Port screen as shown in the following example:

```
VM Port 2    LTN:                    0002
             Extension:
```

In the example, notice that the LTN default automatically increased by one to 0002. You can also 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.”

6. Repeat steps 4 through 6 for each analog voice mail port on "Worksheet B: Extension/LTN Plan" for SID Number One.
7. When you are finished, press FUNC to return to the Main Menu.

If you are using two SIDs, repeat this procedure for each voice port on "Worksheet B: Extension/LTN Plan" for SID Number Two.

To continue the SID configuration, proceed to the section, "Save and Start the Configuration".

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

```
EDIT       1-Overtype     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 your LTNs start 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 have 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 displays the following prompt:

```
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:

```
Setup Saved...
```

   After a short pause, the SID displays another prompt as shown below:

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

4. 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".

   The following message appears:

```
Restarting System...
```

   The SID pauses for a few seconds then starts the integration, using the new configuration. When the integration starts, the VM_MON screen appears as shown in the following diagram:

```
VM_MON1 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_MON1:      Line:01 Port:0001-350       OK
```

NOTE:
If you are using two SIDs, repeat this procedure for the second 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. Press FUNC to access the Main Menu.

   The Main Menu appears as shown in the following example:

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

2. Press 2 on the SID keypad to select Utils.

   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 select Serial.

   The Serial menu appears as shown in the following example:

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

4. Press 1 on the SID keypad to edit 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
<-  ->
```

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
<-  ->
```

7. Parity must match the parity value on the Mitel 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
<-  ->
```

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 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
<-  ->
```

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 ENTER to confirm your choice, and then press FUNC to return to the Main Menu.

    The SID automatically accepts and saves any information you change. If you are using two SIDs, repeat this procedure for the second SID.

You have completed the SMDI setup. Continue to the procedure in the next section, "Change System Parameters."

Change System Parameters

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

- Time and date
- Remote access device control

NOTE:
Use the instructions in this procedure to change the system parameters on both SIDs.

Setting the Date and Time

Set the date and time when installing the SID system so that 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/Time edit 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.

    The changes you made take effect immediately. 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
← →
```

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 in the field, and then press FUNC to return to the MAIN MENU.

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 to 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 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. You can 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:

```
MITEL       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 edit 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.

NOTE:
If the integration requires two SIDs, repeat this procedure for the second SID.

To log in to Level 1, use the instructions above to access the Login edit 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 both SIDs.

Summary

You have configured the SID to integrate with a Mitel switch and an Intuity system.

Troubleshooting and Error Logs

A

Introduction

Appendix A provides troubleshooting information to help you isolate and correct problems that may occur with an Intuity system integrated with a Mitel switch. The problems outlined in this appendix only refer 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.

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 *ON*.
Possible Reason:	The SID power switch may be set to the *OFF* position.
Remedy:	Turn the SID power switch to the *ON* position.
Possible Reason:	The SID may have a bad fuse.
Remedy:	Contact your AT&T 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 *ON*.
Possible Reason:	The SID power switch may be set to the *OFF* position.
Remedy:	Turn the SID power switch to the *ON* position.
Possible Reason:	The SID may have a bad fuse.
Remedy:	Contact your AT&T service representative for assistance in checking the 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 Mitel 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 cables between the SID and the Intuity system platform may not be correctly connected.
Remedy:	Refer to Chapter 4, "Hardware Installation", and check the cable connections.
Possible Reason:	The Intuity system may not be correctly administered.
Remedy:	Refer to Chapter 6, "Administering the Intuity System for the Mitel 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 SID.
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,” and 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 the Intuity System for the Mitel Integration".
Possible Reason:	The packet format and MWL codes are set incorrectly on the switch.
Remedy:	Refer to Chapter 7, "Mitel SX-200 DIGITAL Switch Administration" or Chapter 8, "Mitel SX-100 and SX- 200 Switch Administration", and 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 Mitel.
Remedy:	Refer to Chapter 7, "Mitel SX-200 DIGITAL Switch Administration" or Chapter 8, "Mitel SX-100 and SX- 200 Switch Administration", and set the information correctly.
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 Mitel modular cable is loose.
Remedy:	Tighten the cable connections.
Possible Reason:	The Mitel modular cable may be defective.
Remedy:	Replace the cable. Refer to Chapter 4, "Hardware Installation", to connect the Mitel modular cable to the SID and to the Mitel 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 Mitel 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 Mitel modular cable may be defective.
Remedy:	Replace the cable. Refer to Chapter 4, "Hardware Installation", for instructions on connecting the Mitel modular cable to the SID and to the Mitel 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 security level 1 features.

The error logs also are available to trained support personnel while assisting with troubleshooting. Use the instructions in this section 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.

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

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

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

Read the explanation of the error log in Table A-1 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.

Table A-1. Error Log Field Explanations

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 displayed 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 occurred. If a severe error occurs frequently, contact your support representative.

The SID can record many different errors. All errors are displayed in the format explained in the previous example. You may use the up arrow and down arrow keys to scroll through the list of messages. Table A-2 on the next page lists all SID error codes and contains a description of each error code

.

Table A-2. 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

Continued on next page

Table A-2. SID Error Codes

Code	Description	Type
29	CP: Unknown PBX Packet	E
30	Cntrx Not Xmting, Reboot	E
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	E
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 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 screen 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...
```

Clear 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 screen 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. 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 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.

Test the Mitel 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 Mitel station emulation.

To test the Mitel 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 Mitel station set emulation.

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

   The Mitel Main Menu appears as shown in the following example.

```
MITEL      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. After you press the key, you see the EM screen as shown in the following example.

```
EM 000  000000000000                          ooooo
P1 poomoo 11:58     1-DEC-92        oooooooooooo
```

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

- The first three characters show the state of the call appearance lamps on the three call processing SUPERSET 4 sets.
- The next 12 characters show the state of the lamps on the busy indicator line appearances.
- The last six characters show the state of the side display messages on the phone currently being used.

The bottom line of the EM screen contains the following:

- The SID uses the bottom line to *echo* or mirror the display string usually shown in the Mitel set.

When the switch updates the lamp status on the Mitel station set, the EM screen changes. Use Table A-3 to understand the meaning of the EM screen display characters.

Table A-3. 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
L or l	Line in use at another set

In addition to viewing the phone activity, the EM screen also allows you to manipulate the phone. Table A-4 lists the SID keys and the action the keys produce on the EM screen.

Table A-4. 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 an Mitel digital station set. Continue to the next procedure, "Test One: Receive a Call at the SID," to perform the first test.

Test One: Receive 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 you dial the number, the EM screen appears as shown in the following example.

```
EM FOO  000000000000                          oooooo
P1 oooooo 201 CALLING                 foooooooooooo
```

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 ▲ to go off-hook. The EM screen changes as shown in the following example.

```
EM SOO  OOOOOOOOOOOO                          oooooo
P1 ootooh 201                         soooooooooooo
```

If you speak into the test subscriber's handset, you can hear the voice through the SID's speaker. To end the test, press ▼ 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 Mitel set was connected instead of the SID. Continue to the next test procedure, "Test Two: Place a Call from the SID."

Test Two: Place 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-5 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-5. SID Key Mapping for Mitel Set Keys

Press MODE then	To Emulate
01	Call appearance 1
04	RNA call appearance 1
05	RNA call appearance 2
06	RNA call appearance 3
07	RNA call appearance 4
08	RNA call appearance 5
09	Busy call appearance 6
10	Busy call appearance 7
11	Busy call appearance 8
12	Busy call appearance 9
13	Busy call appearance 10
14	Busy call appearance 11
15	Busy call appearance 12
16	Display
17	Select
20	Hold

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

   You hear dial tone and the EM screen changes as shown in the following example.

```
EM S00 000000000000                              oooooo
P1 ooooh                                   soooooooooooo
```

3. 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 .

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

```
EM SOO  000000000000                             oooooo
P1 ooosoh 201 RINGING                      soooooooooooo
```

4. Press ▼ to release the call.

   NOTE:
   Use this test procedure on each of the call appearance buttons. Use the right and left arrow keys to move between phones.

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

Test Three: Transfer 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.

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

```
EM FOO  000000000000                             oooooo
P1 oooooo 201 CALLING                      foooooooooooo
```

2. Answer the call on the SID by pressing ▲ on the SID keypad to go off-hook. The EM screen appears as shown in the following example.

```
EM SOO  000000000000                             oooooo
P1 ootooh 201                              soooooooooooo
```

3. Transfer the call by pressing MODE 2 3. You hear a dial tone and the screen appears as shown in the following example.

```
EM S00  000000000000                          oooooo
P1 ooooco                                  soooooooooooo
```

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

4. 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 .

   The EM screen changes as shown in the following example.

```
EM S00  000000000000                          oooooo
P1 oooocr 202 RINGING                      soooooooooooo
```

5. Release the transfer by pressing MODE 2 6 .

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

```
EM S00  000000000000                          oooooo
P1 oooooh                                  soooooooooooo
```

6. Press ▲ to place the phone back on hook. The EM screen appears as shown in the following example..

```
EM 000  000000000000                          oooooo
P1 poomoo 11:58     1-DEC-92           ooooooooooooo
```

You have completed the transfer test. Proceed to the next procedure, “Test Four: Light a Message Waiting Lamp with the SID.”

Test Four: Light a Message Waiting Lamp with the SID

Test Four lights a message waiting lamp through the SID. Use the following instructions to complete the test.

1. Use the left and right arrow keys to access phone four.
2. At the EM screen, press MODE 0 1 then ▲ to go off hook. The EM screen appears as shown in the following example.

```
EM S00  000000000000                          oooooo
P4 oooooh                                  soooooooooooo
```

3. Dial the extension of the test subscriber. For example, if the test subscriber extension is 500, press 5 0 0 .The EM screen appears as shown in the following example.

```
EM S00 000000000000                           oooooo
P4 ooosoh 201 RINGING                      soooooooooooo
```

4. Press MODE 2 4, the Send/Msg key, on the SID keypad.
5. Check to see that the test subscriber's lamp is now lit.
6. Run this test again to turn the test subscriber's lamp off.

If you completed all four tests without any problems, the Mitel 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 Mitel digital station set emulation is configured properly.

NOTE:
If you have two SIDs to support an Intuity system larger than twelve ports, perform the emulation tests on each SID.

Special Processing for Message Waiting Lamps

NOTE:
This procedure, enabling enhanced MWL, 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 MWL transactions, you can perform one of the following actions.

- You can alter the MWL Interleave Factor.

  By decreasing the MWL 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 MWL processing. Continue with the instructions in this section to use the enhanced MWL 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 MWL which quickly increases the size of the buffer. Enhanced MWL handling ensures that only a single entry in the MWL queue is used for a specific subscriber; this reduces the queue loading.

For example, the Intuity system receives three MWL 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 MWL processing defaults to *disabled*. Therefore, the SID queues and processes all MWL 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 MWL processing, the MWL 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 MWL 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 MWL processing feature.

1. Press [FUNC] to access the Setup menu as shown in the following example.

MITEL	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 MWL Enhanced processing to *On*.

   After enabling MWL Enhanced processing, the SID automatically begins to use the feature.

   You do not have to save or restart the configuration.

Summary

This chapter provides troubleshooting information that helps isolate and correct problems that may occur with an Intuity system integrated with a Mitel switch. Appendix B, "Using Views During Integration" provides information concerning real-time viewing of the integration process.

Using Views During Integration

B

Introduction

The SID provides 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_MN1        Line:020   Port:0002-502   OK
```

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 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_MN1 Idle
```

Use the following instructions to access the View mode.

1. At the Main Menu, press [1] to select the View option. The screen clears immediately and is replaced with a dynamic screen that provides information about integration transactions. A screen appears as shown in the following example.

```
VW_MNI        Line:03    Port:0003-503        OK
              MWI SET       ext 201
```

   This screen remains on the display, constantly chaning as calls and message waiting transactions are processed.

1. To access another view, press [MODE] while the dynamic screen is still active. The following menu appears permitting you to select a new way to view integration.

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

2. To exit the View mode screen, press [MODE] to return to the Main Menu.

Monitor Mode

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

```
VW_MNI        Line:03    Port:0003-503        OK
              MWI SET       ext 201
```

Line:02 Port:0002-351	This field indicates the line appearance button from which the SID processed the call.
	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	This field provides status of the call transfer process.
	■ OK indicates that the SID successfully transferred the call to the Intuity system.
	■ RTRY indicates that the SID is again attempting the transfer operation.
	■ ABOR indicates that the caller disconnected during the transfer.
	■ FAIL indicates that the SID could not transfer the call.
	■ NDSP indicates that the SID could not retrieve display information from the Mitel set.
500 501	This field shows a duplicate of the Mitel 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_MNI
                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_MN1        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_MN1        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_MN1  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. The following screen appears.

```
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. 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 A, "Troubleshooting and Error Logs," in the "Test the SID Mitel 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 acts as a passive monitor and allows you to view the activity of the Mitel 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. The following screen appears..

```
MN    FFFW0000  oooooooooooooooooooooo  00S
          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 *echos* or mirrors the 40 character display string shown on the Mitel. 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 change your subscriber usage habits. 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. 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

1. 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

1. 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.

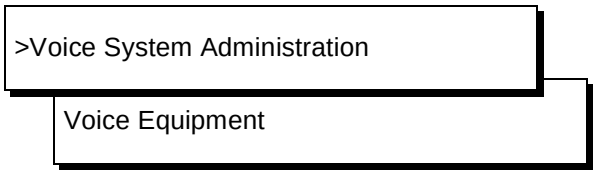
Alternate Message Retrieval Method

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:.



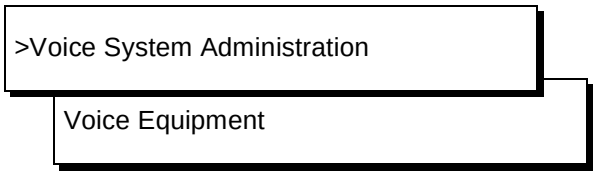
    c. From the Voice Equipment screen, press CHG-KEYS (F8) then ASSIGN (F3).
    d. Select Services to Called Numbers from the Assign menu.
    e. Press CHOICES (F2) and select ldg_ni_vm.
    f. Enter the called number that was administered on the switch for this purpose.
    g. Press SAVE (F3). A command-output 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:



   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

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

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

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 b*asic 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 *Intuity AUDIX Digital Networking*.

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

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

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

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

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

distribution list
See *mailing list*.

DMA
See *direct memory access*.

DSR
See *data set ready*.

DSU
See *data service unit*.

DTE
See *data terminal equipment*.

DTR
See *data terminal ready*.

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

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-vera.

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

modular processor data module (MPDM).
A data device that converts RS-232C or RS-449 protocol signals to digital communications protocol (DCP) used by System 75/85, Generic1, and Generic 3 switches. MPDMs 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 playback a message or prompt to a subscriber.

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

W

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

Index

A

B

C

D

E

F

H

I

K

L

M

N

O

P

R

S

T

U

V

W