Lucent Technologies
Bell Labs Innovations

Intuity™ Messaging Solutions

LAN Integration with DEFINITY® ECS

585-313-602
Comcode 108344813
Issue 1
June 1999

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

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EMC Directive89/336/EEC
Low Voltage Directive73/23/EEC

The "CE" mark affixed to the equipment means that it conforms to the above Directives.

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Acknowledgment
This document was prepared by Product Documentation, Lucent Technologies, Columbus, OH.

Contents

About This Book

Purpose

This book, *Lucent INTUITY Messaging Solutions LAN Integration with DEFINITY ECS*, Issue 1, 585-313-602, contains the procedures required to administer a DEFINITY® Enterprise Communications Server (ECS) Release 7, r, si, and csi to integrate it with a Lucent INTUITY system over a LAN. These procedures are also valid when integrating a Lucent INTUITY system with Lucent Technologies Prologix™, DEFINITY Business Communications System (BCS), and GuestWorks® systems.

NOTE:
To integrate the Lucent INTUITY system using a DCIU or a mode code (inband) link, use *Lucent INTUITY Messaging Solutions Integration with System 75, and DEFINITY Generics 1 & 3, and R5/6*, Issue 1 or later, 585-310-257.

Intended Audience

This document is intended for system administrators, on-site technicians, and remote service center personnel supporting the Lucent INTUITY system.

How This Document Is Organized

This document is organized into the following chapters:

- About This Book

  This preface describes the document's purpose, intended audience, organization, conventions, trademarks and service marks, and related resources. This preface also explains how to make comments about the document.

- Chapter 1, ''Switch Integration Requirements''

  This chapter contains information that explains switch integration requirements. It includes an introduction to the switch integration process, integrations supported for DEFINITY ECS, and configuration diagrams that show the different methods of connecting the LAN link.

- Chapter 2, ''Switch Integration Planning''

  This chapter contains worksheets to completed before performing the switch administration. Installation of the LAN link integration requires completed worksheets.

- Chapter 3, ''Administration for Switch-to-Lucent Intuity System Link''

  This chapter contains procedures for administering a DEFINITY ECS switch for integration with the Lucent INTUITY system.

- Chapter 4, ''Lucent INTUITY System Administration for Switch Integration''

  This chapter contains procedures for administering the Lucent INTUITY system switch parameters to integrate with the switch.

- Chapter 5, ''DCS Administration''

  This chapter contains procedures for administering a Distributed Communications System (DCS) switch network with a Lucent INTUITY system.

- Chapter 6, ''Acceptance Test and Cut-to-Service Administration''

  This chapter explains how to administer the switch to perform acceptance tests for the Lucent INTUITY system, and how to administer the switch for the Lucent INTUITY system cut-to-service process. Cutting over a Lucent INTUITY system requires you to change the coverage path used by all subscribers. Performing a cut-to-service provides all subscribers with voice messaging services.

- Chapter 7, ‘‘Optional Switch Administration for Lucent Intuity System Features’’

  This chapter contains procedures required to administer the switch to operate with the optional features of the Lucent INTUITY system such as AUDIX® Digital Networking, AMIS Analog Networking, and Automated Attendant.

- Appendix A, ‘‘Security’’

  This appendix provides important information for securing the system against telecommunications fraud. Review the information in this appendix before starting the switch integration process.

- Appendix B, ‘‘Alarm and Log Messages’’

  This appendix provides information about the Administrators’ Log and Alarm Log messages that are associated with the LAN link switch integration.

- Appendix C, ‘‘LAN Link Troubleshooting Procedures’’

  This appendix provides instructions for troubleshooting the LAN link.

- Appendix D, ‘‘Converting to a LAN Link Integration’’

  This appendix provides information about changing a system that has been operating with another switch integration to a LAN link integration.

- Appendix E, ‘‘Specific Switch Integration Parameter Administration’’

  This appendix provides instructions for customizing the LAN link switch integration parameters and a listing of the default settings.

- Appendix F, ‘‘Switch Administration for Intuity Lodging’’

  This appendix provides information about operating the system with only the Lucent INTUITY Lodging application or with both INTUITY AUDIX and Lucent INTUITY Lodging.

- Glossary

  This section lists abbreviations and acronyms and their definitions as used in Lucent INTUITY documentation.

- Index

  This section provides an alphabetical listing of principal subjects covered in this document.

Conventions Used

The following conventions are used in this document:

- Rounded boxes represent keyboard keys that you press.

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

  Press ENTER.

- Square boxes represent phone pad keys that you press.

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

  Press .

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

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

  Enter y to continue.

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

  Press

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

- Values, instructions, and prompts that you see on the screen appear as follows: `Press any key to continue.`

- Variables that the system supplies or that you must supply appear in *italics*.

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

  `The file` *filename* `is formatted incorrect.`

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INTUITY Messaging Solutions LAN Integration with DEFINITY ECS
Issue 1
585-313-602

Switch Integration Requirements

1

Overview

This chapter contains information about switch integration processes, terms, and requirements, including:

- An explanation of switch integration and the links available for use with DEFINITY® Enterprise Communications Server (ECS) switches
- A list of supported features
- An explanation of Distributed Communications System (DCS) operations
- Configuration diagrams showing the basic setup methods for connection through a local area network (LAN) link

Purpose

The information in this chapter will help you to understand the basic requirements of the LAN link switch integration *before* administering the integration.

Introduction

Switch integration is the sharing of information between a voice messaging system and a switch to provide a seamless interface to callers and subscribers. A fully integrated voice messaging system uses information sent from the switch to answer telephone calls and also sends information back to the switch.

Information from the switch allows the Lucent INTUITY™ system to react to telephone calls arriving on analog voice ports. Depending on the information received, the Lucent INTUITY system plays a greeting, provides an automated

attendant, permits a user to retrieve messages, or directs unanswered incoming telephone calls to the correct mailbox.

The Lucent INTUITY system also sends information back to the switch. This information tells the switch to update message waiting indicators (MWIs) or to transfer the telephone call to another extension.

If the Lucent INTUITY system does not receive information from or send information to the switch, it is non-integrated. If the system is non-integrated, callers must enter the extension number for the mailbox or service that they want to reach. Also, they cannot transfer through the Lucent INTUITY system to another extension. When the link between the switch and the Lucent INTUITY system is down, calls will still cover to the Lucent INTUITY system but the calls are treated as non-integrated calls.

Integration Types for DEFINITY Communications Systems

The Lucent INTUITY system uses different types of switch integrations for different types of switches. For DEFINITY Enterprise Communications Server (ECS) switches, a Lucent INTUITY system can use one of the following integrations:

- LAN link
- DCIU link
- Mode code (inband) communication

The Lucent INTUITY system supports the use of only one type of switch integration on a single Lucent INTUITY system at a time, although the DEFINITY ECS switches can support more.

NOTE:
To integrate the Lucent INTUITY system using a DCIU or a mode code (inband) link, use *Lucent INTUITY Messaging Solutions Integration with System 75, and DEFINITY Generics 1 & 3, and R5/6*, Issue 1, 585-310-257.

LAN Link

The LAN link allows the DEFINITY ECS and the Lucent INTUITY system to communicate over a private, dedicated LAN, or using a customer's LAN. The DEFINITY ECS is a server, and the Lucent INTUITY system is a client that always initiates the communications session. This link uses a LAN circuit card installed in the Lucent INTUITY system and a C-LAN circuit pack (TN799) installed in the DEFINITY ECS. The two systems use TCP/IP and a specialized DEFINITY protocol to communicate. The LAN link provides the same functionality as a DCIU link.

NOTE:
To use the LAN link, the DEFINITY ECS must be Release 7 or later and equipped with a C-LAN circuit pack (TN799). The Lucent INTUITY system must be Release 4.4 or later and equipped with a LAN interface card.

Digital Communications Interface Unit Link

The Digital Communications Interface Unit (DCIU) link allows the Lucent INTUITY system and a DEFINITY Communications System or ECS to communicate digitally over a serial RS232 interface using BX.25 (X.25) signaling. This link uses a DCIU or EICON circuit card installed in the Lucent INTUITY system and cabled to a Lucent System 75, DEFINITY Communication System Generic 1 (G1), Generic 3 (G3), DEFINITY ECS Release 5/6 (R5/6). Release 7 systems can also support DCIU integrations if the appropriate hardware is available, as in the case of upgraded switches.

NOTE:
The Release 6csi and 7csi (R6csi and R7csi) switches do not support a DCIU link.

DCIU is also referred to as Switch Communication Interface (SCI), Processor Interface (PI), Packet Gateway (PGATE), and X.25.

Mode Code (Inband)

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

Features Overview

Table 1-1 summarizes the features available with the different types of integrations for DEFINITY systems.

Table 1-1. Comparison of Integration Types

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

Table 1-1. Comparison of Integration Types

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

1. With “Basic Transfer”, calls transferred to the switch look like direct calls from the Lucent INTUITY system. They follow the switch's coverage path for the “transfer-to” destination. With “Enhanced Transfer”, the Lucent INTUITY system provides the original calling and called party information, along with an indication of whether or not the switch should allow the call to follow the coverage path for the destination endpoint. Since basic transfer does not provide this information, it can potentially increase the risk of toll fraud. Always monitor your system for evidence of toll fraud and take corrective action immediately if you suspect that there may be a problem.

Distributed Communications System Operations

The Lucent INTUITY system can work with a maximum of 20 DEFINITY switches if the switches are connected in a Distributed Communications System (DCS) network. A DCS network is an arrangement that allows multiple switches in the same or remote locations to work together as one switch. To make DCS networking operate, switches share the same uniform dialing plan and send call information over signaling links between the systems. This table lists the types of connections possible with each DEFINITY model and adjunct endpoints.

Table 1-2. Comparison of Connection Types and Supported Endpoints

DEFINITY ECS Model	Connection Type	Endpoint
R7csi	Ethernet	CMS, Lucent INTUITY System, DCS
	Synchronous PPP	DCS
	ISDN/PRI DS0	DCS+
R7si	Ethernet	CMS, Lucent INTUITY System, DCS
	Synchronous PPP	DCS
	ISDN/PRI DS0	DCS+
	BX.25	CMS, Lucent INTUITY System, DCS, DEFINITY AUDIX
R7r	Ethernet	CMS, Lucent INTUITY System, DCS
	Synchronous PPP	DCS
	ISDN/PRI DS0	DCS+
	BX.25	CMS, Lucent INTUITY System, DCS, DEFINITY AUDIX
Pre-R7 Switches	BX.25	CMS, Lucent INTUITY System, DCS, DEFINITY AUDIX
	ISDN/PRI DS0	DCS+

In a DCS network, extensions on the local switch receive telephone calls from remote extensions as if the remote extension were on the local switch. Callers receive names or extensions on their displays, and can use some of the features on the remote switch.

NOTE:
For detailed examples of the following types of DCS networks:

- Traditional
- D-channel (private network only and public network access/egress)
- Integrated (private or public networks)

see *DEFINITY ECS Release 7 Administration for Network Connectivity*, 555-233-501.

General DCS Communications with a Lucent INTUITY System

In a DCS network with a Lucent INTUITY system, the Lucent INTUITY system connects directly to only one switch. That switch is referred to as the “host” switch, and all other switches in the DCS network are “remote.” In this book, the host switch is assumed to be a DEFINITY ECS R7 switch. Remote switches can be different releases of the DEFINITY switch product line, and the switches can be in the same or a different geographical location. A remote switch does not need to have a direct data link connection to the Lucent INTUITY system to use the Lucent INTUITY system.

In a DCS network, logical paths on physical links provide connectivity for the transmission of message information between each switch and the Lucent INTUITY system through the host switch (Figure 1-1).

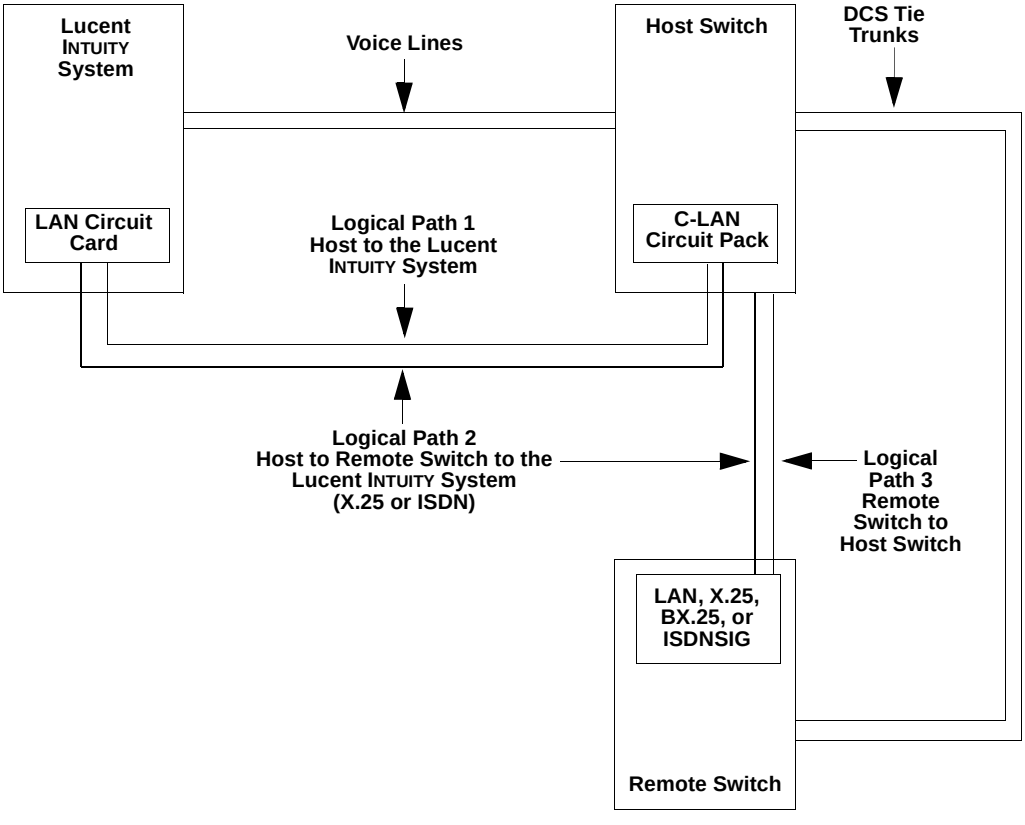


Figure 1-1. Example DCS Network

- The host switch and the Lucent INTUITY system exchange messages over Logical Path 1.
- Using a LAN link, the remote switch and the Lucent INTUITY system exchange messages over the same logical path (not shown in this diagram). The data messages are carried over a LAN between the systems.
- Using an X.25 or ISDN link, the remote switch and the Lucent INTUITY system exchange messages over Logical Path 2. For X.25, the data messages are carried over dedicated facilities between the systems. For ISDN, the data messages are carried over DS1 tie trunks.
- Using a Mode Code link, the remote switch and the Lucent INTUITY system exchange messages over the DCS tie trunks to the host switch, and then over the voice lines to the Lucent INTUITY system. The data messages are also carried over the same lines.
- The host switch and the remote switch exchange messages over Logical Path 3.
- The remote Lucent INTUITY system hunt group can be a coverage point in a call coverage path at a remote switch that is in the DCS network.

Use *DEFINITY ECS Release 7 Administration for Network Connectivity*, 555-233-501, to establish and administer the basic DCS network. Use this book to add the Lucent INTUITY system to an existing DCS network.

DCS Networking with a LAN Link between the Host Switch and the Lucent INTUITY System

When a LAN link is in use between the host switch and the Lucent INTUITY system, the DCS network can use DCIU (X.25, BX.25), ISDN PRI, or LAN links to the remote switches from the host. Each remote switch is associated with an internal, administrable TCP port on the host switch so that the host switch can provide gateway services. Gateway services convert the protocols used in other DCS connections to a protocol that operates with the LAN link. Because of the protocol conversion, earlier version switches operating with other protocols can remain in a DCS network and use existing connections if the DEFINITY ECS R7 is equipped with a TN577 Packet Gateway (r) or TN765 Processor Interface (si) circuit pack. If the DEFINITY ECS 7 or later does not have these circuit packs installed, DCIU connections in an existing DCS network will need to be removed and replaced with LAN connections using the C-LAN (TN799) circuit pack.

The Lucent INTUITY system on the host switch has separately administered logical channels to each of the supported remote switches mapped to TCP ports on the host switch. This administration allows the Lucent INTUITY system to communicate with the remote switches.

The LAN integration into a DCS network allows the Lucent INTUITY system to support a total of 20 DCS switches. For Release 4.4 and earlier, the switches are

numbered from 1 to 20 on the Lucent INTUITY system. For Release 5, the 20 switches can be numbered from 1 to 64. The number must match the number assigned on the DEFINITY ECS. All Lucent INTUITY system features can be activated from both the host and remote switches.

In a network in which a remote switch is connected to the host by a LAN link, the Lucent INTUITY system can send message waiting indicator (MWI) information directly to a remote switch over the LAN. All other information, however, must be sent through the host switch.

LAN Link Connectivity

The LAN link integration requires use of an Ethernet connection to the DEFINITY ECS. The initial release of the integration over the LAN link supports 10baseT (10 Mbps) connectivity only. The Lucent INTUITY system can be connected in a public network or a private network.

Use of the C-LAN Circuit Pack (TN799) with the Lucent INTUITY System

The DEFINITY ECS R7 can support two C-LAN circuit packs. Each C-LAN circuit pack (TN799) can support 17 ports per circuit pack. Of these ports, only one port supports an Ethernet connection required for use with the Lucent INTUITY system. The Lucent INTUITY system LAN link does not operate with the synchronous point-to-point protocol (PPP) provided by the other ports. The other ports can be used for other DEFINITY ECS switches for PPP connection as a part of a DCS network.

DEFINITY TCP Ports

The DEFINITY ECS relies on internal, administered TCP ports to process the information being sent to and from the Lucent INTUITY system. All DEFINITY switches on the LAN should use TCP Port 5002 as the port to the Lucent INTUITY system. If the system will be part of a DCS network, the each remote switch should use the same TCP port number, 5003, since each switch on the LAN has a distinct IP address. For non-IP remote switches, the same host switch will act as the gateway, and a TCP Port number in the range from 6001 to 6999 must be assigned for each switch.

LAN Connectivity Methods

The LAN link connectivity can be done in one of several ways:

- A direct connection from the Lucent INTUITY system's LAN circuit card, using a crossover cable, to the C-LAN circuit pack (TN799) installed in the DEFINITY ECS.
- One connection from the Lucent INTUITY system's LAN circuit card, through a dedicated 10baseT ethernet hub, to the C-LAN circuit pack (TN799) installed in the DEFINITY ECS.
- One connection from the Lucent INTUITY system's LAN circuit card to the customer's LAN, and a separate connection from the customer's LAN to the C-LAN circuit pack (TN799) installed in the DEFINITY ECS.

All of these configurations support the use of DCS networking.

Direct Connectivity

The Lucent INTUITY system can connect to the DEFINITY ECS using a simple crossover cable (Figure 1-2). On the Lucent INTUITY system side, the connection is from the LAN circuit card to the hub. On the DEFINITY ECS side, the connection is from the C-LAN circuit pack (TN799) to the hub.

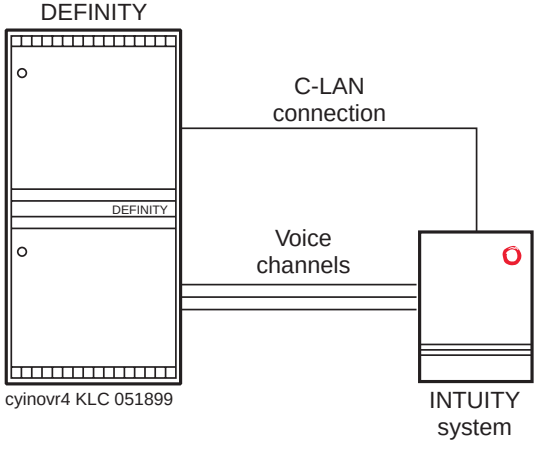


Figure 1-2. Direct Connectivity

Dedicated Hub Connectivity

The Lucent INTUITY system can connect to the DEFINITY ECS using a dedicated 10baseT hub (Figure 1-3). On the Lucent INTUITY system side, the connection is from the LAN circuit card to the hub. On the DEFINITY ECS side, the connection is from the C-LAN circuit pack (TN799) to the hub.

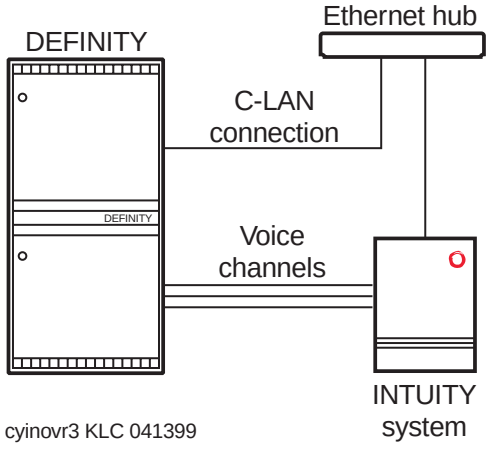


Figure 1-3. Dedicated Hub Connectivity

Customer LAN Connectivity

The Lucent INTUITY system can connect to a router on the customer LAN. In this configuration, the DEFINITY ECS C-LAN circuit pack (TN799) also connects to the customer LAN (Figure 1-4).

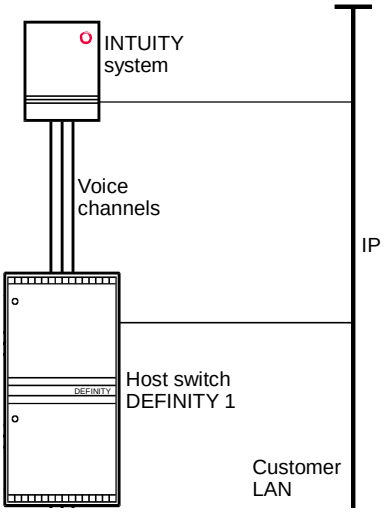


Figure 1-4. Customer LAN Connectivity

DCS Connectivity

The Lucent INTUITY system can be connected for use with a Distributed Communications System (DCS) network either directly to the LAN or to the host switch through the LAN. The Lucent INTUITY system is associated with the host switch because of the voice ports connected between the systems, and the hunt group on the host switch that redirects calls to those voice ports.

In the network, only a DEFINITY ECS that is connected to the Lucent INTUITY system on the LAN and configured to provide gateway services can serve as the host switch. Gateway services allow DCS networking operations with remote switches connected to the host through LAN, DCIU (X.25 and BX.25), and ISDN PRI D-Channel links, making it unnecessary to connect remote switches to the LAN. Gateway services also provide translation and forwarding facilities on separate TCP logical ports on the host DEFINITY. The TCP logical ports are administered on both the Lucent INTUITY system and the DEFINITY ECS.

If another DEFINITY ECS in the DCS network is connected to the LAN, the DEFINITY ECS can receive MWI updates directly from the Lucent INTUITY system over the LAN. However, it must receive messages from the Lucent INTUITY system through the host switch for all other activities.

Figure 1-5 shows an example of a DCS network with the host switch and the Lucent INTUITY system integrated over a LAN. This configuration provides INTUITY AUDIX messaging transparency in a DCS network. It consists of a single Lucent INTIUTY system connected to multiple switches via a host or gateway switch. The voice lines to and from the Lucent INTUITY system terminate in a Uniform Call Distribution (UCD) group on the host switch. Thus, the host switch is a tandem

point for all voice connections between the Lucent INTIUTY system and the other remote switches in the DCS network.

NOTE:
This document does not take into account administration of the DEFINITY ECS in an Expert Agent Selection (EAS) environment or if the DEFINITY ECS is a “high-cap” switch. Contact the Design Center for assistance in planning a system using either of those two features.

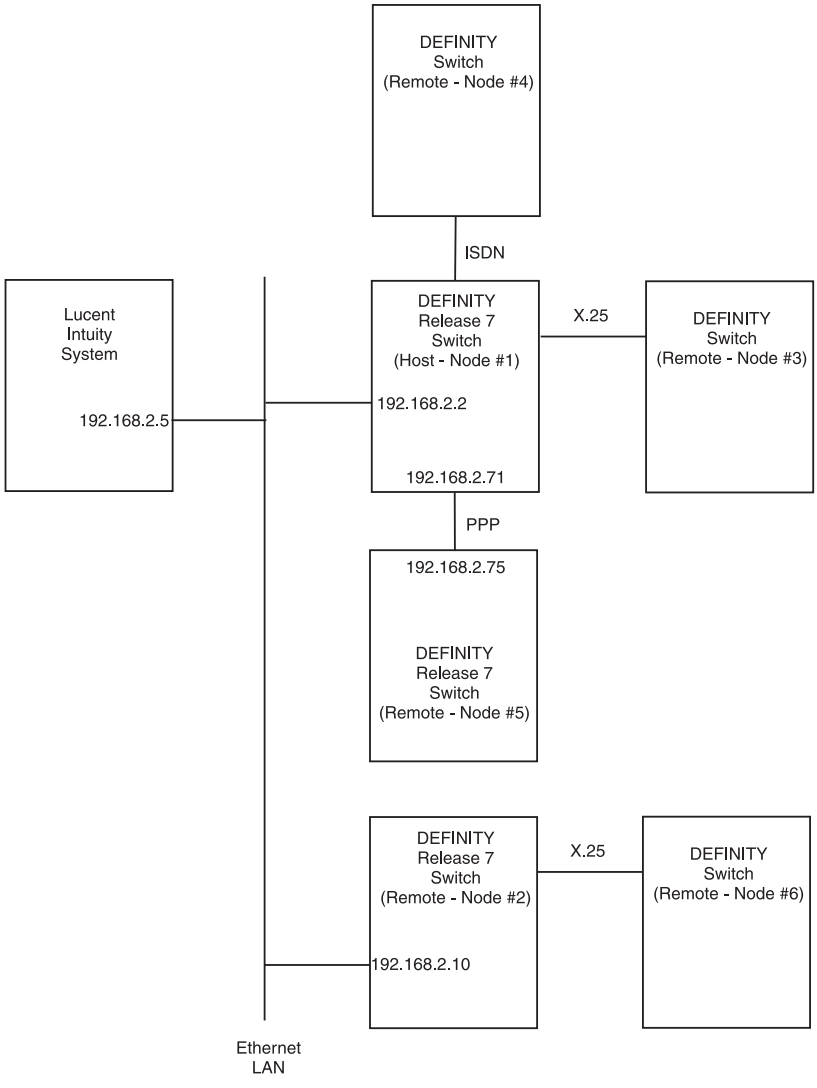


Figure 1-5. Example DCS Connectivity

This example is used as the basis for the procedures given in Chapter 3, "Administration for Switch-to-Lucent Intuity System Link" and Chapter 5, "DCS Administration". See the procedures in those chapters for examples of how you would administer the different types of switches to communicate with the Lucent INTUITY system.

Analog Connectivity

Analog connectivity involves the wiring from the DEFINITY analog ports to the Lucent INTUITY analog ports. This wiring carries the voice and multimedia components of messages coming into or going out of the Lucent INTUITY system.

DEFINITY ECS Circuit Packs that *Do Not* Support the Lucent INTUITY System

Do not use the following DEFINITY circuit packs for analog ports connected to the Lucent INTUITY system:

CAUTION:
Use of the following circuit packs will cause the integration to fail.

- TN746

  Do not connect the voice ports to TN746 circuit packs. The TN746 circuit pack uses 24 Volts and does not work. Connection to the TN746 causes the Lucent INTUITY system to go into alarm. The Lucent INTUITY system requires 48 Volts which is supplied by the TN746B circuit pack.

- TN793 vintage 5 or earlier, or TN2793 vintage 3 or earlier

  Do not connect the voice ports to these vintages of the TN793 or TN2793 circuit packs. These circuit packs have a problem related to neon message waiting lamps (causes electrical damage) and cut-through timing (possible toll fraud issues). Later vintages of these circuit packs will work.

DEFINITY ECS Circuit Packs that Support the Lucent INTUITY System

The following analog port circuit packs support the Lucent INTUITY system:

- TN746B vintage 8 or later
- TN742
- TN791
- TN793 vintage 6 or later
- TN2793 vintage 4 or later

Simultaneous Ringing Considerations

Each analog circuit pack supports 8, 16, or 24 analog voice connections. Depending on the circuit pack and the required number of voice ports, you may need to spread out the voice port assignments over more than one circuit pack. For example, if you are using a 16-port circuit pack, use no more than 4 ports of circuits 1-8 and 4 ports of circuits 9-16 on that circuit pack. If you still need more INTUITY voice ports, select a circuit pack that is at least one-quarter carrier distance away from the first circuit pack.

For example, if your system has 12 voice ports and you assign the first 8 ports to the circuit pack in slot 3, assign the other 4 voice ports to a circuit pack in slot 7 or higher. See more about circuit pack characteristics in the *DEFINITY ECS R7 System Description*.

CAUTION:
Failure to adhere to these considerations can result in ring blockage on the Lucent INTUITY system.

Voice Port Connectivity

Use ordinary tip and ring analog wiring to connect the messaging system to the switch.

1. Run modular cables from each tip and ring board together to the tip and ring distribution panel. (Figure 1-6)
2. Run a 25-pair cable from the distribution panel to an analog-line circuit pack on the switch.

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

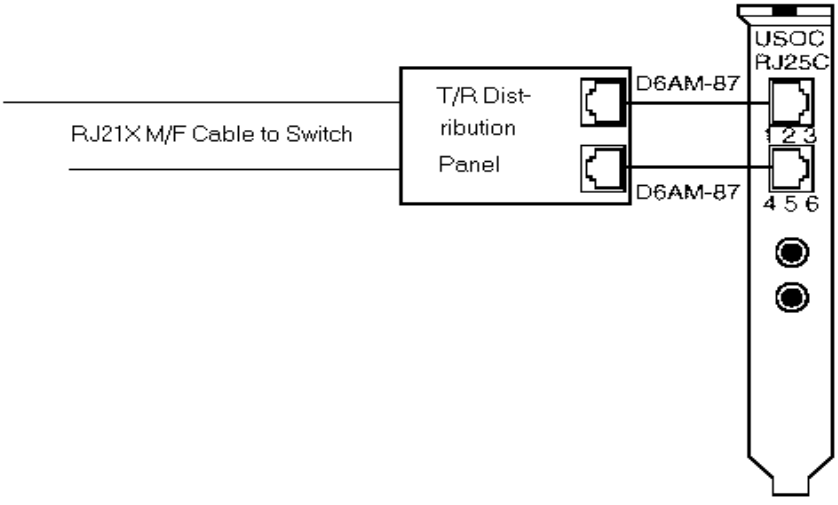


Figure 1-6. Typical Analog Wiring Between Switch and Messaging System

Installation Considerations

Before installation, be sure that the installer has all of the necessary information and that the demarcation for the LAN is clearly understood.

LAN Information Needed for the Installation

Complete the planning worksheets in Chapter 2, "Switch Integration Planning" before the installation. Completing the planning worksheets ensure that the installer has all of the needed information. Some of the information needed includes:

- How is the connection being made from the Lucent INTUITY system to the switch:
  a. Private LAN, no connectivity to customer LAN (uses private LAN addresses):
     — Preferred option, most robust and reliable, no dependency on customer's network
     — Crossover cable used for ease of connections
     — Hub can be used instead of crossover cable to extend distances, if desired; up to four hubs can be used

b. Customer LAN with private segment:

— Preferred option when Lucent INTUITY system Message Manager is needed

— Uses switch or router to provide a private collision domain

— Minimal dependency on customer's network

— Customer must provide equipment and administer network for private segment

— Customer LAN administrator must be present during setup

c. Direct connect to Customer LAN, without private segment:

— Least preferred option

— Complete dependency on performance and reliability of customer's LAN

— Allows remote location of endpoints when customer LAN connectivity is convenient

— Customer LAN administrator must be present during setup

- If option b or c is chosen, the following information is needed from the customer:

a. Customer network physical connectivity questions:

— Location of 10BaseT network access point (hub, router, and so on)

— Distance between C-LAN and network access point (328 ft, 100 m maximum)

— Wiring to access point, existing or new, Category 3 minimum required

b. Customer network administration questions:

— IP address of C-LANs, adjuncts, and gateways

— Node names of C-LANs, adjuncts, and gateways

— Subnet masks for all LAN segments containing C-LANs or adjuncts

— Gateway IP address for all LAN segments containing C-LANs, adjuncts, or routers

— Are all endpoints (C-LANs and adjuncts) on the same local LAN segment?

Network administration information needs to be mapped into specific administration fields.

- Sanity check of information obtained from customer:
  a. If C-LAN and adjuncts are on the same LAN segment:
     — Gateway IP address and subnet mask information is valid
     — All IP addresses contain the same subnet address
  b. If C-LAN and adjuncts are on different LAN segments, gateway IP addresses are different

Without the above information, the Lucent Technologies technician will be unable to complete the installation. Installations that require the technicians to return because information was not available incur additional charges.

LAN Connectivity Demarcation

Lucent Technologies service technicians dispatched for Lucent INTUITY system installation and maintenance may not troubleshoot the customer's LAN. The demarcation point for the Lucent INTUITY system connected into the customer's LAN is the back of the LAN circuit card. ***The LAN cable, the connector at the end of the cable for connection to the Lucent INTUITY system, and LAN administration not performed on the Lucent INTUITY system are the responsibility of the customer unless specified by contract.*** After the system is placed into service, the customer is responsible for maintaining the IP addresses and administration on the Lucent INTUITY system, unless otherwise specified by contract.

Switch Integration Planning

2

Overview

Before you integrate the Lucent INTUITY system with a DEFINITY ECS R7 switch using TCP/IP signaling over a LAN, you must plan the process. This chapter provides the following worksheets and information to help you plan and record the integration:

- Voice port information
- LAN link integration information
- Host switch hunt group information
- Call coverage path assignments
- DCS networking information

Unless noted, these worksheets are valid for all releases of the System 75, DEFINITY G1, G3, and ECS switches, but some fields in the worksheets are not used for all switch releases.

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

Purpose

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

Standard Worksheets

Complete the worksheets in this section to integrate a Lucent INTUITY system with a DEFINITY R7 switch. The worksheets in this section contain the same information the Design Center may have already created. Use these worksheets to verify that you have all required information, and as a single point of reference.

- Worksheet A, ‘‘Voice Port Stations on Host Switch’’, page 2-3
- Worksheet B, ‘‘Voice Port Extensions, Equipment Locations, and Names’’, page 2-7
- Worksheet C, ‘‘LAN Data for Switch Link to the Lucent Intuity System’’, page 2-10
- Worksheet D, ‘‘Names and IP Addresses for Lucent Intuity System’’, page 2-15
- Worksheet E, ‘‘Hunt Group for Host Switch’’, page 2-16
- Worksheet F, ‘‘Call Coverage Path’’, page 2-20
- Worksheet G, ‘‘LAN Data for the Lucent INTUITY System’’, page 2-22

If your Lucent INTUITY system operates in a DCS environment, continue with the appropriate ‘‘DCS Worksheets’’ beginning on page 2-25.

Worksheet A: Voice Port Stations on Host Switch

Complete the information on this worksheet to collect information required to administer the Lucent INTUITY system voice ports on the switch.

NOTE:
When upgrading to a LAN link from an X.25 or mode code link, verify that the voice port stations are correctly administered using the recommended values as shown in these worksheets.

Date:

Prepared By:

Contact Telephone Number:

Field	Recommended	Your Entry
Station Screen Entries for Voice Port Stations: Page 1 (add station *XXX*)		
Extension Enter a unique, valid extension number (3 to 5 digits) for the voice port from the dial plan.	See Worksheet B	
Type	**2500**	
Port Enter a seven-character port number, for example, 01a0501.	See Worksheet B	
Name	See Worksheet B	
Lock Messages	**n**	
Security Code	Leave blank	
Coverage Path 1	Leave blank	
Coverage Path 2	Leave blank	
Hunt-to Station	Leave blank	

Continued on next page

Field	Recommended	Your Entry
BCC Bearer Capability Class is a display-only field with a default of 0 (voice or voice-grade data) for stations. The field appears on the screen only if the ISDN-PRI option is enabled.		
TN	Use default	
Class of Restriction (COR) To prevent toll fraud, Lucent Technologies recommends that you create a COR for voice ports that allows users to call only other numbers with the same COR. If you later decide that users need to call numbers with different CORs, add permissions for the other CORs one at a time. The AMIS Analog Networking, Message Delivery, and Outcalling features require the ability to call numbers with different CORs.		
Class of Service (COS) Create a COS for the voice ports that permits only the Data Privacy and Restrict Call Forwarding Off-Net features. Lucent Technologies recommends that you do not enable any other features on the COS. COS 5 defaults to this setup.		
Tests	**n**	
Off-Premise Station	**n**	
Message Waiting Indicator	Leave blank	
Station Screen for Voice Port Stations: Page 2		
LWC Reception Use **audix** or **none**, the preferred choice being **audix**.	**audix**	
LWC Activation	**n**	
CDR Privacy	**n**	

Continued on next page

Field	Recommended	Your Entry
Redirect Notification	**n**	
Per Button Ring Control	**n**	
Bridged Call Alerting	**n**	
Switchhook Flash	**y**	
Ignore Rotary Digits	**n**	
H.320 Conversion	**n**	
MWI Served User Type	Leave blank	
Coverage Message Retrieval	**n**	
Auto Answer	**none**	
Data Restriction	**n**	
Call Waiting Indication	**n**	
Att. Call Waiting Indication	**n**	
Distinctive Audible Alert	**n**	
Adjunct Supervision Enter **y** if Message Manager is not installed; enter **n** if Message Manager is installed.		
Per Station CPN - Send Calling Number	**n**	
Multimedia Early Answer	**n**	
Audible Message Waiting	**n**	
AUDIX Name For G3r systems, displays the AUDIX name from the User Defined Adjunct Names Screen.		
Messaging Server Name For G3r systems, displays the messaging server name from the User Defined Adjunct Names Screen.		Leave blank
Station Screen for Voice Port Stations: Page 3		
Room	Leave blank	
Jack	Leave blank	
Cable	Leave blank	

Continued on next page

Field	Recommended	Your Entry
Floor	Leave blank	
Building	Leave blank	
Headset		
Speaker	**n**	
Mounting	**d**	
Cord length **Set Color**	**0** Leave blank	
Abbreviated Dialing List1, List2, List3	Leave blank	
Hot Line Destination fields	Leave blank	
Line Appearance	**call-appr**	

Worksheet B: Voice Port Extensions, Equipment Locations, and Names

Enter the location, name, and extension for each of the purchased (maximum of 64) voice ports in the following worksheet.

Date:

Prepared By:

Contact Telephone Number:

Lucent INTUITY Port (card#:port#)	Voice Port Extension	Analog Port Equipment Location[1]	Voice Port Name[2]
Duplicate Station Screen: Page 1 (duplicate station *XXX*)			
1 (0:0)			**AUDIX1**
2 (0:1)			**AUDIX2**
3 (0:2)			**AUDIX3**
4 (0:3)			**AUDIX4**
5 (0:4)			**AUDIX5**
6 (0:5)			**AUDIX6**
7 (1:0)			**AUDIX7**
8 (1:1)			**AUDIX8**
9 (1:2)			**AUDIX9**
10 (1:3)			**AUDIX10**
11 (1:4)			**AUDIX11**
12 (1:5)			**AUDIX12**
13 (2:0)			**AUDIX13**
14 (2:1)			**AUDIX14**
15 (2:2)			**AUDIX15**
16 (2:3)			**AUDIX16**
17 (2:4)			**AUDIX17**
18 (2:5)			**AUDIX18**
19 (3:0)			**AUDIX19**

Continued on next page

Lucent INTUITY Port (card#:port#)	Voice Port Extension	Analog Port Equipment Location[1]	Voice Port Name[2]
20 (3:1)			AUDIX20
21 (3:2)			AUDIX21
22 (3:3)			AUDIX22
23 (3:4)			AUDIX23
24 (3:5)			AUDIX24
25 (4:0)			AUDIX25
26 (4:1)			AUDIX26
27 (4:2)			AUDIX27
28 (4:3)			AUDIX28
29 (4:4)			AUDIX29
30 (4:5)			AUDIX30
31 (5:0)			AUDIX31
32 (5:1)			AUDIX32
33 (5:2)			AUDIX33
34 (5:3)			AUDIX34
35 (5:4)			AUDIX35
36 (5:5)			AUDIX36
37 (6:0)			AUDIX37
38 (6:1)			AUDIX38
39 (6:2)			AUDIX39
40 (6:3)			AUDIX40
41 (6:4)			AUDIX41
42 (6:5)			AUDIX42
43 (7:0)			AUDIX43
44 (7:1)			AUDIX44
45 (7:2)			AUDIX45
46 (7:3)			AUDIX46
47 (7:4)			AUDIX47
48 (7:5)			AUDIX48

Continued on next page

Lucent INTUITY Port (card#:port#)	Voice Port Extension	Analog Port Equipment Location[1]	Voice Port Name[2]
49 (8:0)			**AUDIX49**
50 (8:1)			**AUDIX50**
51 (8:2)			**AUDIX51**
52 (8:3)			**AUDIX52**
53 (8:4)			**AUDIX53**
54 (8:5)			**AUDIX54**
55 (9:0)			**AUDIX55**
56 (9:1)			**AUDIX56**
57 (9:2)			**AUDIX57**
58 (9:3)			**AUDIX58**
59 (9:4)			**AUDIX59**
60 (9:5)			**AUDIX60**
61 (10:0)			**AUDIX61**
62 (10:1)			**AUDIX62**
63 (10:2)			**AUDIX63**
64 (10:3)			**AUDIX64**

1. Enter a seven-character port number, for example, 01a0501. Each analog circuit pack supports 8, 16, or 24 analog voice connections. Depending on the circuit pack and the required number of voice ports, you may need to spread out the voice port assignments over more than one circuit pack. For example, if you are using a 16-port circuit pack, use no more than 4 ports of circuits 1-8 and 4 ports of circuits 9-16 on that circuit pack. If you still need more INTUITY voice ports, select a circuit pack that is at least one-quarter carrier distance away from the first circuit pack.
2. These are the recommended voice port names.

Worksheet C: LAN Data for Switch Link to the Lucent INTUITY System

Use this worksheet to plan the LAN link between a DEFINITY ECS R7 switch and a Lucent INTUITY system.

Date:

Prepared By:

Contact Telephone Number:

Field	Recommended	Your Entry
System Parameters Maintenance: Page 2 (change system-parameters maintenance)		
SPE Optional Boards For the csi model only, you must enable the second packet interface to bridge the packet bus and the processor.		
Packet Intf2	**y**	
Bus Bridge Enter the equipment location of the C-LAN circuit pack that will provide the bus bridge.		
Inter-Board Link Timeslots: **- Pt0** **- Pt1** **- Pt2**	Use defaults	
Node Names Screen: Page 2 (change node-names)		
Switch Node Name Use up to 15 characters		
IP Address	As appropriate	
Data Module Screen (add data-module *XXX*)		
Data Extension Use an unassigned extension number.		
Type	**ethernet**	

Continued on next page

Field	Recommended	Your Entry
Port Enter the equipment location of the TN799 C-LAN circuit pack. For this ethernet link, you will always use circuit number **17**.		
Link Select a link number (1-25 for csi/si, 1-33 for r). This is the Interface Link on the processor channels screen.		
Enable Link Until the processor channels have been assigned and enabled, set this to **n**. After the processor channels have been assigned and enabled, return to this screen and set this to **y**.	**n**	
Name Identifies the data module when using the **list data-module** command. This is for information only.		
BCC Bearer Capability Class is a display-only field with a default of 2 for data modules. The field appears on the screen only if the ISDN-PRI option is enabled.		
Node Name Enter the switch node name assigned on Page 2 of the node names screen.		
Subnet Mask Determines which portion of an IP address is a network address and which is a host identifier. If connecting through the customer's LAN, enter the value provided by the LAN administrator. See *DEFINITY ECS R7 Administration for Network Connectivity*, 555-233-501, for more information.		

Continued on next page

Field	Recommended	Your Entry
Broadcast Address Enter the IP address used for receiving broadcast messages and generally is fixed on the network. Use the switch's network address followed by ".255", such as 192.168.2.255. See *DEFINITY ECS R7 Administration for Network Connectivity*, 555-233-501, for more information.		
Automatic Subnet Routing This controls if you need an IP Route. If endpoints are on different subnets, or endpoints are on the same subnet and this field is set to **n**, and IP route is required. If the endpoints are on the same subnet and this field is set to **y**, and IP route is not required.		
Processor Channel Screen (change communication-interface processor-channels)		
Processor Channel Use an available processor channel.		
Enable	**y**	
Application (Appl)	**audix**	
Gateway To (Gtwy To) Not used with this application.		
Mode	**s**	
Interface Link Identifies the link carrying this processor channel. This must match the Link field on the data module screen.		

Continued on next page

Field	Recommended	Your Entry
Interface Channel Identifies the TCP/IP listen port channel to carry this processor (virtual) channel (5000-64500). Use **5002** for the Lucent INTUITY system link. This must match the TCP Port number on the Lucent INTUITY system Switch Interface Administration screen.	**5002**	
Destination Node Enter the Lucent INTUITY system node name as defined on Page 1 of the node names screen.		
Destination Port	**0**	
Session Local This must match the Local Node Number on the dial plan screen.	**1**	
Session Remote This must match the Audix Number field of the Lucent INTUITY system Switch Interface Administration screen.	**1**	
Machine ID (Mach ID) This must match the Audix Number field of the Lucent INTUITY system Switch Interface Administration screen.		
IP Routing Screen (add ip-route *XX*)		
Route Number If the link between the switch and the Lucent INTUITY system is a dedicated link through a hub, you only need to assign one IP route. If you are going through a router, you must set up IP route 1 from the switch to the router, and then set up IP route 2 from the switch to the Lucent INTUITY system.		

Continued on next page

Field	Recommended	Your Entry
Destination Node Enter the node name of the final destination of this route. This could be the node name of a router or the node name of the Lucent INTUITY system.		
Gateway This is the node name of the gateway by which the destination node is reached for this route. This is either the local C-LAN port or the first intermediate node between the C-LAN port and the final destination (the Lucent INTUITY system). For example, if there were one or more routers between the C-LAN port and the final destination node, the Gateway would be the node name of the first router.		
C-LAN Board Enter the equipment location of the C-LAN circuit pack that provides this route. It is possible to have more than one C-LAN circuit pack.		
Metric Enter **0** if there are no intermediate nodes between the switch C-LAN and the Lucent INTUITY system. Enter **1** if there are one or more intermediate nodes between the switch and the Lucent INTUITY system. Consult with the customer LAN administrator before setting this field.		

Worksheet D: Names and IP Addresses for Lucent INTUITY System

Complete the information on this worksheet to collect information required to administer the Lucent INTUITY system for integration with the switch.

Date:

Prepared By:

Contact Telephone Number:

Field	Recommended	Your Entry
DEFINITY ECS Node/Adjunct Names Screen: Page 1 (change node-names or change adjunct-names)		
AUDIX Name Enter a names up to 7 characters long. When connecting to an *r* model switch, you can have up to 8 Lucent INTUITY systems.		
IP Address Enter the IP address administered for each Lucent INTUITY system. This is not required if the link is X.25.		
Lucent INTUITY System TCP/IP Administration Screen (TCP/IP Administration, Network Addressing or Networking Administration, TCP/IP Administration)		
TCP/IP Interface	**eeE_0**	
Host Name (UNIX Machine Name) This information may already be administered. If not, enter the UNIX name for this machine. The name is case-sensitive.		
IP Address IP address administered on the Lucent INTUITY system		
Subnet Mask		
Default Gateway IP Address	Optional	

Worksheet E: Hunt Group for Host Switch

The following information is required to define a hunt group (containing the voice port members) for the Lucent INTUITY system voice ports.

NOTE:
Only the number of ports actually purchased should be administered in the hunt group.

Date:

Prepared By:

Contact Telephone Number:

Field	Recommended	Your Entry
Hunt Group Screen: Page 1 (add hunt-group *xx*)		
Group Number Enter the number to identify the Lucent INTUITY hunt group. This number, preceded by the letter "h", is entered in the voice port Coverage Path screen and in user coverage paths.		
Group Name Enter the name you want to appear on display sets when users call the Lucent INTUITY system. You must include the word "AUDIX" in the name for G3-MA to recognize the name as a Lucent INTUITY group.		
Group Extension Enter the extension number you want local and remote users to dial to retrieve their messages from the Lucent INTUITY system.		
Group Type	**ucd-mia**	
TN	Use default	

Continued on next page

Field	Recommended	Your Entry
COR Enter the Class of Restriction (COR) you want assigned to the extension that users will call to reach the Lucent INTUITY system. For security reasons, assign AUDIX and Lodging hunt groups their own CORs that have been restricted from accessing all outgoing trunks or only those trunks needed for Outcalling or AMIS Analog Networking. The default COR is *not* recommended.		
Security Code	Leave blank	Leave blank
ISDN Caller Display If ISDN-PRI is enabled, enter **grp-name** or **mbr-name** to specify whether the hunt group name or number is sent to the originating user.	Leave blank	
ACD This is normally disabled. It can be used if the switch supports CMS with the EAS feature. CMS and EAS are not covered in this book.	**n**	
Queue	**y**	
Vector The Lucent INTUITY hunt group may be vector-controlled if call vectoring is a feature on the switch.	**n**	
Coverage Path	Leave blank	Leave blank

Continued on next page

Field	Recommended	Your Entry
Night Service Destination Enter the destination where calls to this hunt group redirect when the hunt group is in the night service mode. Allowable entries are an assigned extension number, the attendant, or a blank. Leave the field blank for most applications unless the application requires calls to be redirected when the hunt group is in night service mode.	Leave blank	Leave blank
MM Early Answer	**n**	
Queue Length Enter the number of configured Lucent INTUITY voice ports. For example, if you have 12 voice ports administered to carry voice messaging traffic, enter **12** in this field.		
Calls Warning Threshold	Leave blank	Leave blank
Calls Warning Port	Leave blank	Leave blank
Time Warning Threshold	Leave blank	Leave blank
Time Warning Port	Leave blank	Leave blank
Hunt Group Screen: Page 2		
Message Center	**audix**	
Audix Extension		
Message Center AUDIX Name For an *r* model system, enter the AUDIX name from the Node Names or Adjunct Names screen.		
Primary This field is only used for G3r.	**y**	
Calling Party Number to INTUITY AUDIX Enter **n** if Calling Party Number (CPN) is not used; enter **y** if CPN is used.		

Continued on next page

Field	Recommended	Your Entry
LWC Reception	**none**	
AUDIX Name For an *r* model system, enter the AUDIX name from the Node Names or Adjunct Names screen.		
Messaging Server Name	Leave blank	
First Announcement Extension:	Leave blank	
Delay:	Leave blank	
Second Announcement Extension:	Leave blank	
Delay:	Leave blank	
Recurring		
Hunt Group Screen: Page 3		
Extension (Ext)	See Worksheet B	

Worksheet F: Call Coverage Path

Complete this worksheet to define a call coverage path for unanswered calls redirected to AUDIX and for callers retrieving their messages.

Date:

Prepared By:

Contact Telephone Number:

Field	Recommended	Your Entry
Call Coverage Path Screen (add coverage path *XX*)		
Coverage Path Number Enter a call coverage path number.		
Next Path Number If desired, enter the second path to which calls will be directed if the first path fails.		
Hunt after Coverage	**n**	
Coverage Criteria		
Station/Group Status Active? (Inside Call/ Outside Call) Enter **n/n** for a multiappearance telephone; enter **y/y** for a single-line telephone.		
Busy? (Inside Call/Outside Call)	**y/y**	
Don't Answer? (Inside Call/Outside Call)	**y/y**	
All? (Inside Call/Outside Call)	**n/n**	
DND/SAC/Go to Cover? (Inside Call/Outside Call)	**y/y**	

Continued on next page

Field	Recommended	Your Entry
Terminate to coverage Pts. with Bridged Appearances	**n**	
Number of rings Enter the number of rings (1–99) you want before a call goes to coverage.	**3**	
Coverage Points In the `Point1` field, enter **h** followed by the Lucent INTUITY voice ports hunt group number.		

Worksheet G: LAN Data for the Lucent INTUITY System

Complete the information on this worksheet to administer the Lucent INTUITY system for integration with the switch.

Date:
Prepared By:
Contact Telephone Number:

Field	Recommended	Your Entry
Lucent INTUITY System Switch Interface Administration Window		
Extension Length Use the extension length from the switch dial plan		
Host Switch Number Use **1** if the integration supports only one DEFINITY switch. If more than one DEFINITY system will be supported, use the number administered on the Local Node Number field in the host switch dial plan.		
AUDIX Number The number assigned to the Lucent INTUITY system on the DEFINITY ECS. For *r*-model switches, a number from **1** to **8**; for *csi* and *si*, **1**. This must match the Machine-ID field of the Processor Channels screen.		
Switch Number Enter the node number of the switch being administered. If there is only one switch, the value must be **1**. This must match the Local Node Number field in the switch dial plan.		

Continued on next page

Field	Recommended	Your Entry
IP Address/Host Name Enter the IP address for the switch being administered.		
TCP Port Enter a TCP port number for each switch being administered. This must match the Interface Channel field of the Processor Channels screen. You should use **5002** for every switch linked over the LAN in a DCS network. Use the numbers **6001-6999** for gateway TCP links to remote switches in a DCS network.		
Lucent INTUITY TCP/IP Networking Administration Window (optional)		
Local Domain Name Use only if you use a host name instead of an IP address. This is used only if the customer LAN supports Domain Name Service (DNS).		
DNS-1 Server address; use only if you use a host name instead of an IP address		
DNS-2 Server address; use only if you use a host name instead of an IP address		

Continued on next page

Field	Recommended	Your Entry
DNS-3 Server address; use only if you use a host name instead of an IP address		
DNS-4 Server address; use only if you use a host name instead of an IP address		
DNS-5 Server address; use only if you use a host name instead of an IP address		

You have completed the standard worksheets and planning necessary for a Lucent INTUITY system switch integration. If you do not have a DCS environment, continue with Chapter 3. If you are placing a Lucent INTUITY system in a DCS network, continue with "DCS Worksheets".

DCS Worksheets

After completing the "Standard Worksheets" starting on page 2-2, complete the worksheets in this section if the Lucent INTUITY system operates in a DCS environment. If you have an existing DCS network or if you are installing a new network, the BCS Design Center may have designed the DCS network for the Lucent INTUITY system. The worksheets in this section contain the same information the Design Center may have already created. Use these worksheets to verify that you have all required information, and as a single point of reference.

- Worksheet H, "Time Zones for DCS Networks", page 2-26
- Worksheet I, "Hunt Group for Remote Switch(es)", page 2-28
- Worksheet J, "Signaling Group for Remote Switch(es) — ISDN Signaling", page 2-31
- Worksheet K, "R7 Gateway Processor Channels", page 2-34
- Worksheet L, "Signaling Group for Host Switch — ISDN Signaling", page 2-37
- Worksheet M, "TSC Gateway Channel Assignment for Host Switch — ISDN Signaling", page 2-40

For each remote switch in the DCS network, complete one set of DCS worksheets. Before you start with the worksheets, remove the blank worksheets from this book and make copies for each switch in the network.

Worksheet H: Time Zones for DCS Networks

Date:

Prepared By:

Contact Telephone Number:

DCS networked switches may be located in different time zones. For the Lucent INTUITY system to operate with a switch in a DCS network, you must administer the time zones and daylight savings options on the Lucent INTUITY system Switch Time Zone screen. Before you administer the Switch Time Zone screen, complete the following worksheet.

NOTE:
These fields are administered on the Lucent INTUITY system under the AUDIX Administration menu.

Switch Name and Location	Switch Number	Time Zone	Daylight Savings
Switch Time Zone Screen (change switch-time-zone)			
The name and location of the switch to help during planning.	A digit from 1–64 that identifies each switch in the DCS network. You can have a maximum of 20 switches.	Identifies the time zone for the switch. The number indicates the number of time zones west of Greenwich. Here are the U.S. time zones: 4 – Atlantic Standard 5 – Eastern Standard (default) 6 – Central Standard 7 – Mountain Standard 8 – Pacific Standard 10 – Hawaii and Alaska Standard	Indicates whether daylight savings is active on the remote switch. Enter **y** (yes) or **n** (no). The default is yes.

Continued on next page

Worksheet I: Hunt Group for Remote Switch(es)

Complete this worksheet for each DCS switch-node that has mailboxes for users of the Lucent INTUITY system. The information is required to define a hunt group for the Lucent INTUITY system voice ports for a remote switch.

Date:

Prepared By:

Contact Telephone Number:

Field	Recommended	Your Entry
Hunt Group Screen: Page 1 (add hunt-group *XX*)		
Group Number Enter the number you plan to use to identify the remote switch Lucent INTUITY hunt group. This number, preceded by the letter "h", is entered on the voice port Coverage Path screen for the remote switch and in remote user coverage paths.		
Group Name Enter the name you want to appear on display sets when users call the Lucent INTUITY system. You must include the word "AUDIX" in the name for G3-MA to recognize the name as a Lucent INTUITY group.		
Group Extension Enter the extension number of the hunt group on this switch. Users will not typically dial this number to retrieve messages; they will dial the extension number of the hunt group at the host switch.		
Group Type	**ucd** or **ucd-mia**	

Continued on next page

Field	Recommended	Your Entry
COR Enter the COR you plan to assign to the extension users call to access the Lucent INTUITY system. For security reasons, assign a unique COR to the Lucent INTUITY hunt group that restricts access to all outgoing trunks or only those trunks needed for Outcalling or AMIS Analog Networking. Do not use the default COR.		
Security Code	Leave blank	
ISDN Caller Disp If ISDN-PRI is enabled, enter **grp-name** or **mbr-name** to specify whether the hunt group name or number is sent to the originating user.		
ACD	**n**	
Queue	**n**	
Vector (y/n)? The Lucent INTUITY hunt group may be vector-controlled if call vectoring is a feature on the switch.	**n**	
Coverage Path	Leave blank	
Night Service Destination Enter the destination where calls to this hunt group redirect when the hunt group is in the night service mode. This can be an extension, the attendant, or blank. This field will be left blank for most applications, except when calls must be redirected when the hunt group is in night mode.	Leave blank	
Hunt Group Screen: Page 2 (on some systems, this information is on Page 1)		
Message Center	**rem-AUDIX**	
Audix Extension		
Message Center AUDIX Name For an *r* model system, enter the AUDIX name from the Node Names or Adjunct Names screen.		

Continued on next page

Field	Recommended	Your Entry
Primary This field is only used for G3r.	**y**	
Calling Party Number to INTUITY AUDIX Enter **n** if Calling Party Number (CPN) is not used; enter **y** if CPN is used.		
LWC Reception	**none**	
AUDIX Name For an *r* model system, enter the AUDIX name from the Node Names or Adjunct Names screen.		
Messaging Server Name	Leave blank	
First Announcement Extension:	Leave blank	
Delay:	Leave blank	
Second Announcement Extension:	Leave blank	
Delay:	Leave blank	
Recurring		

Worksheet J: Signaling Group for Remote Switch(es) — ISDN Signaling

Complete the information on this worksheet to define the ISDN signaling group for a remote switch in a DCS/ISDN environment.

Date:

Prepared By:

Contact Telephone Number:

Field	Recommended	Your Entry
Signaling Group Screen: Page 2 (change signaling-group *XX*)		
Service Feature Enter the service type for all administered NCA-TSCs assigned in this signaling group. The default is a blank. Valid values are: ■ **accunet** ■ **i800** ■ **inwats** ■ **lds** ■ **mega800** ■ **megacom** ■ **multiquest** ■ **nca-tsc** ■ **operator** ■ **sdn** ■ **sub-operator** ■ **wats-max-bnd** ■ **[user-defined services]**	As specified by the design center	

Continued on next page

Field	Recommended	Your Entry
As-needed Inactivity Time-out (min) Enter the inactivity time-out for as-needed NCA-TSCs assigned in the signaling group. An as-needed administered NCA-TSC staying inactive in this time period will be removed from service. Valid entries are 10-90. The default is a blank.		
TSC Index Enter the TSC Index chosen on the host switch. This index is entered on Worksheet L.		
Local Ext Enter the Dest. Digits entered on Worksheet L. This assigns an extension on the switch to the administered NCA-TSC.		
Enabled	**y**	
Established	**permanent**	
Dest. Digits Enter the Local Ext entered on Worksheet L. These are the digits needed to route the administered NCA-TSC to the far-end switch. Valid entries are the digits 0–9, the plus sign (+), asterisk (*), and pound sign (#) special characters. Entries can include up to 15 digits. The default is a blank.		
Application Use **audix** if the connection is to a Lucent INTUITY system. Use **dcs** if the connection is to another switch in a DCS network.		
Adj Name (G3r only) Enter the name of the Lucent INTUITY system entered on Worksheet A to be used on the G3r User Defined Adjunct Names or Node Names screen.		

Continued on next page

Field	Recommended	Your Entry
Machine ID Enter the machine ID of the far-end switch to which this NCA-TSC is to be connected.		

Worksheet K: R7 Gateway Processor Channels

Use this worksheet to plan the gateway processor channels. These gateways are used to convert between BX.25, ISDN, and TCP/IP. Complete one copy of this worksheet for each switch in the DCS network that requires this conversion. When converting TCP/IP and X.25, there are two gateway TCP/IP channels assigned; one on the TCP/IP link and one on the X.25 link.

Date:
Prepared By:
Contact Telephone Number:

Field	Recommended	Your Entry
Processor Channel Screen (change communication-interface processor-channels)		
Processor Channel Use an available processor channel.		
Enable	**y**	
Application (Appl) Use **gateway** to convert between ISDN and BX.25 or TCP/IP. Use **gtwy-tcp** to convert between BX.25 and TCP/IP.		
Gateway To (Gtwy To) When the Application field is set to **gtwy-tcp**, this field identifies the processor channel for which this processor channel is serving as a gateway. This is not used if the Application is set to **gateway**.		
Mode Enter **s** (server) for the gateway processor channel that is converting to TCP/IP. Leave blank for any other application.		

Continued on next page

Field	Recommended	Your Entry
Interface Link Identifies the link carrying this processor channel. One will match the Link field on the X.25 data module screen and one will match the Link field on the TCP/IP (Ethernet or PPP) data module field.		
Interface Channel On the BX.25 processor channel, this must be in the range of 1-64. On the TCP/IP processor channel, this identifies the TCP/IP listen port channel to carry this processor (virtual) channel (5000-64500). Use **6001-6999** for any gateway links in the DCS network. On the remote switch, use **0** to allow any available interface channel to be used for this connection.		
Destination Node Leave blank for the BX.25 processor channel. For the TCP/IP processor channel, enter the remote destination switch node name as defined on the data module screen.		
Destination Port At the host switch, enter **0**. At the remote switch, enter the Interface Channel administered on the host switch.		

Continued on next page

Field	Recommended	Your Entry
Session Local For a gateway switch on the LAN, enter the local node number of the remote switch. For a gateway switch to the host, this must be opposite of the Session Remote field.		
Session Remote For a gateway switch on the LAN, enter the Lucent INTUITY system node number. For a gateway to the host switch, enter the switch local node number.		
Machine ID (Mach ID)	Leave blank	

Worksheet L: Signaling Group for Host Switch — ISDN Signaling

Complete the information on this worksheet to define the ISDN signaling group for the host switch in a DCS/ISDN environment. When defining a gateway, you must create a separate signaling group and TSC.

Date:

Prepared By:

Contact Telephone Number:

Field	Recommended	Your Entry
Signaling Group Screen: Page 2 (change signaling-group *XX*)		
Service Feature Enter the service type for all administered NCA-TSCs assigned in this signaling group. The default is a blank. Valid values are: ■ **accunet** ■ **i800** ■ **inwats** ■ **lds** ■ **mega800** ■ **megacom** ■ **multiquest** ■ **nca-tsc** ■ **operator** ■ **sdn** ■ **sub-operator** ■ **wats-max-bnd** ■ **[user-defined services]**	As specified by the design center	

Continued on next page

Field	Recommended	Your Entry
As-needed Inactivity Time-out (min) Enter the inactivity time-out for as-needed NCA-TSCs assigned in the signaling group. An as-needed administered NCA-TSC staying inactive in this time period will be removed from service. Valid entries are 10-90. The default is a blank.		
TSC Index This is a display only field that shows the administered NCA TSC index representing one DCS logical channel connecting any two switches. You must create one TSC Index for the DCS link and, if needed, one TSC Index for the gateway link.		
Local Ext Enter an unassigned extension number. This must match the Local Ext field on Worksheet J. This assigns an extension on the switch to the administered NCA-TSC.		
Enabled	**y**	
Established	**permanent**	
Dest. Digits Enter the digits needed to route the administered NCA-TSC to the far-end switch. This must match the Dest Digits field on Worksheet J. Valid entries are the digits 0–9, the plus sign (+), asterisk (*), and pound sign (#) special characters. Entries can include up to 15 digits. The default is a blank.		

Continued on next page

Field	Recommended	Your Entry
Application Enter **dcs** for the TSC Index used to connect two switches for DCS. Enter gateway if the TSC Index is used as a **gateway** between two switches for DCS.		
Adj Name (G3r only) Enter the name of the Lucent INTUITY system entered on Worksheet A to be used on the G3r User Defined Adjunct Names or Node Names screen.		
Machine ID Enter the machine ID of the far-end switch to which this NCA-TSC is to be connected. Leave blank for a gateway link.		

Worksheet M: TSC Gateway Channel Assignment for Host Switch — ISDN Signaling

Complete the information on this worksheet to plan the channel assignments for a DCS/ISDN TSC Gateway. This may need to be done for the link to a Lucent INTUITY system or to another switch in a DCS network.

Date:	
Prepared By:	
Contact Telephone Number:	

Field	Recommended	Your Entry
ISDN TSC Gateway Channel Screen (change isdn tsc-gateway)		
Sig Group Enter the signaling group number from Worksheet L.		
Adm'd NCA TSC Index Enter the TSC Index number from Worksheet L.		
Processor Channel Enter the processor channel number from the gateway on the host switch.		
Application Use **audix** if the connection is to a Lucent INTUITY system.		

Administration for Switch-to-Lucent INTUITY System Link

3

Overview

The process of integrating a DEFINITY® ECS Release 7 or later switch and a Lucent INTUITY™ system involves a series of tasks to prepare the DEFINITY to work with the Lucent INTUITY system. This section shows what administration is required on the switch.

NOTE:
The DEFINITY ECS must be Release 7 or later and equipped with a C-LAN circuit pack (TN799). The Lucent INTUITY system must be Release 4.4 or later and equipped with a LAN interface card.

Configuration Diagram

Figure 3-1 illustrates the basic configuration for the procedures described in this chapter.

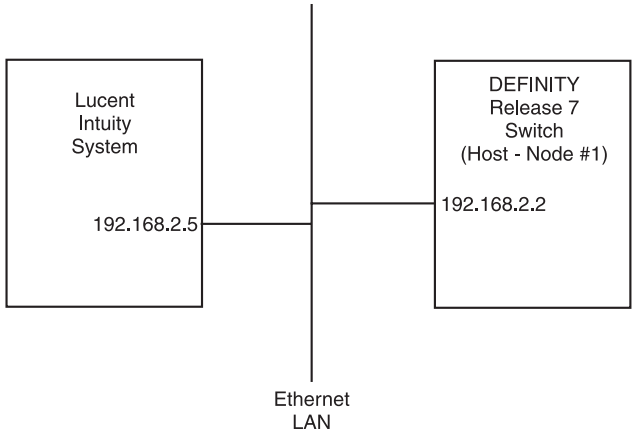


Figure 3-1. Switch-to-Lucent INTUITY System Basic Configuration

Procedure Overview

The following procedures must be done on the “Host - Node #1” switch:

- Administer the local node number in the dial plan.
- Administer the Lucent INTUITY system voice ports as stations, including Class of Restriction (COR) and Class of Service (COS).
- If the switch is a *csi* model, assign the bus bridge.
- Assign node names for the Lucent INTUITY system and the switch.
- Administer a hunt group, and add the Lucent INTUITY system voice ports to that hunt group.
- Add an ethernet data module.
- Administer a processor channel for the link from the switch to the Lucent INTUITY system.
- Enable the link on the ethernet data module.
- Set up a coverage path for access to the voice port hunt group.
- Apply the coverage path to stations, and if the switch is an *r* model, specify the node name of the Lucent INTUITY system for each station that has a voice mailbox on the Lucent INTUITY system.

Host Switch Procedures

Do the following procedures to administer the host switch.

Administer the Local Node Number

Use the following procedure to administer a local node number in the switch dial plan:

1. Enter **change dialplan**

   The system displays the Dial Plan Record screen (Figure 3-2).

```
change dialplan                                          Page   1 of   1
                            DIAL PLAN RECORD

                                                 Local Node Number: 1
                                                   ETA Node Number:
        Uniform Dialing Plan: none               ETA Routing Pattern:

FIRST DIGIT TABLE
First                                Length
Digit  - 1 -       - 2 -       - 3 -       - 4 -       - 5 -       - 6 -
  1:                           extension
  2:                           extension
  3:                           extension
  4:                           extension
  5:                           extension
  6:                           extension
  7: misc
  8: fac
  9: fac
  0: attd
  *:                           fac
  #:             fac
```

Figure 3-2. Sample Dial Plan Record Screen (Host - Node #1)

2. Enter a **1** in the Local Node Number field. If this field is already populated, record the administered node number.
3. Press ENTER to save the information.
4. Continue with the next procedure, "Administer the Voice Port as Stations".

Administer the Voice Port as Stations

Administer a voice port for each of the ports on the Lucent INTUITY AUDIX system that is connected to the host switch. For example, if you have a 64-port Lucent INTUITY system, administer 64 voice ports.

To administer the voice ports, complete the following procedures in this section:

1. Create a unique class of restriction.
2. Create a unique class of service.

3. Administer the first voice port station.
4. Duplicate the first voice port for the remaining voice ports.
5. Change the Extension, Name, and Port fields for each of the duplicated ports.

Use Worksheet A and Worksheet B in Chapter 2, "Switch Integration Planning" to complete the following procedures.

Create a Unique Class of Restriction

The class of restriction (COR) defines user calling privileges. The COR specifies up to 95 different classes of call origination and termination privileges on the DEFINITY ECS. Create a unique COR for the Lucent INTUITY system voice ports and hunt groups. Do *not* use a COR that is also used by any other extension, special-usage ports, or trunk groups.

To create the COR:

1. Enter **change cor** <***COR number***> on the switch terminal.

   See Worksheet A in Chapter 2, "Switch Integration Planning", for the COR number used for the voice ports.

   The system displays the Class Of Restriction screen.

   NOTE:
   The instructions in this section deal only with the fields you need to change for a Lucent INTUITY system. *Do not* change the value in any other field unless you are instructed to do so. See the *DEFINITY ECS R7 Administrator's Guide*, 555-233-502, for more information about the COR screen.

2. On Page 1, set the Facility Restriction Level (FRL) and any other desired options.
3. Press NEXTPAGE twice to move to Page 3 of the Class Of Restriction screen. This screen shows which other CORs the voice port and hunt group COR are allowed to call. The default has all CORs set to **y**. If you wish to restrict this COR to only allow calls to the its own COR, you must change all the fields to **n** except for its own COR.

   NOTE:
   Some Lucent INTUITY system features require additional calling capabilities. See Worksheet A in Chapter 2, "Switch Integration Planning", for more information on configuring the COR for specific features.

4. Press ENTER to save your changes.
5. Continue with the next procedure, "Create a Unique Class of Service".

Create a Unique Class of Service

The class of service (COS) allows you to define subscriber access to several features and functions. For the Lucent INTUITY system voice ports, enable only the Data Privacy and Restrict Call Forwarding Off-Net features. Lucent Technologies recommends that you do not enable any other features for the Lucent INTUITY system voice ports COS.

Use the following procedure to create the COS:

1. Enter **change cos** at the command prompt.

   The system displays the Class Of Service screen.

   NOTE:
   The instructions in this section deal only with the fields you need to change for a Lucent INTUITY system. *Do not* change the value in any other field unless you are instructed. For more information on the COS screen and fields, see the *DEFINITY ECS R7 Administrator's Guide*, 555-233-502.

2. See Worksheet A in Chapter 2, "Switch Integration Planning", for the COS number used for the voice ports. Enable only the Data Privacy and Restrict Call Forwarding Off-Net features for the Lucent INTUITY system voice ports COS.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Administer the First Voice Port Station".

Administer the First Voice Port Station

The Lucent INTUITY voice ports interface to the switch as analog 2500-type stations. See Worksheet A and Worksheet B in Chapter 2, "Switch Integration Planning" for the information required to administer the ports.

To administer the voice ports:

1. Enter **add station** <***voice port extension***> at the enter command prompt. Get the first voice port extension from Worksheet B in Chapter 2, "Switch Integration Planning".

   The system displays Page 1 of the Station screen (Figure 3-3). The extension number must be the same length as the Lucent INTUITY system user extension numbers. Extension numbers cannot start with 0.

   NOTE:
   You can also use the **add station next** command if you want to add a station using the next available extension number.

```
add station 3066                                  Page   1 of   3   SPE B
                                    STATION

Extension: 3066                        Lock Messages? n          BCC: 0
     Type: 2500                        Security Code:             TN: 1
     Port: 01a0501                   Coverage Path 1:            COR: 21
     Name: AUDIX1                    Coverage Path 2:            COS: 5
                                     Hunt-to Station:          Tests? n

STATION OPTIONS
     Off Premise Station? n                Message Waiting Indicator:_____
```

Figure 3-3. Sample Station Screen, Page 1 (Host - Node #1)

2. Use Worksheet A in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on the Station screen, Page 1. Note that the `Tests` field should be set to **n**.
3. Press NEXTPAGE to move to Page 2 of the Station screen (Figure 3-4).

```
add station next                                  Page   2 of   3   SPE B
                                    STATION
FEATURE OPTIONS
          LWC Reception: audix
         LWC Activation? n                  Coverage Msg Retrieval? n
            CDR Privacy? n                            Auto Answer: none
  Redirect Notification? n                    Data Restriction? n
Per Button Ring Control? n                  Call Waiting Indication? n
  Bridged Call Alerting? n                Att. Call Waiting Indication? n
       Switchhook Flash? y                  Distinctive Audible Alert? n
   Ignore Rotary Digits? n                        Adjunct Supervision? y
       H.320 Conversion? n
                              Per Station CPN - Send Calling Number?__
                                          Multimedia Early Answer? n
                                          Audible Message Waiting? n
    MWI Served User Type: _______
               AUDIX Name: ________
   Messaging Server Name:
```

Figure 3-4. Sample Station Screen, Page 2 (Host - Node #1)

4. Use Worksheet A in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on the Station screen, Page 2. Note that the `Switchhook Flash` field should be set to **y**.
5. Press NEXTPAGE to move to Page 3 of the Station screen (Figure 3-5).

```
add station next                                      Page   3 of   3   SPE B

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


ABBREVIATED DIALING
     List1: System   1         List2:                      List3:

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

     Line Appearance: call-appr
```

Figure 3-5. Sample Station Screen, Page 3 (Host - Node #1)

6. Use Worksheet A in Chapter 2, ‘‘Switch Integration Planning’’ to enter the correct values in the fields on the Station screen, Page 3.
7. Press ENTER to save your changes.
8. Continue with the next procedure, ‘‘Duplicate the First Voice Port Station’’.

Duplicate the First Voice Port Station

After creating one voice port station, you can quickly create additional stations by using the **duplicate station** command. The command allows you to copy the information entered for the first voice port station. Enter just the extension, port, and name for the next station you need to create. As you use the command, see Worksheet B in Chapter 2, ‘‘Switch Integration Planning’’, for a list of the voice port information you must enter. You may duplicate up to 16 stations at a time.

To duplicate the station:

1. Enter **duplicate station** <***first voice port station extension***> at the command prompt.

   The system duplicates the station then displays a screen where you can enter the extension, port location, and name for up to 16 additional voice ports. The cursor appears in the `Ext` field.

```
duplicate station 3300                              Page   1 of   4 SPE B
                                  STATION

                                              Security
Ext    Port     Name                          Code      Room        Jack  Cable
3301   01a0503  AUDIX2                        ____      _________   ____  _____
3302   01a0505  AUDIX3                        ____      _________   ____  _____
3303   01a0507  AUDIX4                        ____      _________   ____  _____
3304   01a0509  AUDIX5                        ____      _________   ____  _____
3305   01a0511  AUDIX6                        ____      _________   ____  _____
```

Figure 3-6. Sample Duplicate Station Screen (Host - Node #1)

2. Enter the extension number of the next voice port station you need to create in the `Ext` field.
3. Enter the port location for the next voice port station in the `Port` field.
4. Enter the name for the next voice port station in the `Name` field.
5. Enter Security Code, Room, Jack, and Cable information, if desired.
6. Repeat steps 2-5 for each voice port.
7. Press ENTER to save the information and return to the command prompt.
8. To verify that the voice ports exist on the switch, enter **list station** *<**extension for port 1**>* **count** *<**number of voice ports**>*

   The system displays a list of all the stations you created.
9. Repeat this procedure to duplicate additional groups of 16 voice port stations.
10. Continue with the next procedure, "Assign the Bus Bridge (csi Models Only)".

Assign the Bus Bridge (csi Models Only)

Use the following procedure to assign the bus bridge to the C-LAN circuit pack (csi models only):

1. Enter **change system-parameters maintenance**

   The system displays Page 1 of the Maintenance-Related System Parameters screen.
2. Press NEXTPAGE to move to the page 2 of the Maintenance-Related System Parameters screen.

3. Under the SPE OPTIONAL BOARDS heading, verify that the Bus Bridge Packet Interface 2 has been enabled for the C-LAN circuit pack. If it is not already assigned, set `Packet Intf2` to **y**, `Bus Bridge` to the C-LAN circuit pack equipment location, and use the defaults for the `Timeslot Port` fields. See Worksheet C in Chapter 2, ''Switch Integration Planning'', for information about these fields.

4. Press ENTER to save your changes.

5. Continue with ''Assign Node Names''.

Assign Node Names

The switch and the Lucent INTUITY system must be administered with unique node names and IP addresses. In addition, different models of DEFINITY switches can support different numbers of Lucent INTUITY systems.

- R7csi and R7si support one Lucent INTUITY system.
- R7r supports up to eight Lucent INTUITY systems.
  - Identify the node names of each of the eight possible Lucent INTUITY systems.
  - Select names that are unique for each system, for example **audix1** or **audix2**. Although you name the systems as AUDIX, the name works correctly with the Lucent INTUITY system. This node name is used when you administer the data modules, stations, and the processor channel.

Use the following procedure to define the node names:

1. Enter **change node names**

   The system displays the Node Name screen (Figure 3-7).

```
change node-names                                        Page   1 of   6   SPE B
                                    NODE NAMES

      Audix Names    IP Address              MSA Names       IP Address
      audix1_     192.168.2__.5__            ________       ___.___.___.___
      ________    ___.___.___.___            ________       ___.___.___.___
      ________    ___.___.___.___            ________       ___.___.___.___
      ________    ___.___.___.___            ________       ___.___.___.___
      ________    ___.___.___.___            ________       ___.___.___.___
      ________    ___.___.___.___            ________       ___.___.___.___
      ________    ___.___.___.___            ________       ___.___.___.___
      ________    ___.___.___.___
```

Figure 3-7. Sample Node Names Screen, Page 1 (Host - Node #1)

2. See Worksheet D in Chapter 2, ''Switch Integration Planning'', for the correct node name(s) and IP address(es) to use on the Lucent INTUITY system.

3. Press NEXTPAGE to move to the Page 2 of the Node Names screen (Figure 3-8).

   NOTE:
   The node name `default` is a display-only name and cannot be changed. The `default` node name is not used for this application.

```
change node-names                                     Page   2 of   6   SPE B
                                    NODE NAMES

    Names               IP Address            Names                IP Address
default                0  .0  .0  .0          _______________     ___.___.___.___
switch1________        192.168.2  .2          _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
_______________        ___.___.___.___        _______________     ___.___.___.___
```

Figure 3-8. Sample Node Names Screen, Page 2 (Host - Node #1)

4. See Worksheet C in Chapter 2, ''Switch Integration Planning'', for the correct node name(s) to use on the switch.

5. Press ENTER to save your changes.

6. Continue with the next procedure, ''Add the Voice Ports to a Hunt Group''.

Add the Voice Ports to a Hunt Group

Identify each Lucent INTUITY voice port as a member of one or more hunt groups. This group is a set of analog ports on the switch that connects users to the Lucent INTUITY system by distributing new calls to idle ports. DEFINITY ECS switches use Uniform Call Distribution (UCD) for distributing calls to the ports. See the *DEFINITY ECS R7 Administrator's Guide*, 555-233-502, for more information about call distribution groups.

To place the voice ports into a hunt group starting with Port 1:

1. Enter **add hunt-group** *<hunt group number>* or **change hunt-group** *<hunt group number>* at the enter command prompt. You also can enter **add hunt-group next** to add a hunt group with a number that is one higher than the previous hunt group.

   The system displays the Hunt Group screen (Figure 3-9).

```
add hunt-group 99                                    Page   1 of   3   SPE B
                                  HUNT GROUP

           Group Number: 99                                  ACD? n
             Group Name: AUDIX                             Queue? y
        Group Extension: 6099                             Vector? n
             Group Type: ucd-mia                 Coverage Path: _____
                     TN: 1          Night Service Destination: _____
                    COR: 21                    MM Early Answer? n

          Security Code: _____
     ISDN Caller Display: _____

           Queue Length: 6
 Calls Warning Threshold: _____ Port: _____
  Time Warning Threshold: _____ Port: _____
```

Figure 3-9. Sample Hunt Group Screen, Page 1 (Host - Node #1)

2. Use Worksheet E in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 1 of the Hunt Group screen.
3. Press NEXTPAGE to move to Page 2 of the Hunt Group screen (Figure 3-10).

```
add hunt-group 99                                    Page   2 of   3   SPE B
                                  HUNT GROUP

                         Message Center: audix
                       AUDIX Extension: _____
             Message Center AUDIX Name: audix1
                               Primary? y
   Calling Party Number to INTUITY AUDIX? n
                          LWC Reception: none
                             AUDIX Name: audix1
                 Messaging Server Name: _____
          First Announcement Extension: _____ Delay (sec): __
         Second Announcement Extension: _____ Delay (sec): __ Recurring? _
```

Figure 3-10. Sample Hunt Group Screen, Page 2 (Host - Node #1)

4. Use Worksheet E in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 2 of the Hunt Group screen.

5. Press NEXTPAGE to move to the page 3 of the Hunt Group screen (Figure 3-11).

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

```
add hunt-group 99                                    Page   3 of  3   SPE B
                                  HUNT GROUP
       Group Number: 99      Group Extension: 6099        Group Type: ucd-mia
  Member Range Allowed: 1 - 999         Administered Members (min/max): 1  /6
                                              Total Administered Members: 6
GROUP MEMBER ASSIGNMENTS
     Ext    Name                              Ext    Name
  1: 3300   AUDIX1                       14:
  2: 3301   AUDIX2                       15:
  3: 3302   AUDIX3                       16:
  4: 3303   AUDIX4                       17:
  5: 3304   AUDIX5                       18:
  6: 3305   AUDIX6                       19:
  7:                                     20:
  8:                                     21:
  9:                                     22:
 10:                                     23:
 11:                                     24:
 12:                                     25:
 13:                                     26:

  At End of Member List
```

Figure 3-11. Sample Hunt Group Screen, Page 3 (Host - Node #1)

6. Using Worksheet B in Chapter 2, ‘‘Switch Integration Planning’’, assign the Lucent INTUITY voice port extensions as members of the hunt group. Use Pages 4 and 5 if you have more than 26 voice port stations.
7. Press ENTER to save your changes.

   Use the Group Number of the Lucent INTUITY hunt group when you assign a call coverage path for the system users. The hunt group number serves as the coverage point for incoming INTUITY AUDIX calls. You will complete the coverage path assignment procedure in Chapter 6, ‘‘Acceptance Test and Cut-to-Service Administration’’.
8. Continue with the next procedure, ‘‘Add an Ethernet Data Module’’.

Add an Ethernet Data Module

Use the following procedure to assign the interface link with an ethernet data module:

1. Enter **add data-module <*number* or next>**

   NOTE:
   Use an extension number or the word “next.” If you use next, the system automatically provides the next available extension number.

   The system displays the Data Module screen (Figure 3-12).

```
add data-module 42105                                          SPE B
                            DATA MODULE

  Data Extension: 42105          Name: ethernet                BCC: 2
            Type: ethernet
            Port: 01C1717
            Link: 1
     Enable Link? n

        Node Name: switch1
      Subnet Mask: 255.255.255.0
Broadcast Address: 192.168.2  .255
Automatic Subnet Routing? y
```

Figure 3-12. Sample Data Module Screen (Host - Node #1)

2. Place information into the fields as defined in Worksheet C in Chapter 2, “Switch Integration Planning”. Be sure to set `Enable Link` to **n** (it will be enabled later). For this configuration, set `Automatic Subnet Routing` to **y**.
3. Press ENTER to save your changes.
4. Continue with the next procedure, “Assign the Processor Channel”.

Assign the Processor Channel

Assign a processor channel for the Lucent INTUITY system connection. Use a free processor channel for the connection.

To assign the processor channel:

1. Enter **change communication-interface processor-channels**

   The system displays the Processor Channel Assignment screen (Figure 3-13).

```
channge communication-interface processor-channels     Page   1 of  XX    SPE B
                                PROCESSOR CHANNEL ASSIGNMENT
Proc                     Gtwy       Interface         Destination       Session    Mach
Chan Enable   Appl.       To   Mode Link/Chan          Node         Port  Local/Remote ID
  1:    y    audix             s     1   5002  audix1               0       1     1      1
  2:    n                                                           0
  3:    n                                                           0
  4:    n                                                           0
  5:    n                                                           0
  6:    n                                                           0
  7:    n                                                           0
  8:    n                                                           0
  9:    n                                                           0
 10:    n                                                           0
 11:    n                                                           0
 12:    n                                                           0
 13:    n                                                           0
 14:    n                                                           0
 15:    n                                                           0
 16:    n                                                           0
```

Figure 3-13. Sample Processor Channel Assignment (Host - Node #1)

2. Place information into the fields as defined in Worksheet C in Chapter 2, "Switch Integration Planning".

3. Press ENTER to save your changes.

4. Continue with the next procedure, "Enable the Link on the Data Module Screen".

Enable the Link on the Data Module Screen

After you have assigned the processor channel, you must go back and enable the link on the data module screen.

1. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension.

   The system displays the Data Module screen (Figure 3-12).

2. Change the `Enable Link` field to **y**.

3. Press ENTER to save the information.

4. Continue with the next procedure, "Assign the Call Coverage Path".

Assign the Call Coverage Path

Define a call coverage path for the subscribers with the voice ports hunt group as a coverage point. You may need to define several call coverage paths depending on how the customer wants to handle call coverage for different groups of subscribers. If the Lucent INTUITY system has been integrated with an existing switch, you may need to add the Lucent INTUITY hunt group as another coverage point for existing coverage paths.

Use the following procedure to define a call coverage path.

1. Enter **add coverage path** <***coverage path number***> at the command prompt. See Worksheet F in Chapter 2, "Switch Integration Planning" to find the call coverage path number.

   The system displays the Coverage Path screen (Figure 3-14).

```
add coverage path 1
                                COVERAGE PATH

                  Coverage Path Number: 1
                                                Hunt after Coverage? n
                      Next Path Number: __      Linkage: _____________

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

COVERAGE POINTS

    Terminate to Coverage Pts. with Bridged Appearances? n

      Point1: h99__             Point2: _____             Point3: _____
      Point4: _____             Point5: _____             Point6: _____
```

Figure 3-14. Sample Coverage Path Screen (Host - Node #1)

2. Use Worksheet F in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on the Coverage Path screen.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Modify the Station Screen for Each Subscriber".

Modify the Station Screen for Each Subscriber

After you administer the call coverage path, you must administer all subscriber stations to use the correct coverage path, and for stations on *r* systems, assign which Lucent INTUITY system is administered for that station's mailbox. Each subscriber station must contain the correct information for the Lucent INTUITY system to operate. Use the instructions in this section to administer the stations.

1. Enter **change station** *<**test station extension**>* at the `enter command` prompt.

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

   The system displays the Station screen (Figure 3-15).

```
change station 3066                                Page   1 of   4   SPE B
                                   STATION

Extension: 3066                          Lock Messages? n          BCC: 0
     Type: 6408D+                          Security Code:           TN: 1
     Port: 01a0811                    Coverage Path 1: 1           COR: 1
     Name: _____________________      Coverage Path 2: __          COS: 1
                                       Hunt-to Station: _____

STATION OPTIONS
             Data Module? n                Personalized Ringing Pattern: 1
          Speakerphone: 2-way                      Message Lamp Ext: 3066
       Display Language: english                    Mute Button Enabled? y


                                                 MM Complex Data Ext: _____
```

Figure 3-15. Sample Station Screen, Page 1 (Host - Node #1)

2. Enter the coverage path you created for the Lucent INTUITY system in the "Assign the Call Coverage Path" above. If you do not remember the coverage path number, see Worksheet F, in Chapter 2, "Switch Integration Planning".
3. Press NEXTPAGE to move to Page 2.

   The system displays Page 2 the Station screen (Figure 3-16).

```
change station 3066                                Page   2 of   4   SPE B
                                    STATION
FEATURE OPTIONS
          LWC Reception: AUDIX          Auto Select Any Idle Appearance? n
         LWC Activation? y                       Coverage Msg Retrieval? y
          CDR Privacy? n                               Auto Answer: none
   Redirect Notification? y                         Data Restriction? n
 Per Button Ring Control? n                 Idle Appearance Preference? n
   Bridged Call Alerting? n
  Active Station Ringing: single                  Restrict Last Appearance? y

        H.320 Conversion? n
       Service Link Mode: _________ Per Station CPN - Send Calling Number? n
         Multimedia Mode: basic                  Multimedia Early Answer? n
                                                  Audible Message Waiting? n
                                               Display Client Redirection? n
             AUDIX Name: audix1            Select Last Used Appearance? n
   Messaging Server Name: ___________
```

Figure 3-16. Sample Station Screen, Page 2 (Host - Node #1)

4. Enter **AUDIX** in the `LWC Reception`? field.
5. Enter **y** in the `LWC Activation` field if the subscriber is assigned the Leave Word Calling feature.
6. Enter **y** in the `Redirect Notification` field.
7. Enter **led**, **neon**, or **audible** in the `Message Waiting Indicator:` field if the voice terminal has a message waiting indicator (MWI) lamp. This instruction applies to 500, 2500, and 7104A telephones only.
8. On an *r* system, enter the node name of the Lucent INTUITY system that has the voice mailbox for this station in the `AUDIX Name` field.
9. Press ENTER to save your changes.
10. Repeat this procedure for all subscriber stations.
11. Continue with the Chapter 4, "Lucent INTUITY System Administration for Switch Integration".

Lucent INTUITY System Administration for Switch Integration

4

Overview

In addition to administering the switch, you must administer the Lucent INTUITY™ system for the switch integration. This administration includes setting the extension length and entering the appropriate IP addresses.

Purpose

This chapter provides the information to start basic operation of the Lucent INTUITY system with the customer's switch. Once the two are integrated, you can perform acceptance tests for individual system applications to ensure that they are operating properly.

Administer the Lucent INTUITY System for TCP/IP Networking

The first step in administering the Lucent INTUITY system for the LAN link integration is to place the Lucent INTUITY system onto the customer's LAN. From Chapter 8, "Initial Administration and Test for TCP/IP LAN Connectivity and Lucent INTUITY Message Manager" in the installation book for the multi-application platform (MAP), do:

1. Administering TCP/IP LAN Connectivity
    a. LAN Administration for Lucent INTUITY Systems
    b. Establishing Network Addresses
    c. Configuring the Ethernet LAN Circuit Card
    d. Rebooting the System and Attaching the LAN Cable

2. Testing the TCP/IP Connection
    a. Entering the IP Address for the Lucent INTUITY System
    b. Transmitting the Test Packets
    c. Verifying the IP Address for Remote Machines

Do not Administer the Lucent INTUITY Message Manager at this time.

Test the TCP/IP Connection to the DEFINITY ECS

1. Log into the Lucent INTUITY system.

    NOTE:
    For instructions to log into the system and display the Lucent INTUITY system main menu, see the installation book or information.

    The system displays the Lucent INTUITY main menu (Figure 4-1).

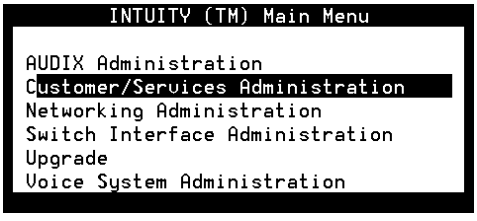
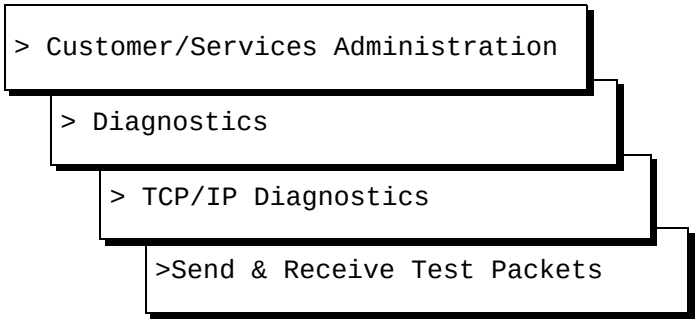


Figure 4-1. Lucent INTUITY System Main Menu

2. Start at the Lucent INTUITY main menu, and select:



    The system displays the Send & Receive Test Packets From screen (Figure 4-2).

```
Send & Receive Test Packets From

IP Address: _______________
```

Figure 4-2. Send & Receive Test Packets From Window

3. Enter the IP address for the DEFINITY ECS.

   This information is listed on Worksheet G in Chapter 2, "Switch Integration Planning".

4. Press F3 (Save).

   The system displays the word "working" and then the Test Packets Results window (Figure 4-3).

```
                          Test Packets Results
72 bytes from definityone  (XXX.X.XXX.X): icmp_seq=0. time=0. ms
72 bytes from definityone  (XXX.X.XXX.X): icmp_seq=1. time=0. ms
72 bytes from definityone  (XXX.X.XXX.X): icmp_seq=2. time=0. ms
72 bytes from definityone  (XXX.X.XXX.X): icmp_seq=3. time=0. ms
72 bytes from definityone  (XXX.X.XXX.X): icmp_seq=4. time=0. ms
72 bytes from definityone  (XXX.X.XXX.X): icmp_seq=5. time=0. ms
72 bytes from definityone  (XXX.X.XXX.X): icmp_seq=6. time=0. ms
72 bytes from definityone  (XXX.X.XXX.X): icmp_seq=7. time=0. ms
72 bytes from definityone  (XXX.X.XXX.X): icmp_seq=8. time=0. ms
72 bytes from definityone  (XXX.X.XXX.X): icmp_seq=9. time=0. ms

----135.9.193.7 PING Statistics----
10 packets transmitted, 10 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/0/0

Note: High packet loss, long round-trip time, or packets received out
of order (icmp_seq) may indicate a network problem.

Press <HELP> for more information, <CANCEL> to continue.
```

Figure 4-3. Example Test Packets Results Window

5. Check the test results

NOTE:
Lucent Technologies support services for the Lucent INTUITY system will not troubleshoot a customer LAN. If the customer LAN is experiencing difficulties, customers should follow their LAN escalation path.

Table 4-1. TCP/IP Test Results

Packet Loss	icmp_seq progression	Test Status	Action
0 to 9%	Standard, 1, 2, 3...	Successful	Continue with step 6.
	Non-standard	Successful	If more than 2 packets are out-of sequence (for example, 0, 1, 3, 2, 5...), you may want to inform the customer administrator. This result can indicate potential network congestion or misrouting that can affect the operation of the switch integration. Continue with step 6.
10% or above	Standard, 1, 2, 3...	Failed	The integration may not operate correctly or it may show poor performance. Check the cabling from the Lucent INTUITY system to its termination. Contact your remote maintenance center for assistance.
	Non-standard		

6. Press F6 (Cancel).
7. Continue with "Check the Country and Switch Type Setting."

Check the Country and Switch Type Setting

1. Starting at the Lucent INTUITY main menu, select:

```
> Switch Interface Administration
    > Switch Selection
```

The system displays the Switch Selection window (Figure 4-4).

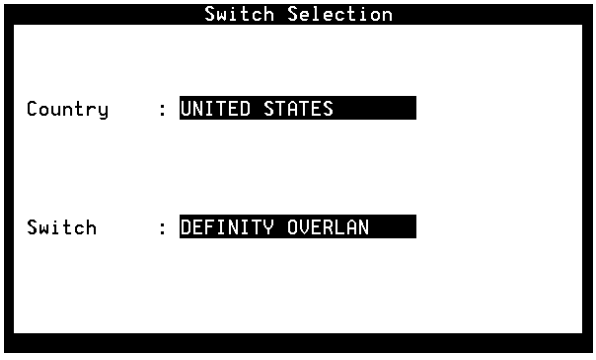


Figure 4-4. Switch Selection Window

2. Determine your next step:
   - If this integration will be using the default settings, continue with step 3.
   - If the integration will not be using the default settings or the remote maintenance center needs to change the country setting to “other”, complete this chapter. Continue with step 3.

     After completing this chapter, go to Appendix E, “Specific Switch Integration Parameter Administration” on page E-1 to modify the settings for the integration.

     NOTE:
     If you need to change the default parameters, you will be unable to acceptance test the Lucent INTUITY system until the parameters are changed.

3. Check the fields. The switch should be the DEFINITY OVERLAN, and the country should match the installation location.
4. Determine your next step:
   - If the fields are correct, continue with step 5.
   - If you need to change a field:
     a. Place the cursor on the field to be changed. Use the arrow keys.
     b. Press F2 Choices to display a list of options.
     c. Highlight the option. Use the arrow keys.
     d. Press ENTER.
     e. Press F3 (Save).

f. Continue with step 5.

5. Press F6 (Cancel) once to return to the Switch Interface menu.

Administer the Switch Link

1. Starting at the Switch Interface Administration menu, select:

```
> Call Data Interface Administration
    > Switch Link Administration
```

The system displays the Switch Link Administration window (Figure 4-5).

NOTE:
The *craft* and *sa* login can administer all non-fixed fields on this window.

```
                    Switch Link Administration

 Switch Link Type  : LAN                        Country :       UNITED STATES
 Extension Length  : 5                          Switch  :    DEFINITY OVERLAN
 Host Switch Number: 2
 AUDIX Number      : 7

Switch     IP Address/       TCP       Switch     IP Address/       TCP
Number      Host Name        Port      Number      Host Name        Port

  2     XXX.X.XXX.XX         5002
```

Figure 4-5. Link Administration Window

This information is listed on Worksheet G in Chapter 2, "Switch Integration Planning".

NOTE:
The `Switch Link Type:, Country:, and Switch:` fields are display only.The `Switch:` field can only have a value of DEFINITY OVERLAN. If these fields do not match the information on the Switch Selection window, re-administer the Switch Selection window and view this screen again. If they still do not match, contact your remote maintenance center. You may need to reload the switch integration software.

2. Enter the following information. Use the arrow keys to move the cursor to the desired field.

   a. Enter an extension length of **3**, **4**, or **5** in the `Extension Length:` field. The number must match the dial plan of the switch. See Worksheet G in Chapter 2, "Switch Integration Planning" to determine the extension length.

   b. Enter the AUDIX number. Valid entries are from 1 to 8.

   c. Enter the number of the switch in the `Switch Number:` field.

      The number for the host switch on a non-DCS integration is usually 1. For other switches, valid switch numbers range from 1 to 20. These numbers must match the numbers administered on the host DEFINITY ECS.

   d. Enter the IP address for the switch in the `IP Address/Host Name:` field.

      NOTE:
      If you use the name instead of the IP address, you will need to administer the TCP/IP Networking window.

   e. Enter the TCP port number in the `TCP Port` field. Use 5002 for the host switch. Use the port administration on the DEFINITY for any other switches.

3. If you are installing the Lucent INTUITY system with a DCS network, repeat Step 2 for each additional switch.

4. Press F3 (Save) to update the system.

CAUTION:
If you update the Switch Interface Administration screen while the system is in operation, the Lucent INTUITY system resets the switch link. This will cause a temporary loss of any service that the link is providing. If you do not want to cause a temporary loss of service at this time, press ***n*** *and then F6 (Cancel) to exit the screen without saving any changes.*

5. Press ENTER to continue.

The system displays a message that indicates the switch link is resetting.

6. Press F6 (Cancel) to exit the Switch Interface Administration screen and return to the Lucent INTUITY system main menu (Figure 4-1).

7. Determine your next step.

   - If you did not use names in the IP Address/Host Names field and
     - — The Lucent INTUITY system will be operating with a DCS network, continue with "Administer the DCS Network Time Zone" on page 4-9.
     - — The Lucent INTUITY system will not be operating with a DCS network, continue with "Stopping and Starting the Voice System" on page 4-13.
   - If you used host names in the IP Address/Host Names field, continue with "Provide an DNS Server Address If You Used Names." You must administer the TCP/IP Networking window.

Provide an DNS Server Address If You Used Names

Complete the following screen if you administered the Switch Interface Administration screen using host names instead of IP addresses. If you used IP addresses, do not administer this screen.

1. Starting at the Switch Interface Administration menu, select:

```
> Call Data Interface Administration
    > TCP/IP Networking Administration
```

The system displays the Switch Interface Administration window (Figure 4-6).

NOTE:
The *craft* and *sa* logins can administer all non-fixed fields on this screen.

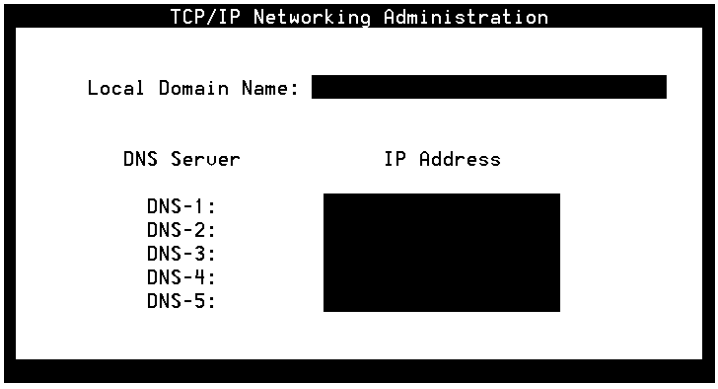


Figure 4-6. TCP/IP Networking Administration Window

This information is listed on Worksheet G in Chapter 2, "Switch Integration Planning".

2. Enter the local domain name. This is the TCP/IP domain name of the Lucent INTUITY system. This information is available from the customer's LAN administrator.
3. Enter the DNS server IP address as provided by the customer LAN administrator.
4. Determine your next step:
   - If you are installing a Lucent INTUITY system with a DCS network, continue with "Administer the DCS Network Time Zone" on page 4-9.
   - If you are not installing a Lucent INTUITY system with a DCS network, continue with "Stopping and Starting the Voice System" on page 4-13.

Administer the DCS Network Time Zone

Administer the time zones for the individual switches in the DCS network if the Lucent INTUITY system will be working in a DCS network. See Worksheet H in Chapter 2, "Switch Integration Planning" for the information.

NOTE:
This screen does not change the time zone assignment for the Lucent INTUITY system, the host switch, or any of the remote switches. To set the Lucent INTUITY system time zones, see the installation book.

1. Starting at the Lucent INTUITY main menu, select

```
> AUDIX Administration
```

2. Enter **change switch–time–zone** at the prompt.

   The system displays the Change Switch-Time-Zone Command Output screen (Figure 4-7).

```
AUDIX              Active          Alarms:   wA                    Logins: 4
change switch-time-zone                                          Page 1 of 1
                                SWITCH TIME ZONE

Switch      Time      Daylight          Switch      Time      Daylight
Number      Zone      Savings?          Number      Zone      Savings?

 1:          7          y                2:          5          y
 3:          5          y                4:          5          y
 5:          5          y                6:          5          y
 7:          5          y                8:          5          y
 9:          5          y               10:          5          y
11:          5          y               12:          5          y
13:          5          y               14:          5          y
15:          5          y               16:          5          y
17:          5          y               18:          5          y
19:          5          y               20:          5          y

                              Host Switch:   1

enter command: change switch-time-zone
```

Figure 4-7. Change Switch-Time-Zone Command Output

3. See the Worksheet H in Chapter 2, "Switch Integration Planning" for time zone assignments. Enter the time zone and the daylight saving values for each switch.

   Use arrow keys to move to the different fields.

4. When you finish, press F3 (Enter) to change the time zones.
5. Enter **exit** to return to the Lucent INTUITY main menu.
6. Continue with "Stopping and Starting the Voice System" on page 4-13.

Changing the Switch Extension Length on the Lucent INTUITY System

The Lucent INTUITY system has a default extension length of four. You may need to change the extension or dial plan length to match the dial plan on the switch. Use the procedures in this section to change the extension length.

NOTE:
See the **change extensions** command in *INTUITY Messaging Solutions Release 4 Administration*, 585-310-564 for Release 4 systems, or your administration information for Release 5 systems for information about changing extensions when a new dial plan is put into service.

1. Start at the Lucent INTUITY main menu and select:

```
> Switch Interface Administration
    > Call Data Interface Administration
        > Switch Link Administration
```

   The system displays the Switch Interface Administration screen (Figure 4-5). With the cursor in the `Extension Length`: field.

2. Enter an extension length of **3**, **4**, or **5** in the `Extension Length:` field. The number must match the dial plan of the switch. See Worksheet G in Chapter 2, "Switch Integration Planning".to determine the extension length.

3. Press F3 (Save) to change the dial plan.

   CAUTION:
   *If you update the Switch Interface Administration screen while the system is in operation, the Lucent INTUITY system resets the switch link. This will cause a temporary loss of any service that the link is providing. If you do not want to cause a temporary loss of service at this time, press **n** and then F6 (Cancel) to exit the screen without saving any changes.*

4. Press ENTER to continue.

   The system displays a message that indicates the switch link is resetting.

5. Press F6 (Cancel) to return to the Lucent INTUITY main menu (Figure 4-1).

6. Select:

```
> AUDIX Administration
```

7. Enter **change machine** at the prompt.

   The system displays the Machine Profile screen (Figure 4-8).

```
Intuity            Active          Alarms:    A                    Logins: 2
change machine                                                  Page 1 of 1
                              MACHINE PROFILE

Machine Name: Intuity      Type: local          Location: local

 Voiced Name? n                               Extension Length: 5
    Voice ID: 0                             Default Community: 1

ADDRESS RANGES
    Prefix                  Start Ext.   End Ext.        Warnings
 1: _____________________   00000       99999
 2: _____________________   _____       _____
 3: _____________________   _____       _____
 4: _____________________   _____       _____
 5: _____________________   _____       _____
 6: _____________________   _____       _____
 7: _____________________   _____       _____
 8: _____________________   _____       _____
 9: _____________________   _____       _____
10: _____________________   _____       _____

enter command: change machine
```

Figure 4-8. Change Machine Screen

8. Enter the first extension of the range in the `Start Ext`: field. The range must have the same number of digits as indicated in the Extension Length field.
9. Enter the ending extension of the range in the `End Ext`: field. The range must have the same number of digits as indicated in the Extension Length field.

   NOTE:
   You cannot change the `Extension Length`: field on this form. Use the Switch Interface Administration screen to change the extension length.

10. Press F3 (Enter) when you want to save the changes.
11. Enter **exit** to return to the Lucent INTUITY main menu (Figure 4-1).

12. Continue with "Stopping and Starting the Voice System" on page 4-13.

Stopping and Starting the Voice System

Use the following procedure to stop and start the voice system.

Stopping the Voice System

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

To stop the voice system, do the following:

1. Starting at the Lucent INTUITY main menu (Figure 4-1) select:

```
> Customer/Services Administration
    > System Management
        > System Control
            >Stop Voice System
```

The system displays the Wait Time window (Figure 4-9).

Figure 4-9. Wait Time Window

2. Enter a number between 60 and 600 to designate how long the system will wait for calls in progress to finish before stopping the voice system.
3. Press F3 (Save).

   The system displays the following message:

```
The Voice System is now stopping.

Initiating request to clear all calls in the next 60
seconds.

Orderly idling of the system succeeded.

After the Voice System has completely stopped, use the
“Start Voice System”choice from the System Control menu
to restart the Voice System.

The Voice System has stopped.

Press Enter to Continue.
```

NOTE:
When the voice system is stopped, the user cannot access INTUITY AUDIX administration screens. `AUDIX Administration` still appears as an option on the Lucent INTUITY Main menu, but the user cannot select this option. To view INTUITY AUDIX administration screens, the user must restart the voice system. See “Stopping the Voice System” on page 13. for the procedure.

4. Press ENTER

Starting the Voice System

To start the voice system, do the following:

1. Starting at the Lucent INTUITY main menu (Figure 4-1) select:

```
> Customer/Services Administration
    > System Management
        > System Control
            >Start Voice System
```

The system displays the following message:

```
The Voice System is starting.
The Voice System is initializing cards.

Startup of the Voice System is complete.

Hit acknowledge key to continue.
```

2. Press F3 (Acknowledge).

The system displays the System Control menu (Figure 4-10).

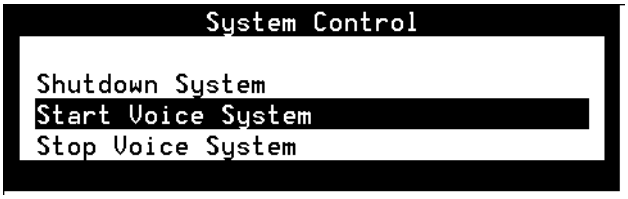


Figure 4-10. System Control Menu

3. Press F6 (Cancel) twice to reach the Customer/Services Administration menu.
4. Continue with "Verify the LAN Link."

Verify the LAN Link

1. Starting at the Customer/Services Administration menu, select:

```
> Diagnostics
    > Switch Link Diagnostics
        > Link Diagnostics
```

The system responds with the Link Diagnostics window (Figure 4-11).

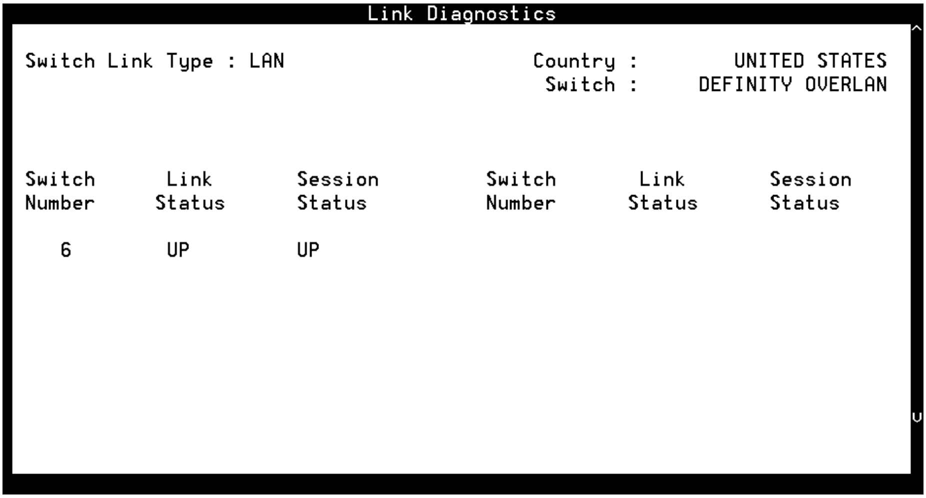


Figure 4-11. Example Switch Link Diagnostics Window

2. Verify that the Link and Session status are both up.
3. Determine your next step:
   - If either the Link or the Session status is not up, use Appendix B, "LAN Link Troubleshooting Procedures'' on page C-1 to locate and correct the problem.
   - If the Link and Session status are both up and
     — You are installing the Lucent INTUITY system into a DCS network, continue with Chapter 5.
     — You do not have to change any switch integration settings and you will not be installing the Lucent INTUITY system into a DCS network, return to your installation information and continue with acceptance testing.
     — You have to change settings to customize the switch integration, contact your remote maintenance center at this time, or go to Appendix E, "Specific Switch Integration Parameter Administration'' on page E-1.

DCS Administration

5

Overview

The Lucent INTUITY system can serve a maximum of 20 switches when the switches are part of a Distributed Communications System (DCS) network. The switch that hosts the Lucent INTUITY system connects it to the other switches in the network and provides gateway services to the Lucent INTUITY system. To provide these services, the switches in the network and the Lucent INTUITY system require additional administration. Only this additional administration is given in this chapter. It is presumed that the basic configuration shown in Chapter 3, "Administration for Switch-to-Lucent Intuity System Link" is up and working, and that all DCS administration between the switches is up and working.

For each configuration, this chapter shows what has to be administered on the remote switch, on the host switch (if anything), and on the Lucent INTUITY system. Use each of these configurations as building blocks, or as entry points, to determine what administration is required to set up a link to the Lucent INTUITY system.

Prerequisites

The configurations shown in the chapter are based on the following presumptions:

- The host switch is DEFINITY ECS R7. The remote switches can be any of the following switch models:
  - System 75
  - DEFINITY G1
  - DEFINITY G3i
  - DEFINITY G3r

  - — DEFINITY G3s
  - — DEFINITY G3vs
  - — DEFINITY ECS R5/6/7
- The basic configuration shown in Chapter 3, "Administration for Switch-to-Lucent Intuity System Link" is administered and is working.
- DCS networking between the host switch and all other switches in the network is up and working. This administration is described in *DEFINITY ECS R7 Administration for Network Connectivity*, 555-233-501.
- The Lucent INTUITY system uses the switch's existing DCS trunks for both data and voice communications.

How to Use This Chapter

This chapter shows how you administer a link between the Lucent INTUITY system and any number of switches in an established DCS network. Since the information in this chapter presumes that the DCS network is up and working, and that the link from the Lucent INTUITY system to the host switch is up and working, it is not necessary to review every configuration shown in this chapter. Determine how the switch is configured in the network (via ethernet, X.25, or ISDN), and then select the configuration that best matches your situation.

Administration for the following configurations are shown in this chapter:

- Configuration A — Adding the Lucent INTUITY system to a remote ethernet switch on the LAN
- Configuration B — Adding the Lucent INTUITY system to a remote X.25 switch connected through the host switch
- Configuration C — Adding the Lucent INTUITY system to a remote ISDN switch connected through the host switch
- Configuration D — Adding the Lucent INTUITY system to a remote PPP switch connected through the host switch
- Configuration E — Adding the Lucent INTUITY system to a remote X.25 switch connected through a gateway ethernet switch.

Configuration A — Ethernet LAN Link

Figure 5-1 illustrates Configuration A. This configuration includes two R7 switches connected via ethernet (Host - Node #1 and Remote - Node #2), and the Lucent INTUITY system connected to the host switch. The information in this section shows you how to administer the link from the Lucent INTUITY system to a remote switch connected on the LAN.

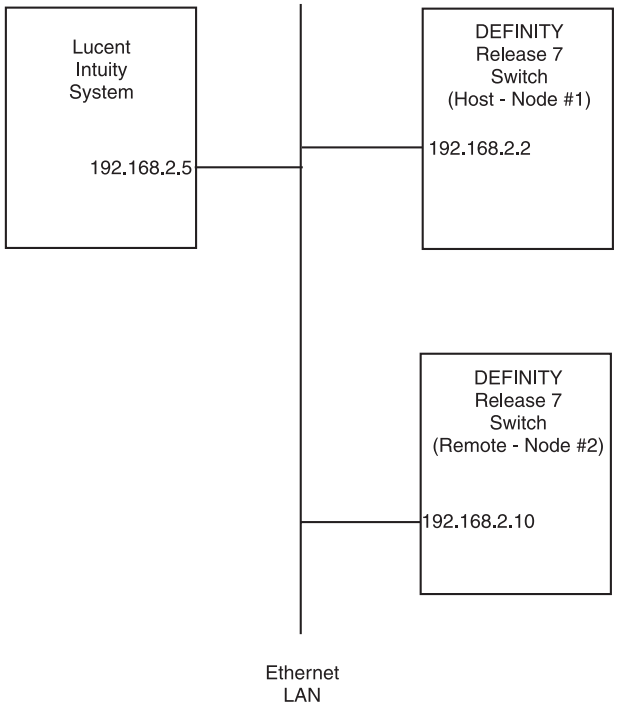


Figure 5-1. Configuration A — Ethernet LAN Link

Prerequisites

The procedures in this section presumes the following:

- The host switch is DEFINITY R7.
- DCS connectivity and administration between the host switch and the remote switch is up and working. This administration is described in *DEFINITY ECS R7 Administration for Network Connectivity*, 555-233-501.
- The basic configuration shown in Chapter 3, "Administration for Switch-to-Lucent Intuity System Link" is up and working.

Procedure Overview

The following procedures must be done on the “Remote - Node #2” switch:

- Assign the node name for the Lucent INTUITY system.
- Administer a hunt group.
- Disable the link on the data module screen.
- Administer a processor channel for the link from the switch to the Lucent INTUITY system.
- Enable the link on the data module screen.
- Set up a coverage path for access to the voice port hunt group.
- Apply the coverage path to stations, and if the switch is an *r* model, specify the node name of the Lucent INTUITY system for each station that has a voice mailbox on the Lucent INTUITY system.

The following procedure must be done on the Lucent INTUITY system:

- Administer the switch interface to the “Remote - Node #2” switch.

“Remote - Node #2” Switch Procedures

Do the following procedures to administer the “Remote - Node #2” switch.

Assign Node Names

The Lucent INTUITY system must be administered with unique node names and IP addresses. In addition, different models of DEFINITY switches can support different numbers of Lucent INTUITY systems.

- R7csi and R7si support one Lucent INTUITY system.
- R7r supports up to eight Lucent INTUITY systems.
  - — Identify the node names of each of the eight possible Lucent INTUITY systems.
  - — Select names that are unique for each system, for example **audix1** or **audix2**. Although you name the systems as AUDIX, the name works correctly with the Lucent INTUITY system. This node name is used when you administer the data modules, stations, and the processor channel.

Use the following procedure to define the node names:

1. Enter **change node-names**

   The system displays the Node Name screen (Figure 5-2).

```
change node-names                                  Page   1 of   6   SPE B
                                  NODE NAMES

       Audix Names   IP Address          MSA Names      IP Address
       audix1    192.168.2  .5          ________       ___.___.___.___
       ________  ___.___.___.___        ________       ___.___.___.___
       ________  ___.___.___.___        ________       ___.___.___.___
       ________  ___.___.___.___        ________       ___.___.___.___
       ________  ___.___.___.___        ________       ___.___.___.___
       ________  ___.___.___.___        ________       ___.___.___.___
       ________  ___.___.___.___        ________       ___.___.___.___
       ________  ___.___.___.___
```

Figure 5-2. Sample Node Names Screen, Page 1 (Remote - Node #2)

2. See Worksheet D in Chapter 2, ‘‘Switch Integration Planning’’, for the correct node name(s) and IP address(es) to use for the Lucent INTUITY system.
3. Press ENTER to save your changes.
4. Continue with the next procedure, ‘‘Assign a Hunt Group at the Remote Switch’’.

Assign a Hunt Group at the Remote Switch

This section contains procedures for administering a Hunt Group on a remote switch in a DCS network. No host switch administration is required.

1. Enter **add hunt-group** <***number***> at the remote switch administration terminal to assign a new hunt group.

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

```
add hunt-group 2                                   Page   1 of   3   SPE B
                                  HUNT GROUP

           Group Number: 2                                  ACD? n
             Group Name: AUDIX                            Queue? n
      Group Extension: 72000                            Vector? n
             Group Type: ucd-mia                 Coverage Path: _________
                     TN: 1          Night Service Destination: _________
                    COR: 35                    MM Early Answer? n

          Security Code: _________
    ISDN Caller Display: _________
```

Figure 5-3. Sample Hunt Group Screen, Page 1 (Remote - Node #2)

2. Use Worksheet I in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 1 of the Hunt Group screen.
3. Press NEXTPAGE to move to Page 2 of the Hunt Group screen (Figure 5-4).

```
add hunt-group 2                                  Page   2 of  3   SPE B
                                HUNT GROUP

                          Message Center: rem-audix
                        AUDIX Extension: _____
                Message Center AUDIX Name: audix1
                                Primary? y
    Calling Party Number to INTUITY AUDIX? n
                           LWC Reception: none
                              AUDIX Name: audix1
                    Messaging Server Name: _____
             First Announcement Extension: _____ Delay (sec): __
            Second Announcement Extension: _____ Delay (sec): __ Recurring? _
```

Figure 5-4. Sample Hunt Group Screen, Page 2 (Remote - Node #2)

4. Use Worksheet I in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 2 of the Hunt Group screen. Note that no administration is required on Page 3. The Lucent INTUITY system voice ports are only connected to the host switch.
5. Press ENTER to save your changes.
6. Continue with the next procedure, "Disable the Link on the Data Module Screen".

Disable the Link on the Data Module Screen

Before you administer a processor channel, you must disable the link on the data module that is used for the ethernet link to the host switch.

1. Enter **list communication-interface links** to display a list of the interface links administered on the switch. Find the extension number for the data module used for the ethernet link.
2. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension.

   The system displays the Data Module screen.
3. Change the `Enable Link` field to **n**.
4. Note which link is used for the data module. This link number will be used when assigning a processor channel.
5. Press ENTER to save your changes.
6. Continue with the next procedure, "Assign the Processor Channel".

Assign the Processor Channel

Assign a processor channel for the Lucent INTUITY system connection. Use a free processor channel for the connection. Note that the DCS processor channel shown here is for example only and would already be administered.

To assign the processor channel:

1. Enter **change communication-interface processor-channels**

   The system displays the Processor Channel Assignment screen (Figure 5-5).

```
channge communication-interface processor-channels     Page   1 of  XX   SPE B
                        PROCESSOR CHANNEL ASSIGNMENT
Proc                  Gtwy       Interface          Destination       Session   Mach
Chan Enable   Appl.    To   Mode Link/Chan        Node        Port  Local/Remote ID
  1:   y     dcs          c    1   5003  switch1            0     1     1     1
  2:   y     audix        s    1   5002  audix1             0     2     1     1
  3:   n                                                    0
  4:   n                                                    0
  5:   n                                                    0
  6:   n                                                    0
  7:   n                                                    0
  8:   n                                                    0
  9:   n                                                    0
 10:   n                                                    0
 11:   n                                                    0
 12:   n                                                    0
 13:   n                                                    0
 14:   n                                                    0
 15:   n                                                    0
 16:   n                                                    0
```

Figure 5-5. Sample Processor Channel Assignment (Remote - Node #2)

2. Place information into the fields as defined in Worksheet C in Chapter 2, "Switch Integration Planning". Use the link number from the data module above. The DCS processor channel would already be assigned and is shown here for information only.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Enable the Link on the Data Module Screen".

Enable the Link on the Data Module Screen

After you have assigned the processor channel, you must go back and enable the link on the data module used for this link.

1. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension disabled earlier.

   The system displays the Data Module screen.

2. Change the `Enable Link` field to **y**.

3. Press ENTER to save your changes.

4. Continue with the next procedure, "Assign the Call Coverage Path".

Assign the Call Coverage Path

Define a call coverage path for the subscribers with the remote hunt group as a coverage point. You may need to define several call coverage paths depending on how the customer wants to handle call coverage for different groups of subscribers. If the Lucent INTUITY system has been integrated with an existing switch, you may need to add the Lucent INTUITY hunt group as another coverage point for existing coverage paths.

Use the following procedure to define a call coverage path.

1. Enter **add coverage path** <***coverage path number***> at the command prompt. See Worksheet F in Chapter 2, "Switch Integration Planning" to find the call coverage path number.

   The system displays the Coverage Path screen (Figure 5-6).

```
add coverage path 1
                                COVERAGE PATH

                 Coverage Path Number: 1
                                                 Hunt after Coverage? n
                     Next Path Number: __        Linkage: _____________

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

COVERAGE POINTS

    Terminate to Coverage Pts. with Bridged Appearances? n

      Point1: h2___              Point2: _____              Point3: _____
      Point4: _____              Point5: _____              Point6: _____
```

Figure 5-6. Sample Coverage Path Screen (Remote - Node #2)

2. Use Worksheet F in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on the Coverage Path screen.

3. Press ENTER to save your changes.
4. Continue with the next procedure, "Modify the Station Screen for Each Subscriber".

Modify the Station Screen for Each Subscriber

After you administer the call coverage path, you must administer all subscriber stations to use the correct coverage path, and for stations on *r* systems, assign which Lucent INTUITY system is administered for that station's mailbox. Each subscriber station must contain the correct information for the Lucent INTUITY system to operate. Use the instructions in this section to administer the stations.

1. Enter **change station** *<**test station extension**>* at the `enter command` prompt.

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

   The system displays the Station screen (Figure 5-7).

```
change station 3066                                  Page   1 of   4   SPE B
                                    STATION

Extension: 3066                        Lock Messages? n          BCC: 0
     Type: 6408D+                      Security Code:             TN: 1
     Port: 01a0811                   Coverage Path 1: 1           COR: 1
     Name: _____________________     Coverage Path 2: __          COS: 1
                                     Hunt-to Station: _____

STATION OPTIONS
             Data Module? n                 Personalized Ringing Pattern: 1
           Speakerphone: 2-way                      Message Lamp Ext: 3066
       Display Language: english                  Mute Button Enabled? y


                                                MM Complex Data Ext: _____
```

Figure 5-7. Sample Station Screen, Page 1 (Remote - Node #2)

2. Enter the coverage path you created for the Lucent INTUITY system in the "Assign the Call Coverage Path" above. If you do not remember the coverage path number, see Worksheet F, in Chapter 2, "Switch Integration Planning".
3. Press NEXTPAGE to move to Page 2.

   The system displays Page 2 of the Station screen (Figure 5-8).

```
change station 3066                                  Page   2 of   4   SPE B
                                     STATION
FEATURE OPTIONS
           LWC Reception: AUDIX          Auto Select Any Idle Appearance? n
          LWC Activation? y                       Coverage Msg Retrieval? y
           CDR Privacy? n                                Auto Answer: none
   Redirect Notification? y                            Data Restriction? n
 Per Button Ring Control? n                   Idle Appearance Preference? n
   Bridged Call Alerting? n
  Active Station Ringing: single                 Restrict Last Appearance? y

        H.320 Conversion? n
       Service Link Mode: _________ Per Station CPN - Send Calling Number? n
         Multimedia Mode: basic                  Multimedia Early Answer? n
                                                   Audible Message Waiting? n
                                                Display Client Redirection? n
             AUDIX Name: audix1              Select Last Used Appearance? n
   Messaging Server Name: ___________
```

Figure 5-8. Sample Station Screen, Page 2 (Remote - Node #2)

4. Enter **AUDIX** in the `LWC Reception`? field.
5. Enter **y** in the `LWC Activation` field if the subscriber is assigned the Leave Word Calling feature.
6. Enter **y** in the `Redirect Notification` field.
7. Enter **led**, **neon**, or **audible** in the `Message Waiting Indicator:` field if the voice terminal has a message waiting indicator (MWI) lamp. This instruction applies to 500, 2500, and 7104A telephones only.
8. On an *r* system, enter the node name of the Lucent INTUITY system that has the voice mailbox for this station in the `AUDIX Name` field.
9. Press ENTER to save your changes.
10. Repeat this procedure for all subscriber stations.

Lucent INTUITY System Administration

Do the following procedures to administer the Lucent INTUITY system.

Administer the Switch Interface

You must now administer the switch interface to include the “Remote - Node #2” switch. Do the following:

1. Starting at the Lucent INTUITY main menu, select:

```
> Switch Interface Administration
    > Call Data Interface Administration
        > Switch Link Administration
```

   The system responds with the Switch Interface Administration window (Figure 5-9).

```
+------------------------------------------------------------------------+
+                    Switch Interface Administration                     +
+------------------------------------------------------------------------+
| Switch Link Type: LAN                      Country: UNITED STATES      |
| Extension Length: 4                         Switch: DEFINITY OVERLAN   |
| Host Switch Number: 1                                                  |
| AUDIX Number: 1                                                        |
|                                                                        |
|Switch     IP Address/      TCP      Switch     IP Address/      TCP    |
|Number     Host Name        Port     Number     Host Name        Port   |
|   1      192.168.2.2       5002                                       |
|   2      192.168.2.10      5002                                       |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+
```

Figure 5-9. Sample Switch Interface Administration Window (Lucent INTUITY System)

2. Use Worksheet G, in Chapter 2, “Switch Integration Planning” to enter the correct values in this window. The only change required is to add an entry for the “Remote - Node #2” switch.
3. Press F3 (Save).

Configuration B — X.25 Link

Figure 5-10 illustrates Configuration B. This configuration includes two R7 switches connected via ethernet (Host - Node #1 and Remote - Node #2), a remote switch connected to the host via X.25 (Remote - Node #3), and the Lucent INTUITY system connected to the host switch. The information in this section shows you how to administer the link from the Lucent INTUITY system to the remote switch connected via X.25.

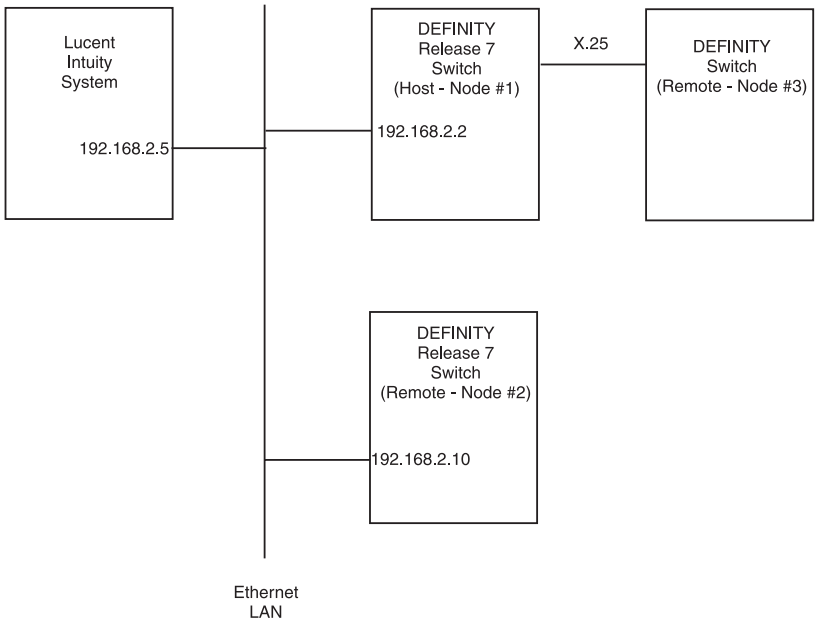


Figure 5-10. Configuration B — X.25 Link

Prerequisites

The procedures in this section presumes the following:

- The host switch is DEFINITY R7.
- DCS connectivity and administration between the host switch and the remote switches is up and working. This administration is described in *DEFINITY ECS R7 Administration for Network Connectivity*, 555-233-501.
- The basic configuration shown in Chapter 3, "Administration for Switch-to-Lucent Intuity System Link" is up and working.
- The administration for all previous configurations have been done and is up and working.

Procedure Overview

The following procedures must be done on the “Remote - Node #3” switch:

- Assign the node/adjunct name for the Lucent INTUITY system.
- Administer a hunt group.
- Disable the link.
- Administer a processor channel for the link from the switch to the Lucent INTUITY system.
- Enable the link.
- Set up a coverage path for access to the voice port hunt group.
- Apply the coverage path to stations, and if the switch is an *r* model, specify the node name of the Lucent INTUITY system for each station that has a voice mailbox on the Lucent INTUITY system.

The following procedures must be done on the “Host - Node #1” switch:

- Disable the link on the data module screen.
- Administer one gateway TCP processor channel to convert X.25 to TCP, and one gateway TCP processor channel to identify the TCP port used to communicate with the Lucent INTUITY system.
- Enable the link on the data module screen.

The following procedure must be done on the Lucent INTUITY system:

- Administer the switch interface to the “Remote - Node #3” switch.

“Remote - Node #3” Switch Procedures

Do the following procedures to administer the “Remote - Node #3” switch.

Assign Node/Adjunct Names

The Lucent INTUITY system must be administered with unique node/adjunct names and IP addresses (IP addresses are for R7 only). In addition, different models of DEFINITY switches can support different numbers of Lucent INTUITY systems.

- *csi* and *si* support one Lucent INTUITY system.
- *r* supports up to eight Lucent INTUITY systems.
  - — Identify the node names of each of the eight possible Lucent INTUITY systems.

— Select names that are unique for each system, for example **audix1** or **audix2**. Although you name the systems as AUDIX, the name works correctly with the Lucent INTUITY system. This node name is used when you administer the data modules, stations, and the processor channel.

Use the following procedure to define the node names:

1. Enter **change node-names** (R7) or **change adjunct-names** (pre-R7).

   The system displays the appropriate screen (Figure 5-11). This example shows an R7 screen.

```
change node-names                                Page   1 of   6   SPE B
                                 NODE NAMES

       Audix Names   IP Address          MSA Names      IP Address
       audix1_   192.168.2__.5__         ________       ___.___.___.___
       ________  ___.___.___.___         ________       ___.___.___.___
       ________  ___.___.___.___         ________       ___.___.___.___
       ________  ___.___.___.___         ________       ___.___.___.___
       ________  ___.___.___.___         ________       ___.___.___.___
       ________  ___.___.___.___         ________       ___.___.___.___
       ________  ___.___.___.___         ________       ___.___.___.___
       ________  ___.___.___.___
```

Figure 5-11. Sample Node Names Screen, Page 1 (Remote - Node #3)

2. See Worksheet D in Chapter 2, ‘‘Switch Integration Planning’’, for the correct node name(s) and IP address(es) to use for the Lucent INTUITY system.
3. Press ENTER to save your changes.
4. Continue with the next procedure, ‘‘Assign a Hunt Group at the Remote Switch’’.

Assign a Hunt Group at the Remote Switch

This section contains procedures for administering a Hunt Group on a remote switch in a DCS network. No host switch administration is required.

1. Enter **add hunt-group** <***number***> at the remote switch administration terminal to assign a new hunt group.

   The system displays the Hunt Group screen (Figure 5-12).

```
add hunt-group 2                                    Page   1 of   3   SPE B
                                HUNT GROUP

           Group Number: 2_                                   ACD? n
             Group Name: AUDIX                              Queue? n
        Group Extension: 72000                             Vector? n
             Group Type: ucd-mia                  Coverage Path: _________
                     TN: 1          Night Service Destination: _________
                    COR: 35                     MM Early Answer? n

          Security Code: _________
     ISDN Caller Display: _________
```

Figure 5-12. Sample Hunt Group Screen, Page 1 (Remote - Node #3)

2. Use Worksheet I in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 1 of the Hunt Group screen.
3. Press NEXTPAGE to move to Page 2 of the Hunt Group screen (Figure 5-13).

```
add hunt-group 2                                    Page   2 of   3   SPE B
                                HUNT GROUP

                          Message Center: rem-audix
                        AUDIX Extension: _____
                Message Center AUDIX Name: audix1
                                Primary? y
    Calling Party Number to INTUITY AUDIX? n
                           LWC Reception: none
                              AUDIX Name: audix1
                    Messaging Server Name: _____
             First Announcement Extension: _____ Delay (sec): __
            Second Announcement Extension: _____ Delay (sec): __ Recurring? _
```

Figure 5-13. Sample Hunt Group Screen, Page 2 (Remote - Node #3)

4. Use Worksheet I in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 2 of the Hunt Group screen. Note that no administration is required on Page 3. The Lucent INTUITY system voice ports are only connected to the host switch.
5. Press ENTER to save your changes.
6. Continue with the next procedure, "Disable the Link".

Disable the Link

Before you administer a processor channel, you must disable the link for the processor channel between “Remote - Node #3” and the host switch. For an R7 switch, this will be on the X.25 data module screen. For a pre-R7 switch, this will be on the interface links screen.

1. Enter **display communication-interface links** to display a list of the interface links administered on the switch. Find the extension number for the data module used for the ethernet link.
2. On an R7 switch, enter **change data-module** *XXX*, where *XXX* is the X.25 data module extension. On a pre-R7 switch, enter change communication-interface links.

   The system displays the appropriate screen.
3. Change the `Enable Link` or `Enable` field to **n**.
4. Note which link is used for this connection. This link number will be used when assigning a processor channel.
5. Press ENTER to save your changes.
6. Continue with the next procedure, “Assign the Processor Channel”.

Assign the Processor Channel

Assign a processor channel for the Lucent INTUITY system connection. Use a free processor channel for the connection. Note that the DCS processor channel shown here is for example only and would already be administered.

To assign the processor channel:

1. Enter **change communication-interface processor-channels**

   The system displays the Processor Channel Assignment screen (Figure 5-14). This example shows an R7 processor channel screen.

```
change communication-interface processor-channels     Page   1 of  XX   SPE B
                        PROCESSOR CHANNEL ASSIGNMENT
Proc                     Gtwy       Interface         Destination       Session   Mach
Chan Enable   Appl.       To   Mode Link/Chan         Node         Port  Local/Remote ID
  1:   y    dcs                     2   1                          0      1     1     1
  2:   y    audix            s      2   2      audix1              0      3     1     1
  3:   n                                                           0
  4:   n                                                           0
  5:   n                                                           0
  6:   n                                                           0
  7:   n                                                           0
  8:   n                                                           0
  9:   n                                                           0
 10:   n                                                           0
 11:   n                                                           0
 12:   n                                                           0
 13:   n                                                           0
 14:   n                                                           0
 15:   n                                                           0
 16:   n                                                           0
```

Figure 5-14. Sample Processor Channel Assignment (Remote - Node #3)

2. Place information into the fields as defined in Worksheet C in Chapter 2, "Switch Integration Planning". Use the link number from the data module above. The DCS processor channel would already be assigned and is shown here for information only.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Enable the Link".

Enable the Link

After you have assigned the processor channel, you must go back and enable the link on the data module used for this link.

1. On an R7 switch, enter **change data-module** *XXX*, where *XXX* is the X.25 data module extension disabled earlier. On a pre-R7 switch, enter change communication-interface links.

   The system displays the appropriate screen.
2. Change the `Enable Link` or `Enable` field to **y**.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Assign the Call Coverage Path".

Assign the Call Coverage Path

Define a call coverage path for the subscribers with the remote hunt group as a coverage point. You may need to define several call coverage paths depending on how the customer wants to handle call coverage for different groups of subscribers. If the Lucent INTUITY system has been integrated with an existing switch, you may need to add the Lucent INTUITY hunt group as another coverage point for existing coverage paths.

Use the following procedure to define a call coverage path.

1. Enter **add coverage path** <***coverage path number***> at the command prompt. See Worksheet F in Chapter 2, "Switch Integration Planning" to find the call coverage path number.

   The system displays the Coverage Path screen (Figure 5-15).

```
add coverage path 1
                                COVERAGE PATH

                  Coverage Path Number: 1
                                                  Hunt after Coverage? n
                      Next Path Number: __        Linkage: _____________

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

COVERAGE POINTS

    Terminate to Coverage Pts. with Bridged Appearances? n

      Point1: h2___             Point2: _____             Point3: _____
      Point4: _____             Point5: _____             Point6: _____
```

Figure 5-15. Sample Coverage Path Screen (Remote - Node #3)

2. Use Worksheet F in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on the Coverage Path screen.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Modify the Station Screen for Each Subscriber".

Modify the Station Screen for Each Subscriber

After you administer the call coverage path, you must administer all subscriber stations to use the correct coverage path, and for stations on *r* systems, assign which Lucent INTUITY system is administered for that station's mailbox. Each subscriber station must contain the correct information for the Lucent INTUITY system to operate. Use the instructions in this section to administer the stations.

1. Enter **change station** *<test station extension>* at the `enter command` prompt.

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

   The system displays the Station screen (Figure 5-16).

```
change station 3066                                Page   1 of   4   SPE B
                                    STATION

Extension: 3066                        Lock Messages? n          BCC: 0
     Type: 6408D+                      Security Code:             TN: 1
     Port: 01a0811                   Coverage Path 1: 1           COR: 1
     Name: _____________________     Coverage Path 2: __          COS: 1
                                      Hunt-to Station: _____

STATION OPTIONS
            Data Module? n              Personalized Ringing Pattern: 1
          Speakerphone: 2-way                   Message Lamp Ext: 3066
       Display Language: english              Mute Button Enabled? y


                                              MM Complex Data Ext: _____
```

Figure 5-16. Sample Station Screen, Page 1 (Remote - Node #3)

2. Enter the coverage path you created for the Lucent INTUITY system in the "Assign the Call Coverage Path" above. If you do not remember the coverage path number, see Worksheet F, in Chapter 2, "Switch Integration Planning".
3. Press NEXTPAGE to move to page 2.

   The system displays the Station screen (Figure 5-17).

```
change station 3066                                Page   2 of   4   SPE B
                                    STATION
FEATURE OPTIONS
           LWC Reception: AUDIX          Auto Select Any Idle Appearance? n
          LWC Activation? y                      Coverage Msg Retrieval? y
           CDR Privacy? n                               Auto Answer: none
   Redirect Notification? y                          Data Restriction? n
 Per Button Ring Control? n                 Idle Appearance Preference? n
   Bridged Call Alerting? n
  Active Station Ringing: single              Restrict Last Appearance? y

        H.320 Conversion? n
      Service Link Mode: _________ Per Station CPN - Send Calling Number? n
        Multimedia Mode: basic                   Multimedia Early Answer? n
                                                   Audible Message Waiting? n
                                               Display Client Redirection? n
             AUDIX Name: audix1              Select Last Used Appearance? n
   Messaging Server Name: ___________
```

Figure 5-17. Sample Station Screen, Page 2 (Remote - Node #3)

4. Enter **AUDIX** in the `LWC Reception`? field.
5. Enter **y** in the `LWC Activation` field if the subscriber is assigned the Leave Word Calling feature.
6. Enter **y** in the `Redirect Notification` field.
7. Enter **led**, **neon**, or **audible** in the `Message Waiting Indicator:` field if the voice terminal has a message waiting indicator (MWI) lamp. This instruction applies to 500, 2500, and 7104A telephones only.
8. On an *r* system, enter the node name of the Lucent INTUITY system that has the voice mailbox for this station in the `AUDIX Name` field.
9. Press ENTER to save your changes.
10. Repeat this procedure for all subscriber stations.

"Host - Node #1" Switch Procedures

Do the following procedures to administer the "Host - Node #1" switch.

Disable the Link on the Data Module Screen

Before you administer a processor channel, you must disable the link on the data module that is used for the ethernet link.

1. Enter **list communication-interface links** to display a list of the interface links administered on the switch. Find the extension number for the data module used for the ethernet link.

2. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension.

   The system displays the Data Module screen.

3. Change the `Enable Link` field to **n**.
4. Note which link is used for the data module. This link number will be used when assigning a processor channel.
5. Press ENTER to save your changes.
6. Continue with the next procedure, "Assign the Processor Channel".

Assign the Processor Channel

Administer two processor channels: one gateway TCP to convert X.25 to TCP, and one gateway TCP to identify the TCP port used to communicate with the Lucent INTUITY system.

To assign the processor channels:

1. Enter **change communication-interface processor-channels**

   The system displays the Processor Channel Assignment screen (Figure 5-18).

```
change communication-interface processor-channels     Page   1 of  24   SPE B
                         PROCESSOR CHANNEL ASSIGNMENT
Proc                   Gtwy      Interface          Destination      Session   Mach
Chan Enable   Appl.     To  Mode Link/Chan        Node        Port  Local/Remote ID
  1:   y     audix          s    1   5002  audix1           0     1     1     1
  2:   y     dcs            s    5   1     switch2          0     1     3     3
  3:   y     gtwy-tcp  4    s    1   6003  audix1           0     3     1
  4:   y     gtwy-tcp  3         5   2                            1     3
  5:   n
  6:   n
  7:   n
  8:   n
  9:   n
 10:   n
 11:   n
 12:   n
 13:   n
 14:   n
 15:   n
 16:   n
```

Figure 5-18. Sample Processor Channel Assignment (Host - Node #1)

2. Place information into the fields as defined in Worksheet C in Chapter 2, "Switch Integration Planning". Use the link number from the data module above. Note that the DCS and AUDIX processor channels shown here are for example only and would already be administered.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Enable the Link on the Data Module Screen".

Enable the Link on the Data Module Screen

After you have assigned the processor channel, you must go back and enable the link on the data module used for this link.

1. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension disabled earlier.

   The system displays the Data Module screen.
2. Change the `Enable Link` field to **y**.
3. Press ENTER to save your changes.

Lucent INTUITY System Administration

Do the following procedures to administer the Lucent INTUITY system.

Administer the Switch Interface

You must now administer the switch interface to include the "Remote - Node #3" switch. Do the following:

1. Starting at the Lucent INTUITY main menu, select:

   ```
   > Switch Interface Administration
   > Call Data Interface Administration
   > Switch Link Administration
   ```

   The system responds with the Switch Interface Administration window (Figure 5-19).

```
+------------------------------------------------------------------------+
+                    Switch Interface Administration                     +
+------------------------------------------------------------------------+
| Switch Link Type: LAN                      Country: UNITED STATES      |
| Extension Length: 4                         Switch: DEFINITY OVERLAN   |
| Host Switch Number: 1                                                  |
| AUDIX Number: 1                                                        |
|                                                                        |
|Switch     IP Address/      TCP      Switch     IP Address/      TCP    |
|Number     Host Name        Port     Number     Host Name        Port   |
|   1      192.168.2.2       5002                                       |
|   2      192.168.2.10      5002                                       |
|   3      192.168.2.2       6003                                       |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+
```

Figure 5-19. Sample Switch Interface Administration Window (Lucent INTUITY System)

2. Use Worksheet G, in Chapter 2, ‘‘Switch Integration Planning’’ to enter the correct values in this window. Note that for “Remote - Node #3,” you use the IP address of the host switch and the TCP Port as administered for the gateway at the host switch.
3. Press F3 (Save).

Configuration C — ISDN Link

Figure 5-20 illustrates Configuration C. This configuration includes two R7 switches connected via ethernet (Host - Node #1 and Remote - Node #2), a remote switch connected to the host via X.25 (Remote - Node #3), a remote switch connected to the host via ISDN (Remote - Node #4), and the Lucent INTUITY system connected to the host switch. The information in this section shows you how to administer the link from the Lucent INTUITY system to the remote switch via ISDN.

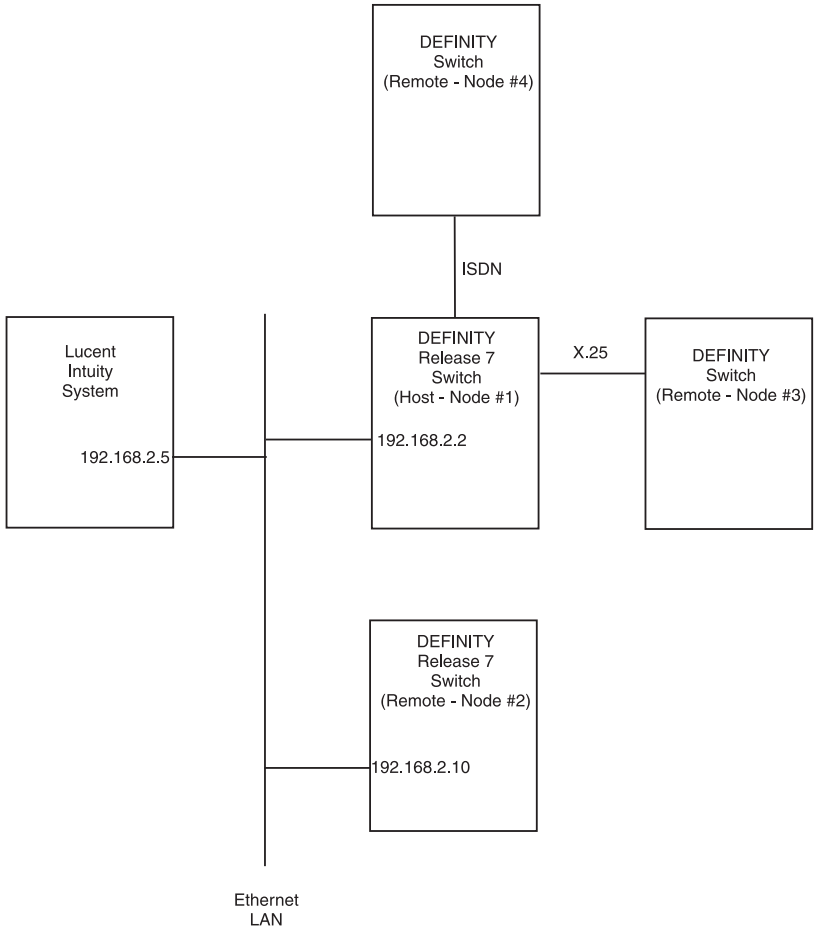


Figure 5-20. Configuration C — ISDN Link

Prerequisites

The procedures in this section presumes the following:

- The host switch is DEFINITY R7.
- DCS connectivity and administration between the host switch and the remote switches is up and working. This administration is described in *DEFINITY ECS R7 Administration for Network Connectivity*, 555-233-501.
- The basic configuration shown in Chapter 3, ‘‘Administration for Switch-to-Lucent Intuity System Link’’ is up and working.
- The administration for all previous configurations have been done and is up and working.

Procedure Overview

The following procedures must be done on the “Remote - Node #4” switch:

- Assign the node/adjunct name for the Lucent INTUITY system.
- Administer a hunt group.
- Administer a TSC index with the AUDIX application on a signaling group already assigned between “Host - Node #1” and “Remote - Node #4.”
- Set up a coverage path for access to the voice port hunt group.
- Apply the coverage path to stations, and if the switch is an *r* model, specify the node name of the Lucent INTUITY system for each station that has a voice mailbox on the Lucent INTUITY system.

The following procedures must be done on the “Host - Node #1” switch:

- Disable the link on the data module screen.
- Administer one gateway processor channel to identify the TCP port used to communicate with the Lucent INTUITY system.
- Enable the link on the data module screen.
- Administer a TSC index.
- Administer an ISDN TSC gateway.

The following procedure must be done on the Lucent INTUITY system:

- Administer the switch interface to the “Remote - Node #4” switch.

"Remote - Node #4" Switch Procedures

Do the following procedures to administer the "Remote - Node #4" switch.

Assign Node/Adjunct Names

The Lucent INTUITY system must be administered with unique node/adjunct names and IP addresses (IP addresses are for R7 only). In addition, different models of DEFINITY switches can support different numbers of Lucent INTUITY systems.

- *csi* and *si* support one Lucent INTUITY system.
- *r* supports up to eight Lucent INTUITY systems.
  - — Identify the node names of each of the eight possible Lucent INTUITY systems.
  - — Select names that are unique for each system, for example **audix1** or **audix2**. Although you name the systems as AUDIX, the name works correctly with the Lucent INTUITY system. This node name is used when you administer the data modules, stations, and the processor channel.

Use the following procedure to define the node names:

1. Enter **change node-names** (R7) or **change adjunct-names** (pre-R7).

   The system displays the appropriate screen (Figure 5-21). This example shows an R7 screen

```
change node-names                                Page   1 of   6   SPE B
                                 NODE NAMES

       Audix Names    IP Address          MSA Names      IP Address
       audix1         192.168.2  .5       ________       ___.___.___.___
       ________       ___.___.___.___     ________       ___.___.___.___
       ________       ___.___.___.___     ________       ___.___.___.___
       ________       ___.___.___.___     ________       ___.___.___.___
       ________       ___.___.___.___     ________       ___.___.___.___
       ________       ___.___.___.___     ________       ___.___.___.___
       ________       ___.___.___.___     ________       ___.___.___.___
       ________       ___.___.___.___
```

Figure 5-21. Sample Node Names Screen, Page 1 (Remote - Node #4)

2. See Worksheet D in Chapter 2, "Switch Integration Planning", for the correct node name(s) and IP address(es) to use for the Lucent INTUITY system.

3. Press ENTER to save your changes.
4. Continue with the next procedure, "Assign a Hunt Group at the Remote Switch".

Assign a Hunt Group at the Remote Switch

This section contains procedures for administering a Hunt Group on a remote switch in a DCS network. No host switch administration is required.

1. Enter **add hunt-group** <***number***> at the remote switch administration terminal to assign a new hunt group.

   The system displays the Hunt Group screen (Figure 5-22).

```
add hunt-group 2                                    Page   1 of   3   SPE B
                                HUNT GROUP

           Group Number: 2                                    ACD? n
             Group Name: AUDIX                              Queue? n
        Group Extension: 72000                             Vector? n
             Group Type: ucd-mia                 Coverage Path: _________
                     TN: 1          Night Service Destination: _________
                    COR: 35                    MM Early Answer? n

          Security Code: _________
    ISDN Caller Display: _________
```

Figure 5-22. Sample Hunt Group Screen, Page 1 (Remote - Node #4)

2. Use Worksheet I in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 1 of the Hunt Group screen.
3. Press NEXTPAGE to move to Page 2 of the Hunt Group screen (Figure 5-23).

```
add hunt-group 2                                    Page   2 of   3   SPE B
                                HUNT GROUP

                         Message Center: rem-audix
                       AUDIX Extension: _____
              Message Center AUDIX Name: audix1_____________
                                Primary? y
   Calling Party Number to INTUITY AUDIX? n
                          LWC Reception: none
                             AUDIX Name: audix1_____________
                  Messaging Server Name: _____________________
          First Announcement Extension: _____ Delay (sec): __
         Second Announcement Extension: _____ Delay (sec): __ Recurring? _
```

Figure 5-23. Sample Hunt Group Screen, Page 2 (Remote - Node #4)

4. Use Worksheet I in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 2 of the Hunt Group screen. Note that no administration is required on Page 3. The Lucent INTUITY system voice ports are only connected to the host switch.
5. Press ENTER to save your changes.
6. Continue with the next procedure, "Administer a TSC Index".

Administer a TSC Index

Use the Signaling Group screen to administer the call-associated (CA) and non-call associated (NCA) Temporary Signaling Connections (TSC) used to support DCS over the ISDN PRI D-channel. This index is added to an existing signaling group.

1. Enter **change signaling-group** <***x***> where x is the signaling group associated with the DCS non-call-associated temporary signaling connection (NCA-TSC) between "Remote - Node #4" and "Host - Node #1." The action assumes that DCS is administered already on this signaling channel.

   The system displays Page 1 the Signaling Group screen.

2. Press NEXTPAGE to move to Page 2 of the Signaling Group screen.

   The system displays Page 2 the Signaling Group screen (Figure 5-24).

```
                                                          Page 2 of 5
                    ADMINISTERED NCA TSC ASSIGNMENT

Service/Feature:                  As-needed Inactivity Time-out (min):

TSC Index    Local Ext.  Enabled  Establish   Dest. Digits   Appl.  Machine ID
    1:        29998          y     permanent      59998      dcs      1
    2:        29997          y     permanent      59997      audix    1
    3:        _____          _     _________      _____      _____    ___
    4:        _____          _     _________      _____      _____    ___
    5:        _____          _     _________      _____      _____    ___
    6:        _____          _     _________      _____      _____    ___
    7:        _____          _     _________      _____      _____    ___
    8:        _____          _     _________      _____      _____    ___
    9:        _____          _     _________      _____      _____    ___
   10:        _____          _     _________      _____      _____    ___
   11:        _____          _     _________      _____      _____    ___
   12:        _____          _     _________      _____      _____    ___
   13:        _____          _     _________      _____      _____    ___
   14:        _____          _     _________      _____      _____    ___
   15:        _____          _     _________      _____      _____    ___
   16:        _____          _     _________      _____      _____    ___
```

Figure 5-24. Sample Signaling Group Screen, Page 2 (Remote - Node #4)

3. Use Worksheet J in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 2 of the Signaling Group screen.
4. Press ENTER to save your changes.
5. Continue with the next procedure, "Assign the Call Coverage Path".

Assign the Call Coverage Path

Define a call coverage path for the subscribers with the remote hunt group as a coverage point. You may need to define several call coverage paths depending on how the customer wants to handle call coverage for different groups of subscribers. If the Lucent INTUITY system has been integrated with an existing switch, you may need to add the Lucent INTUITY hunt group as another coverage point for existing coverage paths.

Use the following procedure to define a call coverage path.

1. Enter **add coverage path** <***coverage path number***> at the command prompt. See Worksheet F in Chapter 2, "Switch Integration Planning" to find the call coverage path number.

   The system displays the Coverage Path screen (Figure 5-25).

```
add coverage path 1
                              COVERAGE PATH

                 Coverage Path Number: 1
                                              Hunt after Coverage? n
                     Next Path Number: __     Linkage: _____________

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

COVERAGE POINTS

    Terminate to Coverage Pts. with Bridged Appearances? n

      Point1: h2___             Point2: _____            Point3: _____
      Point4: _____             Point5: _____            Point6: _____
```

Figure 5-25. Sample Coverage Path Screen (Remote - Node #4)

2. Use Worksheet F in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on the Coverage Path screen.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Modify the Station Screen for Each Subscriber".

Modify the Station Screen for Each Subscriber

After you administer the call coverage path, you must administer all subscriber stations to use the correct coverage path, and for stations on *r* systems, assign which Lucent INTUITY system is administered for that station's mailbox. Each subscriber station must contain the correct information for the Lucent INTUITY system to operate. Use the instructions in this section to administer the stations.

1. Enter **change station** <***test station extension***> at the `enter command` prompt.

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

   The system displays the Station screen (Figure 5-26).

```
change station 3066                                  Page   1 of   4   SPE B
                                    STATION

Extension: 3066                        Lock Messages? n          BCC: 0
     Type: 6408D+                      Security Code:             TN: 1
     Port: 01a0811                   Coverage Path 1: 1           COR: 1
     Name: _____________________     Coverage Path 2: __          COS: 1
                                      Hunt-to Station: _____

STATION OPTIONS
             Data Module? n              Personalized Ringing Pattern: 1
          Speakerphone: 2-way                    Message Lamp Ext: 3066
       Display Language: english                  Mute Button Enabled? y


                                                MM Complex Data Ext: _____
```

Figure 5-26. Sample Station Screen, Page 1 (Remote - Node #4)

2. Enter the coverage path you created for the Lucent INTUITY system in the "Assign the Call Coverage Path" above. If you do not remember the coverage path number, see Worksheet F, in Chapter 2, "Switch Integration Planning".

3. Press NEXTPAGE to move to page 2.

   The system displays the Station screen (Figure 5-27).

```
change station 3066                                  Page   2 of   4   SPE B
                                    STATION
FEATURE OPTIONS
           LWC Reception: AUDIX          Auto Select Any Idle Appearance? n
          LWC Activation? y                       Coverage Msg Retrieval? y
           CDR Privacy? n                                Auto Answer: none
   Redirect Notification? y                            Data Restriction? n
 Per Button Ring Control? n                  Idle Appearance Preference? n
   Bridged Call Alerting? n
  Active Station Ringing: single                 Restrict Last Appearance? y

        H.320 Conversion? n
       Service Link Mode: _______  Per Station CPN - Send Calling Number? n
         Multimedia Mode: basic                  Multimedia Early Answer? n
                                                 Audible Message Waiting? n
                                               Display Client Redirection? n
             AUDIX Name: audix1                Select Last Used Appearance? n
   Messaging Server Name: _________
```

Figure 5-27. Sample Station Screen, Page 2 (Remote - Node #4)

4. Enter **AUDIX** in the `LWC Reception`? field.
5. Enter **y** in the `LWC Activation` field if the subscriber is assigned the Leave Word Calling feature.
6. Enter **y** in the `Redirect Notification` field.
7. Enter **led**, **neon**, or **audible** in the `Message Waiting Indicator:` field if the voice terminal has a message waiting indicator (MWI) lamp. This instruction applies to 500, 2500, and 7104A telephones only.
8. On an *r* system, enter the node name of the Lucent INTUITY system that has the voice mailbox for this station in the `AUDIX Name` field.
9. Press ENTER to save your changes.
10. Repeat this procedure for all subscriber stations.

"Host - Node #1" Switch Procedures

Do the following procedures to administer the "Host - Node #1" switch.

Disable the Link on the Data Module Screen

Before you administer a processor channel, you must disable the link on the data module that is used for the ethernet link.

1. Enter **list communication-interface links** to display a list of the interface links administered on the switch. Find the extension number for the data module used for the ethernet link.
2. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension.

   The system displays the Data Module screen.
3. Change the `Enable Link` field to **n**.
4. Note which link is used for the data module. This link number will be used when assigning a processor channel.
5. Press ENTER to save your changes.
6. Continue with the next procedure, "Assign the Processor Channel".

Assign the Processor Channel

Administer one gateway to identify the TCP port used to communicate with the Lucent INTUITY system.

To assign the processor channels:

1. Enter **change communication-interface processor-channels**

   The system displays the Processor Channel Assignment screen (Figure 5-28).

```
change communication-interface processor-channels     Page   1 of  24   SPE B
                        PROCESSOR CHANNEL ASSIGNMENT
Proc                    Gtwy     Interface         Destination       Session    Mach
Chan Enable    Appl.     To  Mode Link/Chan         Node         Port   Local/Remote ID
  1:    y    audix           s     1   5002  audix1              0       1      1     1
  2:    y    dcs             s     5   1     switch2             0       1      3     3
  3:    y    gtwy-tcp   4    s     1   6003  audix1              0       3      1
  4:    y    gtwy-tcp   3          5   2                                 1      3
  5:    y    gateway         s     1   6004  audix1              0       4      1
  6:    n                                                        0
  7:    n                                                        0
  8:    n                                                        0
  9:    n                                                        0
 10:    n                                                        0
 11:    n                                                        0
 12:    n                                                        0
 13:    n                                                        0
 14:    n                                                        0
 15:    n                                                        0
 16:    n                                                        0
```

Figure 5-28. Sample Processor Channel Assignment (Host - Node #1)

2. Place information into the fields as defined in Worksheet K in Chapter 2, "Switch Integration Planning". Use the link number from the data module above. Note that processor channels 1-4 shown here are for example only and would already be administered.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Enable the Link on the Data Module Screen".

Enable the Link on the Data Module Screen

After you have assigned the processor channel, you must go back and enable the link on the data module used for this link.

1. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension disabled earlier.

   The system displays the Data Module screen.
2. Change the `Enable Link` field to **y**.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Administer a TSC Index".

Administer a TSC Index

Use the signaling group screen to administer a TSC index between the signaling group already administered between the "Host - Node #1" switch and the "Remote - Node #4" switch.

1. Enter **change signaling-group** <***x***> where x is the signaling group associated with the DCS non-call associated temporary signaling connection (NCA-TSC) on the remote switch. The action assumes that DCS is administered already on this signaling channel.

   The system displays Page 1 of the Signaling Group screen.
2. Press NEXTPAGE to move to Page 2 of the Signaling Group screen.

   The system displays Page 2 of the Signaling Group screen (Figure 5-29).

```
                                                          Page 2 of 5
                      ADMINISTERED NCA TSC ASSIGNMENT

Service/Feature:                  As-needed Inactivity Time-out (min): 30
TSC Index  Local Ext.  Enabled  Establish    Dest. Digits   Appl.   Machine ID
     1:      59998        y     permanent     29998        dcs       1
     2:      59997        y     permanent     29997        gateway
     3:      _____        _     _________     _____________ _____    __
     4:      _____        _     _________     _____________ _____    __
     5:      _____        _     _________     _____________ _____    __
     6:      _____        _     _________     _____________ _____    __
     7:      _____        _     _________     _____________ _____    __
     8:      _____        _     _________     _____________ _____    __
     9:      _____        _     _________     _____________ _____    __
    10:      _____        _     _________     _____________ _____    __
    11:      _____        _     _________     _____________ _____    __
    12:      _____        _     _________     _____________ _____    __
    13:      _____        _     _________     _____________ _____    __
    14:      _____        _     _________     _____________ _____    __
    15:      _____        _     _________     _____________ _____    __
    16:      _____        _     _________     _____________ _____    __
```

Figure 5-29. Sample Signaling Group Screen, Page 2 (Host - Node #1)

3. Use Worksheet L in Chapter 2, ‘‘Switch Integration Planning’’ to enter the correct values in the fields on page 2 of the Signaling Group screen.
4. Press ENTER to save your changes.
5. Continue with the next procedure, ‘‘Assign the ISDN TSC Gateway Channel’’.

Assign the ISDN TSC Gateway Channel

This procedure maps a signaling group/TSC-index pair, completed in ‘‘Administer a TSC Index’’ above, to the processor channel used by the Lucent INTUITY system completed in ‘‘Assign the Processor Channel’’ above.

1. Enter **change isdn tsc-gateway**

   The system displays the ISDN TSC Gateway Channel Assignment screen (Figure 5-30).

```
change isdn tsc-gateway                                    Page 1 of 2

ISDN TSC GATEWAY CHANNEL ASSIGNMENT

   Sig    Adm'd NCA  Processor  Appli-      Sig    Adm'd NCA  Processor  Appli-
  Group   TSC Index  Channel    cation     Group   TSC Index  Channel    cation
  1: 2    2          5          audix    17:___    __         ___        _______
  2:___   __         ___        _______  18:___    __         ___        _______
  3:___   __         ___        _______  19:___    __         ___        _______
  4:___   __         ___        _______  20:___    __         ___        _______
  5:___   __         ___        _______  21:___    __         ___        _______
  6:___   __         ___        _______  22:___    __         ___        _______
  7:___   __         ___        _______  23:___    __         ___        _______
  8:___   __         ___        _______  24:___    __         ___        _______
  9:___   __         ___        _______  25:___    __         ___        _______
 10:___   __         ___        _______  26:___    __         ___        _______
 11:___   __         ___        _______  27:___    __         ___        _______
 12:___   __         ___        _______  28:___    __         ___        _______
 13:___   __         ___        _______  29:___    __         ___        _______
 14:___   __         ___        _______  30:___    __         ___        _______
 15:___   __         ___        _______  31:___    __         ___        _______
 16:___   __         ___        _______  32:___    __         ___        _______
```

Figure 5-30. Sample R7 ISDN TSC Gateway Channel Assignment Screen (Host - Node #1)

2. Use Worksheet M in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on the Gateway Channel Assignment screen.
3. Press ENTER to save your changes.

Lucent INTUITY System Administration

Do the following procedures to administer the Lucent INTUITY system.

Administer the Switch Interface

You must now administer the switch interface to include the “Remote - Node #4” switch. Do the following:

1. Starting at the Lucent INTUITY main menu, select:

```
> Switch Interface Administration
    > Call Data Interface Administration
        > Switch Link Administration
```

The system responds with the Switch Interface Administration window (Figure 5-31).

```
+------------------------------------------------------------------------+
+                    Switch Interface Administration                     +
+------------------------------------------------------------------------+
| Switch Link Type: LAN                        Country: UNITED STATES    |
| Extension Length: 4                           Switch: DEFINITY OVERLAN |
| Host Switch Number: 1                                                  |
| AUDIX Number: 1                                                        |
|                                                                        |
|Switch     IP Address/      TCP      Switch     IP Address/      TCP    |
|Number      Host Name       Port     Number     Host Name        Port   |
|   1      192.168.2.2       5002                                        |
|   2      192.168.2.10      5002                                        |
|   3      192.168.2.2       6003                                        |
|   4      192.168.2.2       6004                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+
```

Figure 5-31. Sample Switch Interface Administration Window (Lucent INTUITY System)

2. Use Worksheet G, in Chapter 2, “Switch Integration Planning” to enter the correct values in this window. Note that for “Remote - Node #4,” you use the IP address of the host switch and the TCP Port as administered for the gateway at the host switch.
3. Press F3 (Save).

Configuration D — PPP Link

Figure 5-32 illustrates Configuration D. This configuration includes two R7 switches connected via ethernet (Host - Node #1 and Remote - Node #2), a remote switch connected to the host via X.25 (Remote - Node #3), a remote switch connected to the host via ISDN (Remote - Node #4), a remote switch connected to the host via PPP (Remote - Node #5), and the Lucent INTUITY system connected to the host switch. The information in this section shows you how to administer the link from the Lucent INTUITY system to the remote switch connected via PPP.

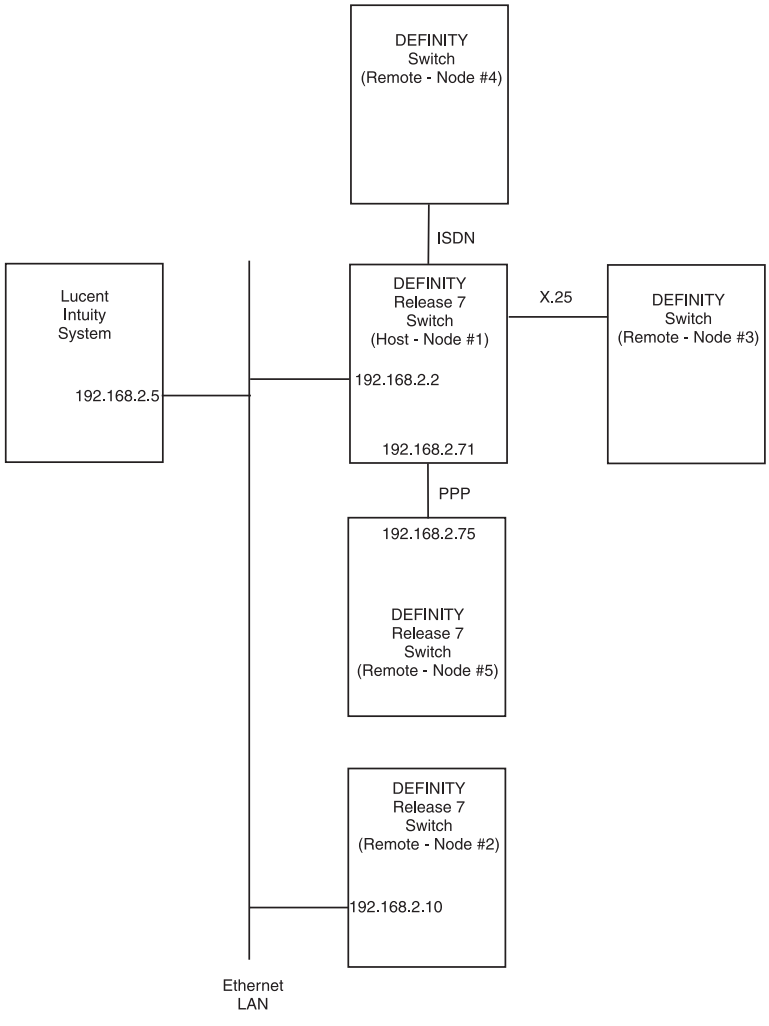


Figure 5-32. Configuration D — PPP Link

Prerequisites

The procedures in this section presumes the following:

- The host switch is DEFINITY R7.
- DCS connectivity and administration between the host switch and the remote switch is up and working. This administration is described in *DEFINITY ECS R7 Administration for Network Connectivity*, 555-233-501.
- The basic configuration shown in Chapter 3, ‘‘Administration for Switch-to-Lucent Intuity System Link’’ is up and working.
- The administration for all previous configurations have been done and is up and working.

Procedure Overview

The following procedures must be done on the “Remote - Node #5” switch:

- Assign the node name for the Lucent INTUITY system.
- Administer a hunt group.
- Disable the link on the data module screen.
- Administer a processor channel for the link from the switch to the Lucent INTUITY system.
- Enable the link on the data module screen.
- Enable a network route using the IP route screen.
- Set up a coverage path for access to the voice port hunt group.
- Apply the coverage path to stations, and if the switch is an *r* model, specify the node name of the Lucent INTUITY system for each station that has a voice mailbox on the Lucent INTUITY system.

The following procedure must be done on the Lucent INTUITY system:

- Administer the switch interface to the “Remote - Node #5” switch.

“Remote - Node #5″ Switch Procedures

Do the following procedures to administer the “Remote - Node #5” switch.

Assign Node Names

The Lucent INTUITY system must be administered with unique node names and IP addresses. In addition, different models of DEFINITY switches can support different numbers of Lucent INTUITY systems.

- R7csi and R7si support one Lucent INTUITY system.
- R7r supports up to eight Lucent INTUITY systems.
  - — Identify the node names of each of the eight possible Lucent INTUITY systems.
  - — Select names that are unique for each system, for example **audix1** or **audix2**. Although you name the systems as AUDIX, the name works correctly with the Lucent INTUITY system. This node name is used when you administer the data modules, stations, and the processor channel.

Use the following procedure to define the node names:

1. Enter **change node-names**

   The system displays the Node Name screen (Figure 5-33).

```
change node-names                                Page   1 of   6   SPE B
                                 NODE NAMES

      Audix Names    IP Address          MSA Names      IP Address
      audix1    192.168.2  .5           ________       ___.___.___.___
      ________  ___.___.___.___         ________       ___.___.___.___
      ________  ___.___.___.___         ________       ___.___.___.___
      ________  ___.___.___.___         ________       ___.___.___.___
      ________  ___.___.___.___         ________       ___.___.___.___
      ________  ___.___.___.___         ________       ___.___.___.___
      ________  ___.___.___.___         ________       ___.___.___.___
      ________  ___.___.___.___
```

Figure 5-33. Sample Node Names Screen, Page 1 (Remote - Node #5)

2. See Worksheet D in Chapter 2, ‘‘Switch Integration Planning’’, for the correct node name(s) and IP address(es) to use for the Lucent INTUITY system.
3. Press ENTER to save your changes.
4. Continue with the next procedure, ‘‘Assign a Hunt Group at the Remote Switch’’.

Assign a Hunt Group at the Remote Switch

This section contains procedures for administering a Hunt Group on a remote switch in a DCS network. No host switch administration is required.

1. Enter **add hunt-group** <***number***> at the remote switch administration terminal to assign a new hunt group.

   The system displays the Hunt Group screen (Figure 5-34).

```
add hunt-group 2                                    Page   1 of   3   SPE B
                                HUNT GROUP

           Group Number: 2                                    ACD? n
             Group Name: AUDIX                              Queue? n
        Group Extension: 72000                             Vector? n
             Group Type: ucd-mia                  Coverage Path: _____
                     TN: 1          Night Service Destination: _____
                    COR: 35                     MM Early Answer? n

          Security Code: _____
     ISDN Caller Display: _____
```

Figure 5-34. Sample R7 Hunt Group Screen, Page 1 (Remote - Node #5)

2. Use Worksheet I in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 1 of the Hunt Group screen.
3. Press NEXTPAGE to move to Page 2 of the Hunt Group screen (Figure 5-35).

```
add hunt-group 2                                    Page   2 of   3   SPE B
                                HUNT GROUP

                          Message Center: rem-audix
                        AUDIX Extension: _____
                Message Center AUDIX Name: audix1
                                Primary? y
    Calling Party Number to INTUITY AUDIX? n
                          LWC Reception: none
                             AUDIX Name: audix1
                    Messaging Server Name: _____
             First Announcement Extension: _____ Delay (sec): __
            Second Announcement Extension: _____ Delay (sec): __ Recurring? _
```

Figure 5-35. Sample R7 Hunt Group Screen, Page 2 (Remote - Node #5)

4. Use Worksheet I in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 2 of the Hunt Group screen. Note that no administration is required on Page 3. The Lucent INTUITY system voice ports are only connected to the host switch.
5. Press ENTER to save your changes.
6. Continue with the next procedure, "Disable the Link on the Data Module Screen".

Disable the Link on the Data Module Screen

Before you administer a processor channel, you must disable the link on the data module that is used for the ethernet link to the host switch.

1. Enter **list communication-interface links** to display a list of the interface links administered on the switch. Find the extension number for the data module used for the ethernet link.
2. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension.

   The system displays the Data Module screen.
3. Change the `Enable Link` field to **n**.
4. Note which link is used for the data module. This link number will be used when assigning a processor channel.
5. Press ENTER to save your changes.
6. Continue with the next procedure, "Assign the Processor Channel".

Assign the Processor Channel

Assign a processor channel for the Lucent INTUITY system connection. Use a free processor channel for the connection. Note that the DCS processor channel shown here is for example only and would already be administered.

To assign the processor channel:

1. Enter **change communication-interface processor-channels**

   The system displays the Processor Channel Assignment screen (Figure 5-36).

```
channge communication-interface processor-channels     Page   1 of  XX    SPE B
                        PROCESSOR CHANNEL ASSIGNMENT
Proc                     Gtwy      Interface         Destination       Session   Mach
Chan Enable   Appl.       To   Mode Link/Chan      Node          Port  Local/Remote ID
  1:   y     dcs______          c___ 1_ 5003_ switch1_______ 0___  1__  1__  1__
  2:   y     audix____          s___ 2_ 5002  audix1________ 0___  5__  1__  1__
  3:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
  4:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
  5:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
  6:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
  7:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
  8:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
  9:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
 10:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
 11:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
 12:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
 13:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
 14:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
 15:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
 16:   n     ________           ____ __ ____  ______________ 0___  ___  ___  ___
```

Figure 5-36. Sample Processor Channel Assignment (Remote - Node #5)

2. Place information into the fields as defined in Worksheet C in Chapter 2, "Switch Integration Planning". Use the link number from the data module above. The DCS processor channel would already be assigned and is shown here for information only.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Enable the Link on the Data Module Screen".

Enable the Link on the Data Module Screen

After you have assigned the processor channel, you must go back and enable the link on the data module used for this link.

1. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension disabled earlier.

   The system displays the Data Module screen.
2. Change the `Enable Link` field to **y**.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Add IP Routes", if needed.

Add IP Routes

This procedure assigns the IP route for communications between two DEFINITY ECS R7 switches. An IP route for PPP is required only if there are one or more intermediate nodes between the endpoints. If the endpoints are directly connected with no intermediate nodes, an IP route is not needed.

NOTE:
The node names used in this example will have been assigned during the administration for DCS.

To assign an IP Route:

1. Enter **add ip-route <number or next>**

   NOTE:
   Use a number or the word “next.” If you use next the system will automatically provide the next available number.

   The system displays the IP Routing screen (Figure 5-37).

```
add ip-route 1                                    Page   1 of   1   SPE A
                        IP ROUTING


    Route Number: 1
Destination Node: audix1
         Gateway: switch1ppp
     C-LAN Board: 01d02
          Metric: 0
```

Figure 5-37. Sample R7 IP Route Screen (Remote - Node #5)

2. Place information into the fields as defined in Worksheet C in Chapter 2, “Switch Integration Planning”.
3. Press ENTER to save your changes.
4. Continue with the next procedure, “Assign the Call Coverage Path”.

Assign the Call Coverage Path

Define a call coverage path for the subscribers with the remote hunt group as a coverage point. You may need to define several call coverage paths depending on how the customer wants to handle call coverage for different groups of subscribers. If the Lucent INTUITY system has been integrated with an existing switch, you may need to add the Lucent INTUITY hunt group as another coverage point for existing coverage paths.

Use the following procedure to define a call coverage path.

1. Enter **add coverage path** <***coverage path number***> at the command prompt. See Worksheet F in Chapter 2, "Switch Integration Planning" to find the call coverage path number.

   The system displays the Coverage Path screen (Figure 5-38).

```
add coverage path 1
                                COVERAGE PATH

                 Coverage Path Number: 1
                                                 Hunt after Coverage? n
                     Next Path Number: __        Linkage: _____________

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

COVERAGE POINTS

    Terminate to Coverage Pts. with Bridged Appearances? n

      Point1: h2___             Point2: _____             Point3: _____
      Point4: _____             Point5: _____             Point6: _____
```

Figure 5-38. Sample Coverage Path Screen (Remote - Node #5)

2. Use Worksheet F in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on the Coverage Path screen.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Modify the Station Screen for Each Subscriber".

Modify the Station Screen for Each Subscriber

After you administer the call coverage path, you must administer all subscriber stations to use the correct coverage path, and for stations on *r* systems, assign which Lucent INTUITY system is administered for that station's mailbox. Each subscriber station must contain the correct information for the Lucent INTUITY system to operate. Use the instructions in this section to administer the stations.

1. Enter **change station** *<test station extension>* at the `enter command` prompt.

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

   The system displays the Station screen (Figure 5-39).

```
change station 3066                                Page   1 of   4   SPE B
                                    STATION

Extension: 3066                        Lock Messages? n          BCC: 0
     Type: 6408D+                      Security Code:             TN: 1
     Port: 01a0811                   Coverage Path 1: 1           COR: 1
     Name: _____________________     Coverage Path 2: __          COS: 1
                                      Hunt-to Station: _____

STATION OPTIONS
            Data Module? n                 Personalized Ringing Pattern: 1
          Speakerphone: 2-way                      Message Lamp Ext: 3066
       Display Language: english                    Mute Button Enabled? y


                                                 MM Complex Data Ext: _____
```

Figure 5-39. Sample Station Screen, Page 1 (Remote - Node #5)

2. Enter the coverage path you created for the Lucent INTUITY system in the "Assign the Call Coverage Path" above. If you do not remember the coverage path number, see Worksheet F, in Chapter 2, "Switch Integration Planning".
3. Press NEXTPAGE to move to Page 2.

   The system displays Page 2 of the Station screen (Figure 5-40).

```
change station 3066                                Page   2 of   4   SPE B
                                    STATION
FEATURE OPTIONS
          LWC Reception: AUDIX          Auto Select Any Idle Appearance? n
         LWC Activation? y                       Coverage Msg Retrieval? y
          CDR Privacy? n                                Auto Answer: none
   Redirect Notification? y                          Data Restriction? n
 Per Button Ring Control? n                 Idle Appearance Preference? n
   Bridged Call Alerting? n
  Active Station Ringing: single              Restrict Last Appearance? y

       H.320 Conversion? n
      Service Link Mode: _________ Per Station CPN - Send Calling Number? n
        Multimedia Mode: basic                  Multimedia Early Answer? n
                                                Audible Message Waiting? n
                                             Display Client Redirection? n
             AUDIX Name: audix1             Select Last Used Appearance? n
   Messaging Server Name: ___________
```

Figure 5-40. Sample Station Screen, Page 2 (Remote - Node #5)

4. Enter **AUDIX** in the `LWC Reception`? field.
5. Enter **y** in the `LWC Activation` field if the subscriber is assigned the Leave Word Calling feature.
6. Enter **y** in the `Redirect Notification` field.
7. Enter **led**, **neon**, or **audible** in the `Message Waiting Indicator:` field if the voice terminal has a message waiting indicator (MWI) lamp. This instruction applies to 500, 2500, and 7104A telephones only.
8. On an *r* system, enter the node name of the Lucent INTUITY system that has the voice mailbox for this station in the `AUDIX Name` field.
9. Press ENTER to save your changes.
10. Repeat this procedure for all subscriber stations.

Lucent INTUITY System Administration

Do the following procedures to administer the Lucent INTUITY system.

Administer the Switch Interface

You must now administer the switch interface to include the “Remote - Node #5” switch. Do the following:

1. Starting at the Lucent INTUITY main menu, select:

```
> Switch Interface Administration
    > Call Data Interface Administration
        > Switch Link Administration
```

The system responds with the Switch Interface Administration window (Figure 5-41).

```
+------------------------------------------------------------------------+
+                    Switch Interface Administration                     +
+------------------------------------------------------------------------+
| Switch Link Type: LAN                      Country: UNITED STATES      |
| Extension Length: 4                         Switch: DEFINITY OVERLAN   |
| Host Switch Number: 1                                                  |
| AUDIX Number: 1                                                        |
|                                                                        |
|Switch     IP Address/      TCP      Switch     IP Address/      TCP    |
|Number     Host Name        Port     Number     Host Name        Port   |
|   1      192.168.2.2       5002                                       |
|   2      192.168.2.10      5002                                       |
|   3      192.168.2.2       6003                                       |
|   4      192.168.2.2       6004                                       |
|   5      192.168.2.75      5002                                       |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+
```

Figure 5-41. Sample Switch Interface Administration Window (Lucent INTUITY System)

2. Use Worksheet G, in Chapter 2, “Switch Integration Planning” to enter the correct values in this window. Note that for “Remote - Node #5,” you use the IP address of the “Remote - Node #5” switch using TCP Port 5002.
3. Press F3 (Save).

Configuration E — X.25 Gateway Link

Figure 5-42 illustrates Configuration D. This configuration includes two R7 switches connected via ethernet (Host - Node #1 and Remote - Node #2), a remote switch connected to the host via X.25 (Remote - Node #3), a remote switch connected to the host via ISDN (Remote - Node #4), a remote switch connected to the host via PPP (Remote - Node #5), a remote switch connected to "Remote - Node #2" via X.25, and the Lucent INTUITY system connected to the host switch. The information in this section shows you how to administer the link from the Lucent INTUITY system to the remote switch using an X.25 gateway.

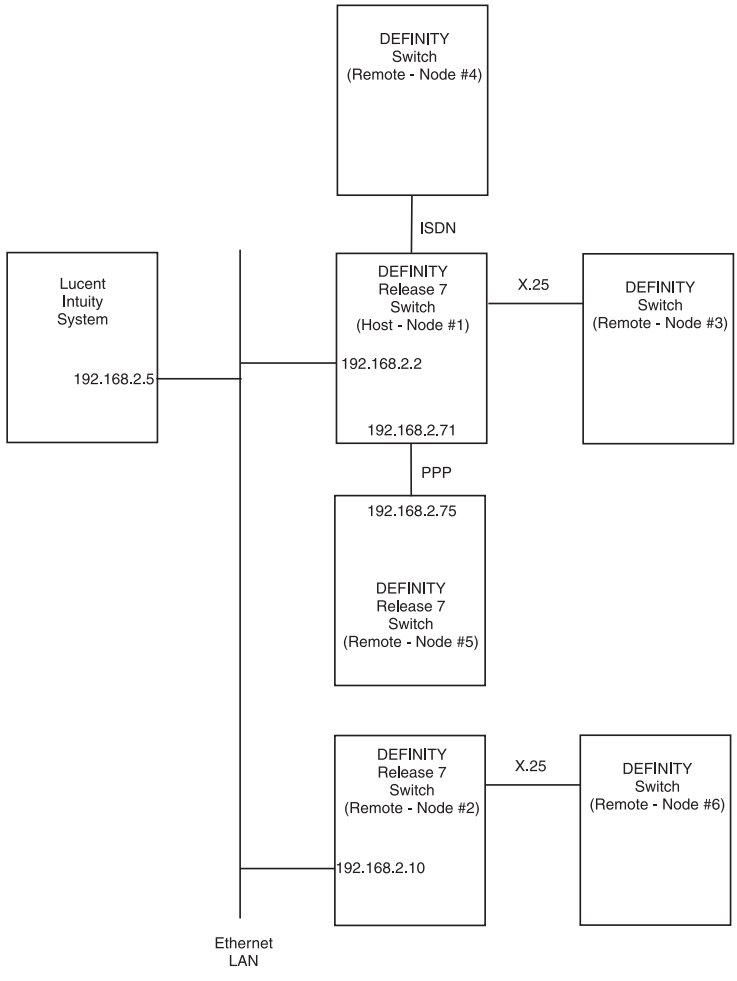


Figure 5-42. Configuration E — X.25 Gateway Link

Prerequisites

The procedures in this section presumes the following:

- The host switch is DEFINITY R7.
- DCS connectivity and administration between the host switch and the remote switches is up and working. This administration is described in *DEFINITY ECS R7 Administration for Network Connectivity*, 555-233-501.
- The basic configuration shown in Chapter 3, ‘‘Administration for Switch-to-Lucent Intuity System Link’’ is up and working.
- The administration for all previous configurations have been done and is up and working.

Procedure Overview

The following procedures must be done on the “Remote - Node #6” switch:

- Assign the node/adjunct name for the Lucent INTUITY system.
- Administer a hunt group.
- Disable the link.
- Administer a processor channel for the link from the switch to the Lucent INTUITY system.
- Enable the link.
- Set up a coverage path for access to the voice port hunt group.
- Apply the coverage path to stations, and if the switch is an *r* model, specify the node name of the Lucent INTUITY system for each station that has a voice mailbox on the Lucent INTUITY system.

The following procedures must be done on the “Remote - Node #2” switch:

- Disable the link on the data module screen.
- Administer one gateway TCP processor channel to convert X.25 to TCP, and one gateway TCP processor channel to identify the TCP port used to communicate with the Lucent INTUITY system.
- Enable the link on the data module screen.

The following procedure must be done on the Lucent INTUITY system:

- Administer the switch interface to the “Remote - Node #6” switch.

"Remote - Node #6" Switch Procedures

Do the following procedures to administer the "Remote - Node #6" switch.

Assign Node/Adjunct Names

The Lucent INTUITY system must be administered with unique node/adjunct names and IP addresses (IP addresses are for R7 only). In addition, different models of DEFINITY switches can support different numbers of Lucent INTUITY systems.

- *csi* and *si* support one Lucent INTUITY system.
- *r* supports up to eight Lucent INTUITY systems.
  - — Identify the node names of each of the eight possible Lucent INTUITY systems.
  - — Select names that are unique for each system, for example **audix1** or **audix2**. Although you name the systems as AUDIX, the name works correctly with the Lucent INTUITY system. This node name is used when you administer the data modules, stations, and the processor channel.

Use the following procedure to define the node names:

1. Enter **change node-names** (R7) or **change adjunct-names** (pre-R7).

   The system displays the appropriate screen (Figure 5-43). This example shows an R7 screen. Note that since this is an X.25 connection, an IP address is not used.

```
change node-names                                Page   1 of   6   SPE B
                                NODE NAMES

      Audix Names    IP Address          MSA Names      IP Address
      audix1         ___.___.___.___     ________       ___.___.___.___
      ________       ___.___.___.___     ________       ___.___.___.___
      ________       ___.___.___.___     ________       ___.___.___.___
      ________       ___.___.___.___     ________       ___.___.___.___
      ________       ___.___.___.___     ________       ___.___.___.___
      ________       ___.___.___.___     ________       ___.___.___.___
      ________       ___.___.___.___     ________       ___.___.___.___
      ________       ___.___.___.___
```

Figure 5-43. Sample Node Names Screen, Page 1 (Remote - Node #6)

2. See Worksheet D in Chapter 2, "Switch Integration Planning", for the correct node name(s) and IP address(es) to use for the Lucent INTUITY system.
3. Press ENTER to save your changes.

4. Continue with the next procedure, "Assign a Hunt Group at the Remote Switch".

Assign a Hunt Group at the Remote Switch

This section contains procedures for administering a Hunt Group on a remote switch in a DCS network. No host switch administration is required.

1. Enter **add hunt-group** <***number***> at the remote switch administration terminal to assign a new hunt group.

   The system displays the Hunt Group screen (Figure 5-44).

```
add hunt-group 2                                  Page   1 of   3   SPE B
                                HUNT GROUP

           Group Number: 2                                    ACD? n
             Group Name: AUDIX                              Queue? n
      Group Extension: 72000                              Vector? n
             Group Type: ucd-mia                  Coverage Path: _____
                     TN: 1          Night Service Destination: _____
                    COR: 35                    MM Early Answer? n

          Security Code: _____
    ISDN Caller Display: _____
```

Figure 5-44. Sample Hunt Group Screen, Page 1 (Remote - Node #6)

2. Use Worksheet I in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 1 of the Hunt Group screen.
3. Press NEXTPAGE to move to Page 2 of the Hunt Group screen (Figure 5-45).

```
add hunt-group 2                                  Page   2 of  3   SPE B
                                HUNT GROUP

                          Message Center: rem-audix
                        AUDIX Extension: _____
              Message Center AUDIX Name: audix1
                                Primary? y
   Calling Party Number to INTUITY AUDIX? n
                           LWC Reception: none
                              AUDIX Name: audix1
                    Messaging Server Name: _____
           First Announcement Extension: _____ Delay (sec): __
          Second Announcement Extension: _____ Delay (sec): __ Recurring? _
```

Figure 5-45. Sample Hunt Group Screen, Page 2 (Remote - Node #6)

4. Use Worksheet I in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on Page 2 of the Hunt Group screen. Note that no administration is required on Page 3. The Lucent INTUITY system voice ports are only connected to the host switch.
5. Press ENTER to save your changes.
6. Continue with the next procedure, "Disable the Link".

Disable the Link

Before you administer a processor channel, you must disable the link for the processor channel between "Remote - Node #6" and the host switch. For an R7 switch, this will be on the X.25 data module screen. For a pre-R7 switch, this will be on the interface links screen.

1. Enter **display communication-interface links** to display a list of the interface links administered on the switch. Find the extension number for the data module used for the ethernet link.
2. On an R7 switch, enter **change data-module** *XXX*, where *XXX* is the X.25 data module extension. On a pre-R7 switch, enter change communication-interface links.

   The system displays the appropriate screen.
3. Change the `Enable Link` or `Enable` field to **n**.
4. Note which link is used for this connection. This link number will be used when assigning a processor channel.
5. Press ENTER to save your changes.
6. Continue with the next procedure, "Assign the Processor Channel".

Assign the Processor Channel

Assign a processor channel for the Lucent INTUITY system connection. Use a free processor channel for the connection. Note that the DCS processor channel shown here is for example only and would already be administered.

To assign the processor channel:

1. Enter **change communication-interface processor-channels**

   The system displays the Processor Channel Assignment screen (Figure 5-46). This example shows an R7 processor channel screen.

```
change communication-interface processor-channels     Page   1 of  XX   SPE B
                        PROCESSOR CHANNEL ASSIGNMENT
Proc                     Gtwy      Interface         Destination      Session   Mach
Chan Enable    Appl.      To   Mode Link/Chan         Node        Port  Local/Remote ID
  1:    y     dcs                    2   1                         0     1     1     1
  2:    y     audix                  2   2       audix1            0     6     1     1
  3:    n                                                          0
  4:    n                                                          0
  5:    n                                                          0
  6:    n                                                          0
  7:    n                                                          0
  8:    n                                                          0
  9:    n                                                          0
 10:    n                                                          0
 11:    n                                                          0
 12:    n                                                          0
 13:    n                                                          0
 14:    n                                                          0
 15:    n                                                          0
 16:    n                                                          0
```

Figure 5-46. Sample Processor Channel Assignment (Remote - Node #6)

2. Place information into the fields as defined in Worksheet C in Chapter 2, ''Switch Integration Planning''. Use the link number from the data module above. The DCS processor channel would already be assigned and is shown here for information only.
3. Press ENTER to save your changes.
4. Continue with the next procedure, ''Enable the Link''.

Enable the Link

After you have assigned the processor channel, you must go back and enable the link on the data module used for this link.

1. On an R7 switch, enter **change data-module** *XXX*, where *XXX* is the X.25 data module extension disabled earlier. On a pre-R7 switch, enter change communication-interface links.

   The system displays the appropriate screen.
2. Change the `Enable Link` or `Enable` field to **y**.
3. Press ENTER to save your changes.
4. Continue with the next procedure, ''Assign the Call Coverage Path''.

Assign the Call Coverage Path

Define a call coverage path for the subscribers with the remote hunt group as a coverage point. You may need to define several call coverage paths depending on how the customer wants to handle call coverage for different groups of subscribers. If the Lucent INTUITY system has been integrated with an existing switch, you may need to add the Lucent INTUITY hunt group as another coverage point for existing coverage paths.

Use the following procedure to define a call coverage path.

1. Enter **add coverage path** <***coverage path number***> at the command prompt. See Worksheet F in Chapter 2, "Switch Integration Planning" to find the call coverage path number.

   The system displays the Coverage Path screen (Figure 5-47).

```
add coverage path 1
                                COVERAGE PATH

                  Coverage Path Number: 1
                                                  Hunt after Coverage? n
                      Next Path Number: __        Linkage: _____________

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

COVERAGE POINTS

    Terminate to Coverage Pts. with Bridged Appearances? n

      Point1: h2___              Point2: _____              Point3: _____
      Point4: _____              Point5: _____              Point6: _____
```

Figure 5-47. Sample Coverage Path Screen (Remote - Node #6)

2. Use Worksheet F in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on the Coverage Path screen.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Modify the Station Screen for Each Subscriber".

Modify the Station Screen for Each Subscriber

After you administer the call coverage path, you must administer all subscriber stations to use the correct coverage path, and for stations on *r* systems, assign which Lucent INTUITY system is administered for that station's mailbox. Each subscriber station must contain the correct information for the Lucent INTUITY system to operate. Use the instructions in this section to administer the stations.

1. Enter **change station** *<test station extension>* at the `enter command` prompt.

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

   The system displays the Station screen (Figure 5-48).

```
change station 3066                                Page   1 of   4   SPE B
                                    STATION

Extension: 3066                        Lock Messages? n          BCC: 0
     Type: 6408D+                      Security Code:             TN: 1
     Port: 01a0811                   Coverage Path 1: 1           COR: 1
     Name: _____________________     Coverage Path 2: __          COS: 1
                                     Hunt-to Station: _____

STATION OPTIONS
             Data Module? n                Personalized Ringing Pattern: 1
          Speakerphone: 2-way                      Message Lamp Ext: 3066
       Display Language: english                 Mute Button Enabled? y


                                                MM Complex Data Ext: _____
```

Figure 5-48. Sample Station Screen, Page 1 (Remote - Node #6)

2. Enter the coverage path you created for the Lucent INTUITY system in the "Assign the Call Coverage Path" above. If you do not remember the coverage path number, see Worksheet F, in Chapter 2, "Switch Integration Planning".
3. Press NEXTPAGE to move to page 2.

   The system displays the Station screen (Figure 5-49).

```
change station 3066                                Page   2 of   4   SPE B
                                    STATION
FEATURE OPTIONS
           LWC Reception: AUDIX          Auto Select Any Idle Appearance? n
          LWC Activation? y                       Coverage Msg Retrieval? y
           CDR Privacy? n                                Auto Answer: none
   Redirect Notification? y                        Data Restriction? n
 Per Button Ring Control? n                 Idle Appearance Preference? n
   Bridged Call Alerting? n
  Active Station Ringing: single              Restrict Last Appearance? y

        H.320 Conversion? n
       Service Link Mode: _________ Per Station CPN - Send Calling Number? n
         Multimedia Mode: basic                 Multimedia Early Answer? n
                                                 Audible Message Waiting? n
                                               Display Client Redirection? n
              AUDIX Name: audix1           Select Last Used Appearance? n
   Messaging Server Name: ___________
```

Figure 5-49. Sample Station Screen, Page 2 (Remote - Node #6)

4. Enter **AUDIX** in the `LWC Reception`? field.
5. Enter **y** in the `LWC Activation` field if the subscriber is assigned the Leave Word Calling feature.
6. Enter **y** in the `Redirect Notification` field.
7. Enter **led**, **neon**, or **audible** in the `Message Waiting Indicator:` field if the voice terminal has a message waiting indicator (MWI) lamp. This instruction applies to 500, 2500, and 7104A telephones only.
8. On an *r* system, enter the node name of the Lucent INTUITY system that has the voice mailbox for this station in the `AUDIX Name` field.
9. Press ENTER to save your changes.
10. Repeat this procedure for all subscriber stations.

"Remote - Node #2" Switch Procedures

Do the following procedures to administer the "Remote - Node #2" switch.

Disable the Link on the Data Module Screen

Before you administer a processor channel, you must disable the link on the data module that is used for the ethernet link.

1. Enter **list communication-interface links** to display a list of the interface links administered on the switch. Find the extension number for the data module used for the ethernet link.

2. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension.

   The system displays the Data Module screen.

3. Change the `Enable Link` field to **n**.

4. Note which link is used for the data module. This link number will be used when assigning a processor channel.

5. Press ENTER to save your changes.

6. Continue with the next procedure, "Assign the Processor Channel".

Assign the Processor Channel

Administer two processor channels: one gateway TCP to convert X.25 to TCP, and one gateway to identify the TCP port used to communicate with the Lucent INTUITY system.

To assign the processor channels:

1. Enter **change communication-interface processor-channels**

   The system displays the Processor Channel Assignment screen (Figure 5-50).

```
channge communication-interface processor-channels      Page   1 of   XX    SPE  B
                        PROCESSOR CHANNEL ASSIGNMENT
Proc                 Gtwy       Interface          Destination        Session    Mach
Chan Enable    Appl.   To  Mode Link/Chan        Node         Port  Local/Remote ID
  1:    y     dcs              c     1   5003   switch1          0      1      1     1
  2:    y     audix            s     1   5002   audix1           0      2      1     1
  3:    y     gtwytcp   4      s     1   6061   switch1          0      6      1
  4:    y     gtwytcp   3            5   2                       0      1      6
  5:    y     gtwytcp   6      s     1   6006   audix1           0      6      1
  6:    y     gtwytcp   5            5   2                       0      1      6
  7:    n                                                        0
  8:    n                                                        0
  9:    n                                                        0
 10:    n                                                        0
 11:    n                                                        0
 12:    n                                                        0
 13:    n                                                        0
 14:    n                                                        0
 15:    n                                                        0
 16:    n                                                        0
```

Figure 5-50. Sample Processor Channel Assignment (Remote - Node #2)

2. Place information into the fields as defined in Worksheet K in Chapter 2, "Switch Integration Planning". Use the link number from the data module above. Note that processor channels 1-4 shown here are for example only and would already be administered.
3. Press ENTER to save your changes.
4. Continue with the next procedure, "Enable the Link on the Data Module Screen".

Enable the Link on the Data Module Screen

After you have assigned the processor channel, you must go back and enable the link on the data module used for this link.

1. Enter **change data-module** *XXX*, where *XXX* is the ethernet data module extension disabled earlier.

   The system displays the Data Module screen.
2. Change the `Enable Link` field to **y**.
3. Press ENTER to save your changes.

Lucent INTUITY System Administration

Do the following procedures to administer the Lucent INTUITY system.

Administer the Switch Interface

You must now administer the switch interface to include the “Remote - Node #6” switch. Do the following:

1. Starting at the Lucent INTUITY main menu, select:

```
> Switch Interface Administration
    > Call Data Interface Administration
        > Switch Link Administration
```

   The system responds with the Switch Interface Administration window (Figure 5-51).

```
+------------------------------------------------------------------------+
+                    Switch Interface Administration                     +
+------------------------------------------------------------------------+
| Switch Link Type: LAN                       Country: UNITED STATES     |
| Extension Length: 4                          Switch: DEFINITY OVERLAN  |
| Host Switch Number: 1                                                  |
| AUDIX Number: 1                                                        |
|                                                                        |
|Switch     IP Address/      TCP      Switch     IP Address/      TCP    |
|Number     Host Name        Port     Number     Host Name        Port   |
|   1      192.168.2.2       5002                                       |
|   2      192.168.2.10      5002                                       |
|   3      192.168.2.2       6003                                       |
|   4      192.168.2.2       6004                                       |
|   5      192.168.2.75      5002                                       |
|   6      192.168.2.10      6006                                       |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+
```

Figure 5-51. Sample Switch Interface Administration Window (Lucent INTUITY System)

2. Use Worksheet G, in Chapter 2, “Switch Integration Planning” to enter the correct values in this window. Note that for “Remote - Node #6,” you use the IP address of the “Remote - Node #2” switch and the TCP Port administered as the gateway for that switch.
3. Press F3 (Save).

Acceptance Test and Cut-to-Service Administration

6

Overview

To run acceptance tests and cut the Lucent INTUITY system into service, you must perform the following two tasks:

- Administer the coverage path
- Administer the subscriber stations

⚠ CAUTION:
Do not administer subscribers on the switch until the Lucent INTUITY system is installed and you are ready to provide messaging services to system users.

Purpose

This chapter explains how to administer the switch to perform acceptance tests for the Lucent INTUITY system and cut the system over to service.

Administration Procedures

Whether doing the acceptance tests or cutting to service, the same two procedures must be done:

- Administer the coverage path
- Administer the subscriber stations

For acceptance tests, you must:

- Administer two test stations.
- Assign Call Coverage paths to those stations.
- Run the acceptance tests as described in the installation book for the platform.
- Remove the test stations when testing is complete.

For cut-to-service, you must:

- Administer all of the subscriber stations on the switch.
- Assign Call Coverage paths to those stations.
- Do the cut-to-service procedures as described in the installation book for the platform. Cut-to-service procedures include:
  - — Setting up alarm origination
  - — Doing a backup
  - — Preparing the system for unattended backups.

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

Assign the Call Coverage Path

Define a call coverage path for the subscribers with the Lucent INTUITY hunt group as a coverage point. You may need to define several call coverage paths depending on how the customer wants to handle call coverage for different groups of subscribers. If the Lucent INTUITY system has been integrated with an existing switch, you may need to add the Lucent INTUITY hunt group as another coverage point for existing coverage paths.

Use the following procedure to define a call coverage path.

1. Log in to the switch by entering the craft or inads user id.
2. Enter your password.
3. Enter the correct terminal type. After you enter the terminal type, you see the command prompt.
4. Enter **add coverage path** <***coverage path number***> at the enter command prompt. See Worksheet F in Chapter 2, ‘‘Switch Integration Planning’’ to find the call coverage path number.

   The system displays the Coverage Path screen (Figure 6-1).

```
add coverage path 1
                                COVERAGE PATH

                  Coverage Path Number: 1
                                                Hunt after Coverage? n
                      Next Path Number: __      Linkage: _____________

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

COVERAGE POINTS

    Terminate to Coverage Pts. with Bridged Appearances? n

      Point1: h1___             Point2: ____              Point3: _____
      Point4: _____             Point5: _____             Point6: _____
```

Figure 6-1. Sample Coverage Path Screen

5. Use Worksheet F in Chapter 2, "Switch Integration Planning" to enter the correct values in the fields on the Coverage Path screen.
6. Press ENTER to save your changes.
7. Continue with "Modify the Station Screen for Each Subscriber".

Modify the Station Screen for Each Subscriber

After you administer the call coverage path, you must administer the subscriber stations (only two, if you are doing acceptance testing). Each subscriber station must contain the correct information for the Lucent INTUITY system to operate. Use the instructions in this section to administer the stations.

1. Enter **change station** <***test station extension***> at the `enter command` prompt.

   For information about adding test users, see the installation book for the platform.

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

The system displays the Station screen (Figure 6-2).

```
change station 3066                                Page   1 of   4   SPE B
                                    STATION

Extension: 3066                          Lock Messages? n          BCC: 0
     Type: 6408D+                          Security Code:           TN: 1
     Port:                               Coverage Path 1:           COR: 1
     Name:                               Coverage Path 2:           COS: 1
                                          Hunt-to Station:

STATION OPTIONS
             Data Module? n                 Personalized Ringing Pattern: 1
           Speakerphone: 2-way                        Message Lamp Ext: 3066
       Display Language: english                    Mute Button Enabled? y


                                                     MM Complex Data Ext:
```

Figure 6-2. Sample Station Screen, Page 1

2. Enter the coverage path you created for the Lucent INTUITY system in the "Assign the Call Coverage Path" above. If you do not remember the coverage path number, see Worksheet F, in Chapter 2, "Switch Integration Planning".
3. Press NEXTPAGE to move to Page 2.

   The system displays the Station screen (Figure 6-3).

```
change station 3066                                  Page   2 of   4   SPE B
                                    STATION
FEATURE OPTIONS
          LWC Reception: AUDIX           Auto Select Any Idle Appearance? n
          LWC Activation? y                        Coverage Msg Retrieval? y
            CDR Privacy? n                                Auto Answer: none
   Redirect Notification? y                            Data Restriction? n
 Per Button Ring Control? n                   Idle Appearance Preference? n
   Bridged Call Alerting? n
  Active Station Ringing: single                 Restrict Last Appearance? y

        H.320 Conversion? n
      Service Link Mode: as-needed  Per Station CPN - Send Calling Number?
        Multimedia Mode: basic                    Multimedia Early Answer? n
                                                  Audible Message Waiting? n
                                               Display Client Redirection? n
             AUDIX Name:                       Select Last Used Appearance? n
   Messaging Server Name:
```

Figure 6-3. Sample Station Screen, Page 2

4. Enter **AUDIX** in the `LWC Reception`? field.
5. Enter **y** in the `LWC Activation` field if the subscriber is assigned the Leave Word Calling feature.
6. Enter **y** in the `Redirect Notification` field.
7. Enter **led**, **neon**, or **audible** in the `Message Waiting Indicator:` field if the voice terminal has a message waiting indicator (MWI) lamp. This instruction applies to 500, 2500, and 7104A telephones only.
8. Press ENTER to save your changes.
9. Repeat this procedure for the two test stations or the subscriber stations.

Optional Switch Administration for Lucent INTUITY System Features

7

Overview

At this point in the installation, you have completed the switch administration procedures required to integrate the switch with the basic Lucent INTUITY system. If the Lucent INTUITY system includes optional features, you must now perform additional switch administration as outlined in this chapter.

Purpose

The purpose of this chapter is to provide the procedures you need to administer the switch to operate with the optional features of the Lucent INTUITY System such as Automated Attendant, and Night Service to Automated Attendant.

Automated Attendant Administration

Automated attendant is a Lucent INTUITY system feature that provides the caller with a menu of options. The caller then can request a department or extension by pressing a touch-tone key.

For each main attendant, assign a hunt group with a queue equal to the trunks that feed the attendant or assign a new hunt group that forwards calls to the Lucent INTUITY hunt group.

Assign a Station

You can assign a station on the switch for each main attendant. The station requires a physical port on the switch. A physical voice terminal is not required. However, if a voice terminal is not attached to the port, the switch generates a minor alarm. Use the following procedure to assign a station for a main attendant.

1. Assign a station for the type of available port. See the *DEFINITY ECS R7 Administrator's Guide*, 555-233-502, for information on assigning a station.
2. Assign the station extension as the incoming destination for the incoming call trunk groups that will be served by the automated attendant. If you are not using the automated attendant as an incoming destination for a trunk group, skip this step and continue with step 3, and confirm that the `Auth Code field` is set to **n**.
3. From the attendant console or administrative voice terminal, activate Call Forwarding All Calls for the automated attendant extension. Make the destination the Lucent INTUITY hunt group extension.

Assign a Hunt Group

Assign a new hunt group for the automated attendant if there is not a physical port available on the switch for a station. The hunt group forwards calls to the Lucent INTUITY hunt group. Use the following procedure to assign a hunt group for the automated attendant.

1. Enter **add hunt group** <***hunt group number***> on the switch administration terminal.
2. Set `Group Name:` to a name that contains the group extension. Use the group extension as all or part of the group name.
3. Set `Group Extension:` to the automated attendant extension.
4. Set `Group Type:` to **ucd**.
5. Leave the `Coverage Path` field blank. All calls are forwarded to the Lucent INTUITY hunt group extension.
6. Set the other fields according to the customer requirements.
7. Set `Queue?` to **y**.
8. Assign the numbers of all trunks to the hunt group.
9. Press ENTER.
10. Assign the automated attendant group extension as the incoming destination for incoming call trunk groups served by the automated attendant.

    If you are not using the automated attendant as an incoming destination for a trunk group, skip this step and continue with Step 10. Set `Auth Code` to **n**.

11. At the attendant console, activate Call Forwarding All Calls for the automated attendant. Set the destination as the Lucent INTUITY hunt group extension.

Night Service to Automated Attendant Administration

You can set up night service to an automated attendant from an incoming trunk or from a Listed Directory Number (LDN).

From an Incoming Trunk

Use the following procedure to set up night service to an automated attendant from an incoming trunk.

1. Assign the night automated attendant extension or hunt group number to the `Night Service` field on the trunk group form. The night automated attendant receives all incoming calls when you activate night service.
2. Activate Call Forwarding All Calls for the night automated attendant extension or hunt group number. Set the destination as the Lucent INTUITY hunt group extension.

While the console is in day service mode, calls route as usual according to the incoming destination on the trunk group form. When the console is placed in night service mode, calls route according to the night automated attendant destination identified in the `Night Service` field.

From a Listed Directory Number (LDN)

Use the following procedure to set up night service to an automated attendant from an LDN.

1. Assign one or more unique extensions on the Listed Directory Numbers (LDN) screen. These extensions cannot exist elsewhere in the switch. For example, assign 5000 as the LDN.
2. For each extension assigned in step 1, assign a name that includes the night automated attendant extension or hunt group number as part of the name. For example, if the night AA number or hunt group number is 5001, use the name night5001.
3. Assign the Lucent INTUITY system hunt group extension in the Night Destination field. From the examples above, this number would be 5001.

When you place the attendant console in day service mode, the LDN acts as usual. When you place the attendant console in night service mode, the system sends calls to the Lucent INTUITY hunt group extension. The Lucent INTUITY system

answers calls using the automated attendant that corresponds to the number in the `LDN Name` field.

Automated Attendant Substitute Strategies

A substitute for an automated attendant is needed so that calls do not go unanswered when the Lucent INTUITY system is busy or unavailable. Administer each Lucent INTUITY system individually. Consult the appropriate switch documents for details and interactions with other features.

For a System 75, DEFINITY G1, or DEFINITY G3 switch, you assigned either a station or a hunt group to access the automated attendant. If you assigned a station, you cannot use a substitute. If you used a hunt group and the Lucent INTUITY system is unavailable, use the attendant console to change the destination of Call Forwarding from the Lucent INTUITY system to a live attendant, for example, forward calls to LDN. When the Lucent INTUITY system becomes available, activate forwarding to the Lucent INTUITY system extension. Another option is to change the incoming destination to go to a recorded announcement while the automated attendant is out of service. See the "Switch Recorded Announcement" below for more information.

Transfer into Lucent INTUITY

This feature allows an attendant or other party to transfer a call sent to coverage back to the Lucent INTUITY system to record a message. If used in a DCS network, assign the same Transfer Into Lucent INTUITY feature access code at each node.

1. Enter feature access codes.
2. Assign a dial access code to the `Transfer Into AUDIX` field.
3. Assign the Lucent INTUITY system hunt group to the coverage path of any system user who wants the feature.

Switch Recorded Announcement

The following procedure is used to provide a recorded announcement at the switch for anyone who accesses the Lucent INTUITY system, either through a direct call or through call redirection. The announcement is heard when all the Lucent INTUITY system voice ports are busy and calls start entering the Lucent INTUITY system queue.

NOTE:
A TN750 Announcement circuit card must be installed in a vacant slot or a customer-provided system must be placed in a vacant analog port for this feature to work.

1. At the administration terminal, enter **change announcements**
2. On a vacant line, 1 to 64, set `Ext` to the extension number. The number must agree with the dial plan.
3. Set `Type` to one of the following values:
   - **Integrated** when using a TN750
   - **Analog** when using external equipment

   NOTE:
   If you set the `Type` field to analog, you must complete the `Queue Length` and `Port` fields. Queue Length applies only if you enter **y** in the `Queue` field.
4. Set `COR` from 0 to 63.
5. Set Name. (You can use up to 15 characters to describe the announcement message.)
6. Set `Queue` to **y**
7. Select one of the following options:
   - If the system uses a TN750 circuit card, enter **n** in the `Protect` field.
   - If the system uses customer-provided external equipment, enter a length of 1 to 150 in the `Queue Length` field.
8. Select one of the following options:
   - If you set the `Type` field to integrated, enter **16**, **32**, or **64** in the `Rate` field to specify the recording speed when recording announcements on the TN750 Integrated circuit card.
   - If you set the `Type` field to analog, enter the equipment location number in the `Port` field.
9. Press ENTER to save the information and return to the `enter command` prompt.
10. Enter **change hunt-group 59**
11. Enter the extension of the announcement system in the `First Ann. Extension` field.
12. Enter **5** in the `First Announcement Delay (sec)`field.
13. Press ENTER to save the information and return to the `enter command:` prompt.

14. Use one of the following options to record the announcement:
    - If you are using a TN750 circuit card, dial the announcement's extension number from the console or from a voice terminal with a console COS.
    - For a system using customer-provided external announcement equipment, use the instructions provided with the equipment to record the announcement.

Switch Multiple Coverage Paths

Multiple coverage paths provide greater flexibility for call-answer treatment. System 75, DEFINITY G1, and DEFINITY G3 switches the linking of multiple paths. On the Coverage Path screen, specify a second path in the `Next Path Number` field. You can link the second path to other paths. These paths display in the `Linkage` field. For more details, see *DEFINITY ECS R7 Administrator's Guide*, 555-233-502.

Security

A

Overview

No telecommunications system can be entirely free from risk of unauthorized use. However, diligent attention to system management and to security can reduce that risk considerable. Customers know best how to tailor the system to meet their unique needs and are therefore in the best position to protect the system from unauthorized use. Because the customer has the ultimate control over the configuration and use of the Lucent Technologies services and products it purchases, the customer properly bears responsibility for fraudulent uses of those services and products.

Lucent Technologies, however, is committed to help customers use and manage their system to ensure the greatest security possible.

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

Purpose

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

Protecting Your Messaging System

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

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

Voice Messaging

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

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

Automated Attendant

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

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

Switch Administration

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

Restrict Outward Dialing

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

For G1, G3, and System 75:

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

Assign Low Facilities Restriction Level (FRL)

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

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

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

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

FRLs can be assigned to offer a range of calling areas. Choose the one that provides the most restricted calling area that is required. Table A-1 provides suggested FRL values.

Table A-1. Suggested Values for FRLs

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

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

To set FRLs on G1, G3 and System 75:

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

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

Restrict Toll Areas

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

For G1 and System 75:

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

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

For G3:

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

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

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

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

Restrict AMIS Networking Number Ranges

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

Subscriber Password Guidelines

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

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

- Never program passwords onto auto dial buttons.
- If you receive any strange AUDIX messages, or your greeting has been changed, or if for any reason you suspect that your AUDIX facilities are being used by someone else, contact Lucent Network Corporate Security.

INTUITY AUDIX Administration

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

Mailbox Administration

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

Outcalling

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

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

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

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

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

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

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

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

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

3. The AUDIX system sends the digits to the switch.
4. The AUDIX system completes the transfer.

With Basic Call Transfer, a caller can dial any number, provided the number of digits matches the length of a valid extension. So, if an unauthorized caller dials an access code followed by the first digits of a long-distance telephone number, such as [9] [1] [8] [0] [9], the AUDIX system passes the numbers on to the switch. (This example shows a 5-digit plan.) The switch interprets the first digit ([9]) as an access code, and the following digits as the prefix digit and area code. The caller then enters the remaining digits of the phone number to complete the call.

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

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

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

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

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

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

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

Lucent INTUITY FAX Messaging

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

Detecting Voice Mail Fraud

Table A-1 shows the reports that help determine if your voice mail system is being used for fraudulent purposes.

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

* MERLIN LEGEND supports only these monitoring techniques

Call Detail Recording (or SMDR)

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

NOTE:
Lucent's optional Call Accounting System (CAS) may be installed on the Lucent INTUITY system, allowing you to create customized reports with your G1, G3, or MERLIN LEGEND CDR/SMDR data. The optional Lucent Hacker Tracker program works in conjunction with CAS Plus Version 3 to alert you to abnormal calling activities. Call 800 521-7872 for more information.

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

Review CDR for the following symptoms of voice messaging abuse:

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

- Numerous calls to the same number
- Undefined account codes

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

For G1, G3, and System 75:

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

Call Traffic Report

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

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

Trunk Group Report

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

SAT, Manager I, and G3-MT Reporting

Traffic reporting capabilities are built-in and are obtained through the System Administrator Tool (SAT), Manager I, and G3-MT terminals. These programs track and record the usage of hardware and software features. The measurements include peg counts (number of times ports are accessed) and call duration. Traffic measurements are maintained constantly and are available on demand. However, reports are not archived and should therefore be printed to monitor a history of traffic patterns.

For G1, G3, and System 75:

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

ARS Measurement Selection

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

For G1, G3, and System 75:

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

Automatic Circuit Assurance

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

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

For G1, G3, and System 75:

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

Busy Verification

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

For G1, G3, and System 75:

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

AUDIX Traffic Reports

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

Lucent's Statement of Direction

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

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

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

- Lucent products and services will offer the widest range of options available in the industry to help customers secure their communications systems in ways consistent with their telecommunications needs.
- Lucent is committed to develop and offer services that, for a fee, reduce or eliminate customer liability for PBX toll fraud, provided the customer implements prescribed security requirements in its telecommunications systems.
- Lucent's product and service literature, marketing information and contractual documents will address, wherever practical, the security features of our offerings and their limitations, and the responsibility our customers have for preventing fraudulent use of their Lucent products and services.

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

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

Lucent Security Offerings

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

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

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

Lucent Toll Fraud Crisis Intervention

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

DEFINITY/System 75/System 85 — Lucent BCS Technical Service Center (TSC)	800 242-2121
Lucent Corporate Network Security	800 821-8235
AUDIX Help Line	800 562-8349

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

Lucent Corporate Security

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

Alarm and Log Messages

B

Overview

This appendix contains the Administrators' Log and Alarm Log entries for the LAN link integration. Customers are responsible for repairing

- Conditions reported in the Administrator's Log
- Warning alarms reported in the Alarm Log

All other entries, major and minor alarms, require remote maintenance center intervention.

For additional information including how to display the logs, see Lucent *INTUITY Messaging Solutions Release 4.0 Alarm and Log Messages*, 585-310-566, Issue 2. For later releases, see the documentation provided with your system.

Purpose

This appendix provides a description of the Administrators' Log and Alarm Log messages. Each message entry includes a description and either a repair procedure, a notice that the alarm requires intervention, or a notice that the message is informational. Use this appendix if an alarm or an administrative message related to the LAN link switch integration appears on the Lucent INTUITY system.

Administrator's Log Entries: SW — Switch Integration

The following Administrator's Log messages and repair procedures apply to the switch integration portion of the Lucent INTUITY system:

Event ID: OVL100

Description: The system received an invalid switch number.

The link will not come up and the Lucent INTUITY system will not provide call coverage.

Repair Procedure:

1. Check the host DEFINITY setup.
2. Match the DEFINITY setup to the Lucent INTUITY system.

See Chapters 3, 4, and 5 in this book.

Event ID: OVL110

Description: The system received an incorrect AUDIX number from a switch. The message displays the AUDIX number received and the switch number.

The link will not come up and the Lucent INTUITY system will not provide call coverage.

Repair Procedure:

1. Check the host DEFINITY setup.
2. Match the DEFINITY setup to the Lucent INTUITY system.

See Chapters 3, 4, and 5 in this book.

Event ID: OVL120

Description: Host name resolution failure. This failure can occur if the Lucent INTUITY system is administered with host names instead of IP addresses and the DNS server has:

- An incorrect server hostname
- No entry for the switch hostname
- A down or inaccessible link

The link will not come up, and the Lucent INTUITY system will not provide call coverage.

Repair Procedure:

1. Log in to the Lucent INTUITY system as sa.
2. Select:

   > Switch Interface Administration
   > Call Data Interface Administration
   > Switch Link Administration

3. Verify the names of the machines in the IP Address/Host Name column. Check that the names are spelled correctly and apply to the correct systems.
4. Correct any information that is wrong.
5. Press F3 (Save).
6. If you used host names on the Switch Link Administration window, select:

   >TCP/IP Networking Administration

7. Verify the Local Domain Name.
8. Verify the DNS server identifies. They must be correct for the network, or the Lucent INTUITY system will not be able to establish an IP address for a host name listed on the Switch Link Administration window.
9. Correct any information that is wrong.
10. Press F3 (Save).

11. If all of the information appears to be correct on the Lucent INTUITY system, you may need to verify the administration on the LAN, the system, or the DNS server.
12. Check the host setup on the DEFINITY switch. See Chapters 3, 4, and 5 in this book.

SW – Switch Integration Alarms

The following alarms are associated with Lucent INTUITY system's LAN link switch integration software. These alarms indicate conditions that may cause the system to partially or fully fail to function.

OVERLAN Resource Type

Alarm Code: 1

Event ID: OVL010

Alarm Level: Major

Description: The host switch link has been out of operation for too long. When the link is not in operation, the Lucent INTUITY system will not provide call coverage.

The system will resolve this alarm when the link returns to operation.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 2

Event ID: OVL020

Alarm Level: Minor

Description: A remote switch link has been out of operation too long. When the link is not in operation, the Lucent INTUITY system will not provide call coverage for the remote subscribers.

This alarm will be resolved automatically when the link comes up.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 3

Event ID: OVL030

Alarm Level: Minor

Description: The host switch link has been in- and out-of-service too frequently. When the link is not in operation, the Lucent INTUITY system will not provide call coverage.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 4

Event ID: OVL040

Alarm Level: Minor

Description: A remote switch link has been in- and out-of-service too frequently. When the link is not in operation, the Lucent INTUITY system will not provide call coverage for remote subscribers.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 5

Event ID: OVL070

Alarm Level: Minor

Description: Host name resolution failed. The system cannot match a host name to an IP address. It cannot connect to the system with the host name.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 6

Event ID: OVL130

Alarm Level: Major

Description: The switch rejected the Lucent INTUITY system's session connection attempt. Because of this, the Lucent INTUITY system cannot communicate with the switch. Callers will need to enter an extension number to reach a mailbox. Also, they will not be able to transfer to other destinations.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 7

Event ID: OVL140

Alarm Level: Minor

Description: The switch failed to send an acknowledgment message to the Lucent INTUITY system's request for a session connection within the allowed period of time. Because of this, the Lucent INTUITY system cannot establish a link to the switch. If this condition persists, it will lead to a major alarm indicating that the link is not in operation.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 8

Event ID: OVL160

Alarm Level: Minor

Description: The Lucent INTUITY system sent data to the host switch and did not receive an acknowledgment message within the allowed period of time. This condition can be caused by network delays, a loss in LAN connectivity, or problems in the switch that caused it to fail to send the message.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 9

Event ID: OVL170

Alarm Level: Minor

Description: The switch failed to acknowledge the Lucent INTUITY system's keepalive message. A keepalive message is a message that the Lucent INTUITY system sends to the switch during idle periods or after a fixed interval to ensure that the connection is still good. If this condition persists, it will lead to a major alarm indicating that the link is down.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 10

Event ID: OVL180

Alarm Level: Major

Description: The software is experiencing internal errors.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 11

Event ID: OVL190

Alarm Level: Major

Description: The Lucent INTUITY system is unable to use some of its administered values. It cannot obtain the port numbers or IP addresses for the switch.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 12

Event ID: OVL200

Alarm Level: Minor

Description: The Lucent INTUITY system is unable to use some of its information about timeout periods and audits. The audits and the generation of alarms may be affected.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 13

Event ID: OVL210

Alarm Level: Minor

Description: The Lucent INTUITY system is unable to use some of its information about timeout periods and retry intervals. The system logs the error and then uses default values.

Repair Procedure:

This alarm requires remote maintenance center intervention.

Alarm Code: 14

Event ID: OVL240

Alarm Level: Major

Description: The switch is sending invalid options to the Lucent INTUITY system and the options may need to be adjusted on the switch side. The Lucent INTUITY system cannot establish communication with the switch. Since the link is not in operation, the system is non-integrated. Callers will need to enter an extension number to reach a mailbox. Also, they will not be able to transfer to other destinations.

Repair Procedure:

This alarm requires remote maintenance intervention.

Alarm Code: 15

Event ID: OVL310

Alarm Level: Warning

Description: The link to the switch is not operational because it was removed from operation.

Repair Procedure:

Release the switch integration link. See Chapter 2 in your maintenance book or your maintenance documentation for instructions.

LAN Link Troubleshooting Procedures

C

Overview

This appendix contains basic troubleshooting procedures for use if the LAN link does not start up or stops operating. The procedures in this chapter include:

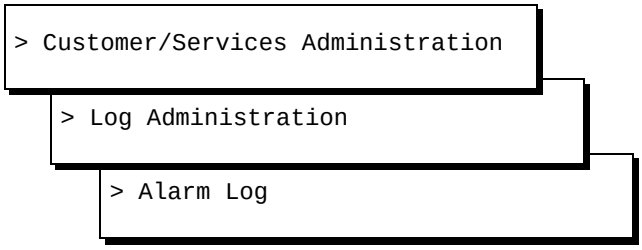
- Checking for LAN link alarms
- Diagnosing the LAN link
- Diagnosing the session layer.

For more information, see the LAN testing information in the installation book for the platform.

Checking for LAN Link Alarms

To check for LAN link alarms:

1. Start at the Lucent INTUITY main menu, select:



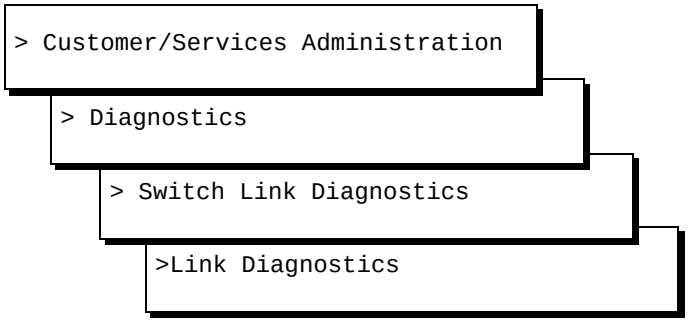
   The system responds by displaying the Alarm Log Display Selection window.

2. Determine your next step:
   - If the alarm is about the link or if the system does not have an alarm, continue with diagnosing the LAN link.
   - If the alarm reports a condition other than a link problem, contact technical support.

Diagnosing the LAN Link

To diagnose the LAN link:

1. Start at the Lucent INTUITY main menu and select:



   The system responds with the Link Diagnostics window.

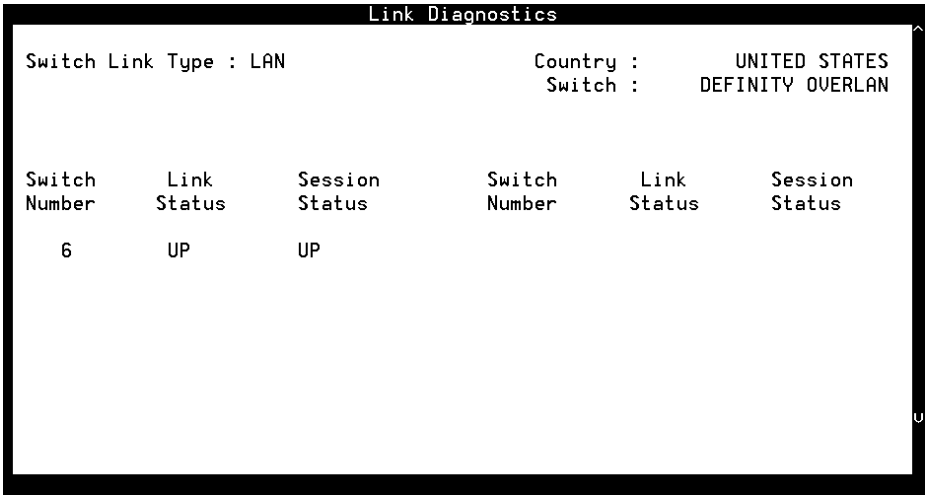


Figure C-1. Example Link Diagnostics Window

Interpreting LAN Link Status

The following table explains the fields in this window. When troubleshooting, make sure that the link is UP (Link Status field) and a session is UP (Session Status field). If the link or session is down, some troubleshooting measures are discussed in the sections that follow.

Table C-1. Link Diagnostics Fields

Field	Explanation
Switch Number	A unique identifier for each switch in a network.
Link Status	Displays the status of the physical connection between the switch and Lucent INTUITY system. If the link status displays UP, it means that the connection is complete, and a session can be started.
Session Status	Indicates whether the application is communicating with the switch. If the session status displays UP, it means that data messages are being exchanged between the Lucent INTUITY system and the switch.

NOTE:
Session Status can by UP only if the Link Status is UP. In other words, the physical connection must be working for the application to work.

Link Status DOWN

The LAN link could be down due to the following reasons:

- Bad cables. Try different cables to see if the physical connection comes up.
- Faulty ethernet card. Check with your LAN or hardware administrator.
- The specified TCP/IP address or the port number may be wrong. Check with your LAN or system administrator for the correct TCP/IP address or port number.
- Switch may not be up. Check whether the switch is running on that specified port.

NOTE:
If there are packet errors that last 16 minutes, the system will reinitialize. In some cases, the reinitialization will cause the link to come up.

Link Status UP, Session Status DOWN

The Session Status could be down due to the following reasons:

- Voice system not running. Make sure that the voice system is running on the Lucent INTUITY system.
- Errors in administration. Check the link administration on both the switch and the Lucent INTUITY system. If the administration appears correct, escalate to technical support.
- The Session Connect Message (SCM) packet is not properly formatted. In such a case, the switch generates a session reject message (SRM), and a major alarm is raised. This happens very rarely. Check with technical support for further assistance.
- When a system acceptance message (SAM) is not received with a specified period after an SCM is sent, the session may not come up. In such a case, the system will automatically keep on trying to set up a new session.
- If the session is up and Data Acknowledgment and Keep Alive Acknowledgment timers are timed out, the session will go down after waiting for a specified period for data from the switch. If there's no data from the switch, the system will bring down the LAN link and then reset the link. If this continues to happen, escalate to technical support.

Diagnosing the Session Layer

The Session Layer Diagnostics screen provides information on the status of the session.

1. Start at the Lucent INTUITY main menu and select:

```
> Customer/Services Administration
    > Diagnostics
        > Switch Link Diagnostics
            >Session Layer Diagnostics
```

   The system responds with the Session Layer Diagnostics window (Figure C-2).

```
                        Session Layer Diagnostics

Switch Link Type : LAN                          Country :       UNITED STATES
                                                 Switch :    DEFINITY OVERLAN


Switch  Session  Transmit  Receive     Switch  Session  Transmit  Receive
Number  State    Sequence  Sequence    Number  State    Sequence  Sequence
                 Number    Number                       Number    Number

   6     DATA     203       133
```

Figure C-2. Example Session Layer Diagnostics Window

Interpreting Session Layer Diagnostics Information

The following table explains the fields in this window.

Table C-2. Session Layer Diagnostics Fields

Field	Values	Explanation
Switch Number	1-64	A unique identifier for each switch in a network.
Session State	IDLE	Trying to establish the TCP/IP link. Press Refresh (F5) to see if it changes to the DATA state. If the IDLE state continues, reboot the Lucent INTUITY system. If the reboot does not fix the problem, escalate to technical support.
	WSA	Waiting for a Session Acceptance (WSA) message. This means that the TCP/IP link is up and an SCM (Session Connect Message) has been sent. Check the link administration on the switch and the Lucent INTUITY system. If the administration is correct, escalate to technical support.
	DATA	Link is up. The link is ready to send and receive messages.
Transmit Sequence Message (TSM) Number and Receive Sequence Message (RSM) Number	0 to 255 and then restarts at 0	The Lucent INTUITY system appends a sequence number to data messages before they are transmitted. The TSM field shows the TSM number being transmitted. The number has no significance. Similarly, the switch appends a sequence number to data messages before they are sent. The RSM field shows the RSM number being received. The number has no significance. The important thing to watch is if the numbers are incrementing. Use Refresh (F5) to update the display. The more traffic on the system, the more often the numbers will increment. If the numbers are not incrementing, place a test call. The numbers should increment for the test call. If the numbers still don't increment, escalate to technical support.

Converting to a LAN Link Integration

D

Overview

To convert to a LAN link integration from another type of switch integration, use the procedures listed in this appendix in the order that they occur.

NOTE:
Do not use the information in this chapter to reload a system. See the maintenance book or information for the multi-application platform (MAP) for reloading instructions.

CAUTION:
Failure to follow the procedures in the exact order can result in system failure or increased system downtime.

Purpose

This appendix provides the information needed to change an existing switch integration to a LAN link integration.

Prerequisites

Before beginning the conversion, check for the following:

- The switch must be updated to the R7 software load. Depending on the switch model, refer to one of the following documents:
  - *DEFINITY ECS Release 7 Installation, Upgrades and Additions for Compact Modular Cabinets*, 555-230-128
  - *DEFINITY ECS Release 7 Upgrades and Additions for R7si*, 555-233-105
  - *DEFINITY ECS Release 7 Upgrades and Additions for R7r*, 555-230-121
- A C-LAN circuit pack (TN799) must be installed in an available port slot in the DEFINITY ECS.
- The Lucent INTUITY system must be at or upgraded to Release 4.4.

Materials Needed

You will need:

- Hardware:
  - LAN circuit card, if not already installed in the Lucent INTUITY system (model 8416)
  - D8W or Category 3 RJ45 modular cables to connect the switch to the Lucent INTUITY system
  - Crossover cable (comcode 846943306), or depending on the customer's configuration, a LAN hub or router
- Software: LAN link integration software tape, J1P321TE-1, L-73, *AUDIX® R4.3/R4.4 C-Lan Switch Integration*, 1 tape
- Documentation:
  - The installation book or information for the MAP
  - If you will be installing a new LAN circuit card, the maintenance book or information for the MAP
  - Switch integration planning worksheets. These worksheets, located in Chapter 2, "Switch Integration Planning", must be completed before integrating the Lucent INTUITY system with a LAN link.

CAUTION:
Without the completed worksheets, you will not be able to complete this installation.

Conversion checklist

Table D - 1 lists the procedures needed for the conversion.

Table D - 1. Checklist for Converting to a LAN Link Integration

Task	Description	On	✔
1.	Identify the System's Software Load	page D-4	
2.	Check the Lucent INTUITY System for a LAN Circuit Card	page D-4	
3.	Stop Alarm Origination	page D-5	
4.	Stop the Voice System	page D-7	
5.	Backup the Lucent INTUITY System	page D-8	
6.	Remove the Old Link Software	page D-10	
7.	Install the LANset Software	page D-12	
8.	Install INTUNIX + M or Later	page D-13	
9.	Administer the LAN Link	page D-15	
10.	Remove the Old DCIU Switch Hardware	page D-16	
11.	Remove Old DCIU or GP-Synch Circuit Card and Install a LAN Circuit Card	page D-16	
12.	Connect the LAN Circuit Card to the Switch C-LAN Circuit Pack	page D-19	
13.	Test the LAN Link	page D-21	
14.	Activate Alarm Origination	page D-22	
15.	Create a Test Alarm	page D-24	
16.	Backup the Lucent INTUITY System	page D-25	
17.	Replace the Nightly Backup Tape	page D-28	
18.	Remove the Old Integration Software Tapes	page D-28	

Task 1 - Identify the System's Software Load

1. Log in to the Lucent INTUITY system as craft.
2. Press ENTER to use the at386 terminal type default.
3. Starting at the Lucent INTUITY main menu, select:

```
> Customer/Services Administration
    > System Verification
        > View Installed Software
```

   After a few minutes, the system responds with the View Installed Software screen.

4. Scrolling down the screen using the arrow keys, look for the VM-sw package. The system version is located in the VERSION field.
5. Determine your next step:
   - If the system is a Release 4.4, continue with step 6.
   - If the system is not a Release 4.4, DO NOT continue with these procedures. Update the system to Release 4.4 and then return to these procedures.
6. Press F6 (Cancel) once to return to the System Verification menu.
7. Continue with Task 2, "Check the Lucent INTUITY System for a LAN Circuit Card".

Task 2 - Check the Lucent INTUITY System for a LAN Circuit Card

1. Starting at the System Verification menu, select:

```
> View Installed Hardware
```

1. The system responds with the View Installed Hardware screen (Figure D-2).

NOTE:
It can take several minutes for this screen to appear. While the system is collecting the data, the word “working” appears in the upper right-hand corner of the screen and flashes.

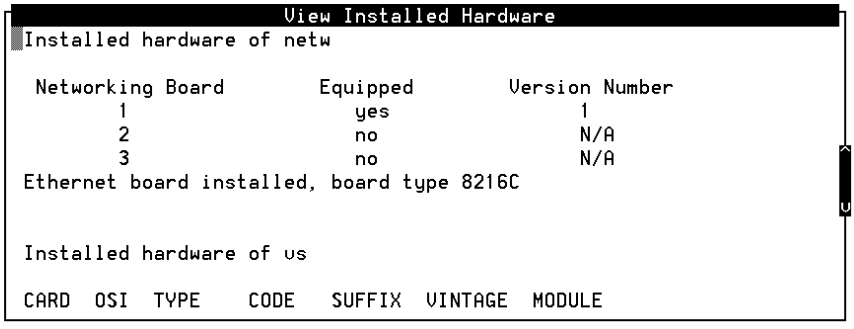


Figure D-2. Example Installed Hardware Screen

2. Look for a LAN circuit card. Use the arrow keys.

   If the system has a LAN circuit card installed, the window will display information similar to the following:

   ```
   Ethernet board installed, board type XXXX
   ```

   The board type can be either 8416C or 8216C. If the system does not have a LAN circuit card installed, the window will not display any information related to the LAN circuit card. A task given later in this procedure will tell you when to install the card.

3. Press F6 (Cancel) repeatedly to return to the Lucent INTUITY Main menu.
4. Continue with Task 3, "Stop Alarm Origination".

Task 3 - Stop Alarm Origination

This procedure inactivates alarm origination so that the Lucent INTUITY system will not inform the remote maintenance center of any alarms that occur during the conversion process.

1. Beginning at the Lucent INTUITY Main menu, select:

   ```
   > Customer/Services Administration
   ```

   ```
   > Alarm Management
   ```

The system responds with the Alarm Management screen (Figure D-3).

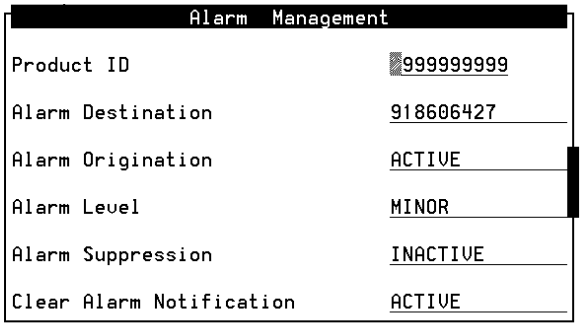


Figure D-3. Alarm Management Screen

2. Move the cursor to the `Alarm Origination` field.
3. Press F2 (Choices).

   The system responds with the Alarm Origination screen (Figure D-4).

Figure D-4. Alarm Origination Menu

4. Select `INACTIVE`.

   The system responds by changing the entry in the Alarm Origination field to `INACTIVE`.
5. Press F3 (Save).

   The system responds with an Information screen (Figure D-5).

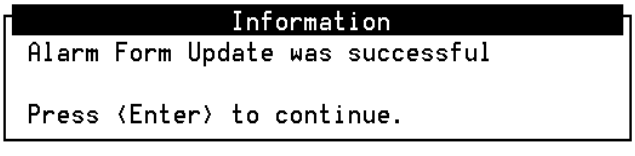


Figure D-5. Information Screen

6. Press ENTER.

The system returns to the Alarm Origination screen.

7. Press F6 (Cancel) repeatedly to return to the Lucent INTUITY Main menu.
8. Continue with Task 4, "Stop the Voice System".

Task 4 - Stop the Voice System

The following procedure describes how to stop the Lucent INTUITY voice system so that you can install the INTUNIX and the new DCIU software.

1. Starting at the Customer/Services Administration menu, select:

```
> Customer/Services Administration
    > System Control
        > Stop Voice System
```

The system displays the Wait Time window (Figure D-6).

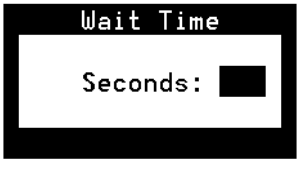


Figure D-6. Wait Time Window

2. Enter **0** (zero) to stop the voice system immediately.
3. Press F3 (Save).

   The system stops the voice system and returns to the System Control screen or by presents the prompt:

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

   If the system presents this prompt, press ENTER to return to the System Control screen.

4. Press F6 (Cancel) repeatedly to return to the Lucent INTUITY Main menu.
5. Continue with Task 5, "Backup the Lucent INTUITY System".

Task 5 - Backup the Lucent INTUITY System

A backup is the only way to ensure the system can recover in the event of an unforeseen catastrophic failure, such as equipment or power failure, or problems with the conversion.

NOTE:
Do a backup now, even if you just did a backup as part an upgrade to Release 4.4.

To perform a full system backup:

1. From the Lucent INTUITY main menu, select:

   ```
   > Customer/Services Administration
       > Backup/Restore
           > Backup
   ```

   The system displays the Backup window (Figure D-7).

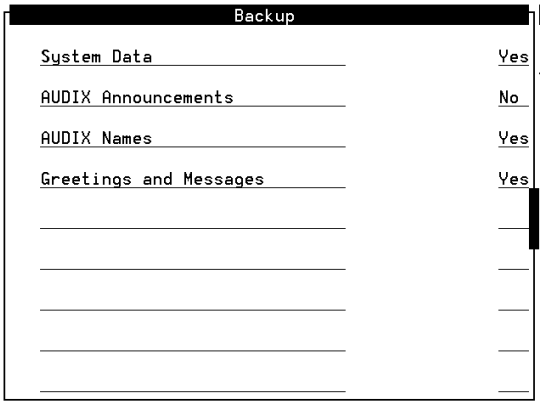


Figure D-7. Sample Backup Window

NOTE:
The screen displays fields based on the system's configuration and may differ from this illustration.

2. Enter **Yes** in all fields to back up all data.

3. Press F3 (Save).

   The system displays the message:

   ```
   backup started
   calculating approximate number of tape(s) required
   please wait

   the backup will need approximately:
   x yyy MB cartridge tape(s)
   ```

   Where *x* is the number of blank tapes you will need and *yyy* is the tape capacity (for example 525 Mb).

4. Make sure that there are enough cartridge tapes to accommodate the backup.

   The system displays the message:

   ```
   Verify whole backup tape(s) will double the amount
   of backup time.
   Do you really want to verify tape(s)?
   (Strike y or n)
   ```

   NOTE:
   Verification is not necessary to ensure a good backup tape. The Lucent INTUITY system verifies a backup tape by reading back the entire set of data just written onto the tape, which doubles the total time required.

5. Press **n** to not verify the backup.

   The system displays the following message:

   ```
   please insert a tape into the tape drive to back up
   tape 1
   press <Enter> when tape is inserted
   press <Esc> key to terminate the backup
   ```

6. Press the button on the upper right corner of the drive to open the drive door.
7. Insert an initialized blank tape.
8. Close the door to push in the tape.
9. Press ENTER when the tape drive is idle.

   NOTE:
   If you pressed ENTER before you inserted the tape into the drive, you must press ENTER again after the tape is in the drive.

   The system displays a series of messages indicating what is stored on the backup tape.

10. To load another tape (if the backup is complete, go to step 11):

a. Press the button on the upper right corner of the drive to open the drive door.

b. Remove the current tape.

c. Label the tape with the current date and backup data type(s).

d. Insert the next tape.

e. Press ENTER when the tape drive is idle.

When the backup is complete, the system displays the following message:

```
backup process has been completed successfully
press any key to continue
```

11. Press ENTER.
12. Label all backup tapes with the current date and backup data type(s).
13. Press F6 (Cancel) repeatedly to return to the Lucent INTUITY Main menu.
14. Continue with Task 6, "Remove the Old Link Software".

Task 6 - Remove the Old Link Software

This section assumes that the DEFINITY switch is already Release 7.1 or later. If it is not, upgrade the switch first and then return to these procedures.

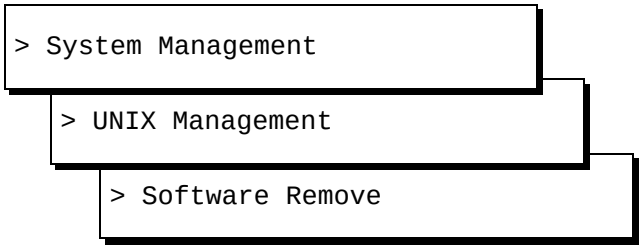
Remove the DCIU or Mode Code Software on the INTUITY System

1. Starting at the Lucent INTUITY system main menu, select:

```
> Customer/Services Administration
    > Feature Options
```

2. Check whether the DCS option is enabled for this system. If it is, the feature must be re-enabled after you install the new software.
3. Press F6 (Cancel) once to return to the Customer/Services Administration menu.

4. Starting at the Customer/Services Administration menu, select:



5. In the list of available packages, look for either `DCIUset` (DCIU integration) or `SWINset` (mode code integration). Press ENTER as needed to page through the list of software packages.
6. When you find the package number associated with either `DCIUset` or `SWINset`, press CTRL-D to stop the display of packages.

CAUTION:
Do NOT remove any packages except for DCIUset or SWINset.

7. At the prompt, enter the number of the package being removed.

   The selected package is removed. The files being removed display on the screen. Answer y to any questions that display during the procedure.
8. When the “Select packages” prompt returns, press q to exit the Software Remove procedure.
9. Press F6 (Cancel) once to return to the UNIX Management menu.
10. Continue with the tasks in this section.

Remove the DCIU or Mode Code Translations on the DEFINITY Switch

NOTE:
Record all existing link administration in case you must revert to the old setup.

1. If using DCIU integration:
   a. Remove the existing X.25 data module assignment from the switch.
   b. Remove the X.25 processor channels from the switch.
2. If using Mode Code integration, disable Mode Code on the change system-parameters customer-options screen.
3. Continue with Task 7, "Install the LANset Software".

Task 7 - Install the LANset Software

If the Lucent INTUITY system is already a Release 4.4, you will only need to install the switch integration software through the software install program. If the system is not Release 4.4, use the Release 4.4 upgrade instructions to update the system.

To install the new switch integration software:

1. Verify that a full system backup tape is available.

   This should be a current backup. In the event of a system or update failure, the backup tape is used to restore the system.

   CAUTION:
   Do not change software on the system unless you have a current backup of the original configuration.

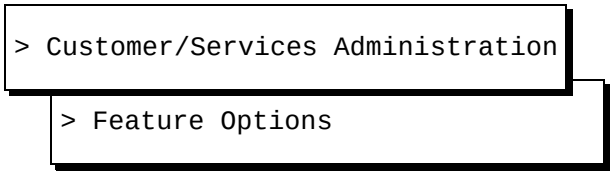
2. Starting at the UNIX Management menu, select:

   ```
   > Software Install
       > Tape Drive
   ```

3. Press the button on the upper right corner of the drive to open the drive door.
4. Insert the LAN link integration software tape cartridge into the drive.
5. Close the drive door to push in the tape.
6. Press ENTER when the tape drive is idle.
7. The system displays the package on this tape, which is the `LANset` (LAN integration) software package.
8. At the prompt, Press ENTER.

   The `LANset` package is installed. The files being installed display on the screen.
9. When the “Select packages” prompt returns, press q to exit the Software Install procedure.
10. Press F6 (Cancel) repeatedly to return to the Lucent INTUITY Main menu.
11. Press the button on the upper right corner of the drive to open the drive door.
12. Remove the LAN link integration software tape cartridge.
13. Close the drive door.

14. If the DCS feature was enabled before you installed the new software, you must verify that it is still enabled. Starting at the Lucent INTUITY system main menu, select:



15. Check whether the DCS option is enabled for this system. If it is, continue with step 16. If DCS should be enabled but it is not, the feature must be re-enabled. Call the Multimedia Implementation Service Center (MMISC, formerly the AUCC) at 1-800-562-8349 to have the DCS feature enabled.
16. Press F6 (Cancel) once to return to the Customer/Services Administration menu.
17. Continue with Task 8, "Install INTUNIX + M or Later".

Task 8 - Install INTUNIX + M or Later

To install the INTUNIX update:

1. Insert the Lucent INTUITY INTUNIX +M (or later) Sftw Update tape into the tape drive.
2. Press ENTER.

   The system displays the message:

```
Installation in progress. Do not remove tape.

     The following pkgs are available:
       1  INTUNIX INTUITY UnixWare x.x.x Enhancement
          Set - Update X

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

3. Press ENTER.

   The system displays the software packages and the message:

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

4. Press ENTER to select **all**.

   The system displays the message:

   ```
   A version of the LAN driver is already installed.
   Do you want to overlay that driver and re-use the
   kernel options for the driver? The overlay option,
   which is often used during field upgrades, will
   preserve the network environment.

    y) to overlay
    q) to quit    (default: quit)

   Do you want to overlay the driver?
   ```

5. Enter **y**

   The system displays the message:

   The system displays the board type of the LAN adapter installed on the platform. Use this information to select the LAN adaptor type. If you are going to install a LAN card, enter the type that will be installed.

   ```
   The board type currently installed in the system
   is the XXXX LAN adapter.

     1) 8216 LAN adapter.

     2) 8416 LAN adapter.

     q) To abort installation.

   Please enter the board type you wish to use:
   ```

   where XXXX is the board type for the system you're upgrading.

6. Note the board type in the first line of the system message and enter **1** or **2**, as appropriate.

   NOTE:
   If no LAN card is installed, enter **2** or the type of LAN card that you will be installing.

   CAUTION:
   The board type numbers are very similar. Read the system message carefully before selecting the board type.

   The system processes the packages on the tape and displays several status messages. When the processing is completed, the system displays the following message:

   ```
   Installation of INTUITY UnixWare x.x.x Enhancement
   Set (INTUNIX) was successful.

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

7. Enter **q**

8. Remove the tape from the tape drive.

9. Press CANCEL (F6) four times to return to the main menu.
10. Continue with Task 9, "Administer the LAN Link".

Task 9 - Administer the LAN Link

To administer the LAN link:

1. Set up the DEFINITY ECS. Using the worksheets in Chapter 2, ‘‘Switch Integration Planning’’, do the procedures in Chapter 3, ‘‘Administration for Switch-to-Lucent Intuity System Link’’. When doing these procedures, give special attention to the following:
   - Confirm that the Lucent INTUITY voice port stations have been optioned as specified in Worksheet A in Chapter 2, ‘‘Switch Integration Planning’’. This includes verifying that the Lucent INTUITY system voice ports are set to 2500-type telephones.
   - On Page 2 of the voice ports hunt group form, set the `Message Center` field to audix, the `LWC Reception` field to none, and the `Message Center Audix Name` to the node name of the Lucent INTUITY system.
   - For every station user on the DEFINITY ECS, make sure that the `LWC Reception` field is set to audix.
2. If the Lucent INTUITY system will be on a DCS network, using the worksheets in Chapter 2, ‘‘Switch Integration Planning’’, do the procedures in Chapter 5, ‘‘DCS Administration’’.
3. Make sure the following are set up on the Lucent INTUITY system as described in the platform installation books:
   - Check the TCP/IP Administration screen.
   - Configure the Ethernet LAN circuit card for 10BASE-T operation.
4. Administer the Lucent INTUITY system for switch integration. Do the procedures in Chapter 4, ‘‘Lucent INTUITY System Administration for Switch Integration’’. Do not do any testing until after the physical link is connected.
5. Verify the channel mapping and services assignments. Change the mapping and services assignments, if necessary. Use the instructions from the installation manual or the installation information provided with the system.
6. Continue with Task 10, "Remove the Old DCIU Switch Hardware".

Task 10 - Remove the Old DCIU Switch Hardware

CAUTION:
Do not remove the cabling that connects the Lucent INTUITY system and the DEFINITY ECS voice ports.

1. Disconnect the cabling from the processor interface (PI) port or packet gateway port (PGATE) used for DCIU connectivity on the switch.
2. If a data module or modem was used for the connection, disconnect that equipment from service.
3. Remove old circuit packs from the switch (only for si and r models):
   a. Power down the switch.
   b. For an si model, remove the TN765 processor interface (PI) circuit pack unless it is being used for X.25 connections.
   c. For an r model, remove the TN577 packet gateway (PGATE) circuit pack unless it is being used for X.25 connections.
4. Continue with Task 11, "Remove Old DCIU or GP-Synch Circuit Card and Install a LAN Circuit Card".

Task 11 - Remove Old DCIU or GP-Synch Circuit Card and Install a LAN Circuit Card

If the system does not have a LAN circuit card, install a new LAN circuit card. If you do not have a DCIU card to remove, or if the system already has a LAN circuit card, continue with Task 12, "Connect the LAN Circuit Card to the Switch C-LAN Circuit Pack".

NOTE:
If the system previously operated with mode code integration, the system will not have a DCIU or GP Synch circuit card.

1. Shut down the system:

   a. Start at the Lucent INTUITY main menu and select:

```
> Customer/Services Administration
    > System Management
        > System Control
            >Shutdown System
```

   The system displays the Wait Time window (Figure D-8).

Figure D-8. Wait Time Window

   b. Enter **0** (zero) for an immediate shutdown.

   c. Press F3 (Save).

      The system displays the following message:

```
Voice system is already stopped.
Shutdown started.
```

      When the system is completely shut down, the system displays the following message.

```
The system is down.
Press Ctrl-Alt-Del to reboot your computer.
```

2. Turn off the power, but do not disconnect the power cord.
3. Attach an ESD wrist strap.
4. Remove the MAP covers. For instructions, see the installation book for the platform.
5. If present, remove the old DCIU or GP-Synch circuit card. These cards may be located in any slot.

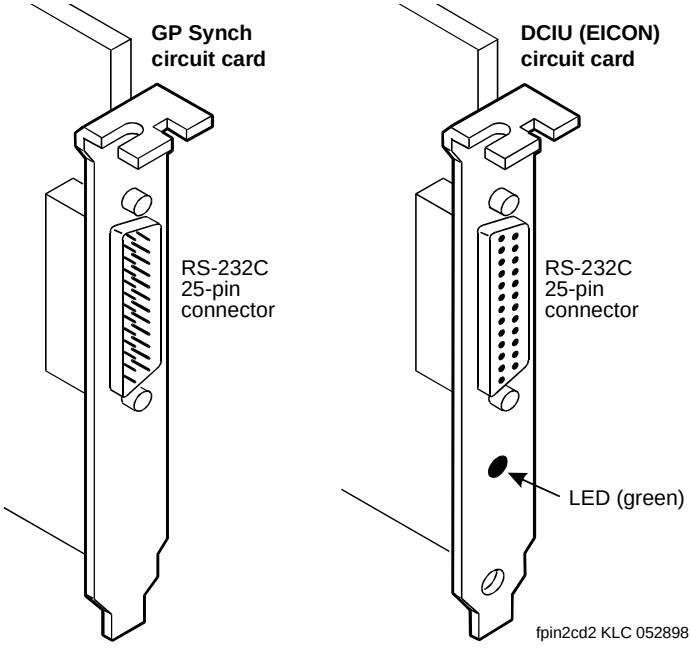


Figure D-9. GP Synch and DCIU Faceplates

6. Install the new LAN circuit card. If you removed a DCIU or GP-Synch card, put the LAN card where the old card was installed.

   For instructions, see the maintenance book for the platform.

7. Apply power to the system. Allow it to fully boot. During reboot, there will be a message indicating that the new LAN circuit card was recognized.
8. Log in to the Lucent INTUITY system as craft.
9. Press ENTER to use the at386 terminal type default.
10. Continue with Task 12, "Connect the LAN Circuit Card to the Switch C-LAN Circuit Pack".

Task 12 - Connect the LAN Circuit Card to the Switch C-LAN Circuit Pack

Use the following information to connect the C-LAN circuit pack on the switch to the LAN circuit card on the Lucent INTUITY system.

Parts List

- An ethernet port on the C-LAN circuit pack (TN799)
- One 259A adapter (comcode 102631413), or

  Standard cross-connect hardware and a 103A connecting block (comcode 105164818)
- One 6-inch RJ45 crossover cable (comcode 846943306), or

  One 10Base-T LAN hub or customer router (optional)
- One or two D8W modular cords or equivalent (UTP Category 3 or better)
- One LAN card on the MAP (model 8412 or 8416).

Distance Limits

Using the standard crossover cable (or alternate crossover wiring arrangement in Figure D-12), the distance limit between the switch and the MAP is 328 feet (100 meters).

Using a hub or customer router, the distance limit between the switch and the MAP is 656 feet (200 meters) total (328 feet [100 meters] from the switch to the hub or router, and 328 feet [100 meters] from the hub or router to the MAP).

Cabling Diagram

There are two ways to cable the connection between the Lucent INTUITY system and the switch. Figure D-10 shows a detailed connection between the C-LAN circuit pack and the LAN card on the MAP when using the crossover cable. Figure D-11 shows a detailed connection between the C-LAN circuit pack and the LAN card on the MAP when using a 10BASE-T hub or router.

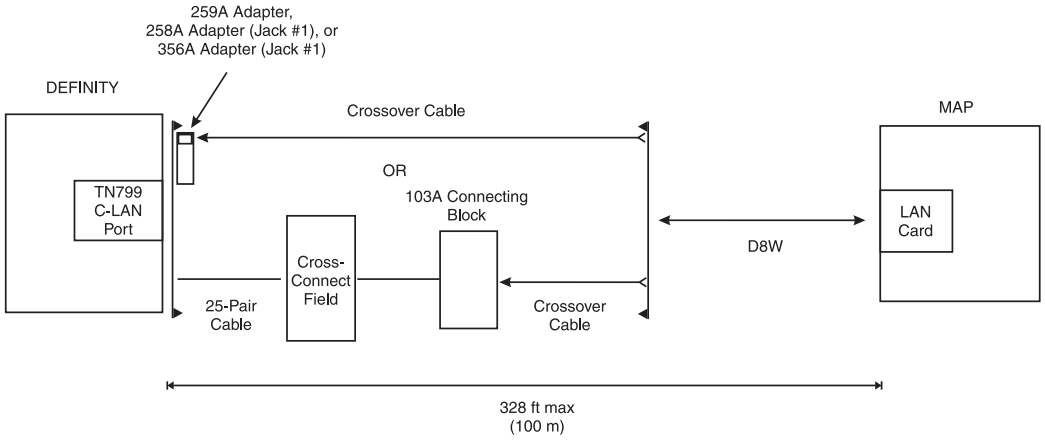


Figure D-10. Cabling Arrangement Using Crossover Cable

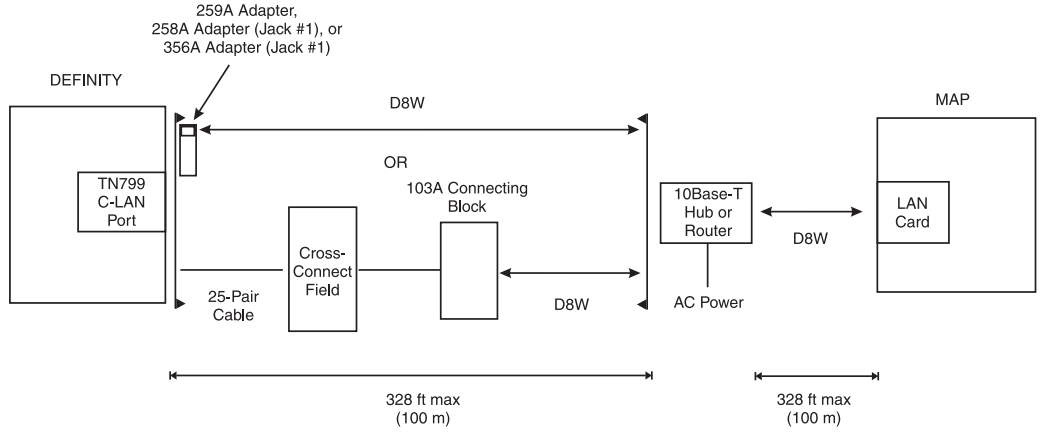


Figure D-11. Cabling Arrangement Using Hub or Router

The TN799 C-LAN circuit pack ethernet lead designations are as follows:

Lead Name	25-Pair Cable Wire Color	25-Pair Cable Connector Pin-out	RJ45 Jack Pin-out	Terminal Block Pin-out on Connecting Block
TD+	white/orange	27	1	3
TD-	orange/white	2	2	4
RD+	white/green	28	3	5
RD-	green/white	3	6	6

Use this information when making connections from the TN799 using a 259A adapter (single-port), a 258A adapter (6-port harmonica), a 356A adapter (8-port harmonica), or standard cross-connect wiring. When using the 258A or 356A adapters, you must always connect to jack #1 of the adapter.

Alternate Crossover Wiring

If the standard crossover cable or the optional hub/router is not available, you can use a crossover wiring arrangement to flip the transmit and receive leads 3/5 and 4/6 for the LAN connection. Figure D-12 shows how this can be done with a 104A connecting block (comcode 105164859). When using this device, the distance limit from the switch to the Lucent INTUITY system is 328 feet (100 meters). Using this device, you would connect one D8W modular cord to the switch C-LAN circuit pack, and another D8W modular cord to the Lucent INTUITY system LAN card.

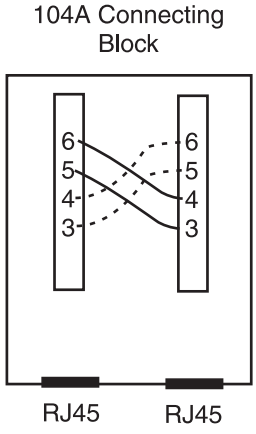


Figure D-12. Alternate Crossover Wiring

When finished, continue with Task 13, "Test the LAN Link".

Task 13 - Test the LAN Link

To test the LAN link:

1. Do the test and administration procedures in Chapter 4, ‘‘Lucent INTUITY System Administration for Switch Integration’’.
2. If you run into any problems, see Appendix C, ‘‘LAN Link Troubleshooting Procedures’’.
3. Continue with Task 14, "Activate Alarm Origination".

Task 14 - Activate Alarm Origination

The following procedure creates an acceptance test that verifies and sends a message to the remote maintenance center that the connection is good, the system is prepared to automatically transmit alarms, and the designated remote maintenance center is ready to accept alarms for this system. This procedure tests the path from the Lucent INTUITY system to the remote maintenance center.

1. Starting at the Lucent INTUITY main menu, select:

```
> Customer/Services Administration
    > Alarm Management
```

   The system responds with the Alarm Management screen (Figure D-13).

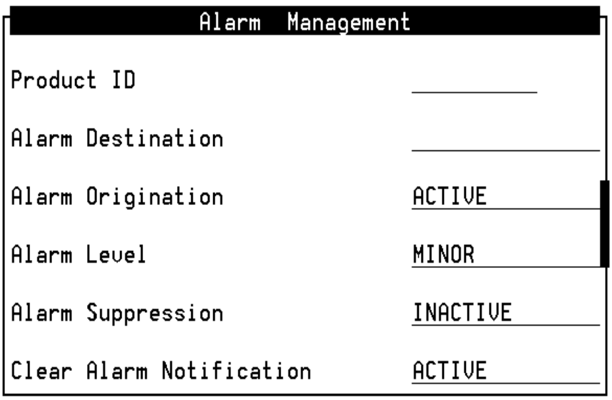


Figure D-13. Alarm Management Screen

2. Move the cursor to the `Alarm Origination` field.
3. Press F2 (Choices).

   The system responds with the Alarm Origination screen (Figure D-14).

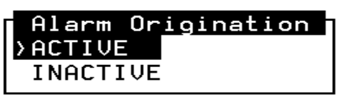


Figure D-14. Alarm Origination Menu

4. Select `ACTIVE`.

The system responds by changing the entry to `ACTIVE`.

5. Press F3 (Save).

   The system responds with an Information screen (Figure D-15).

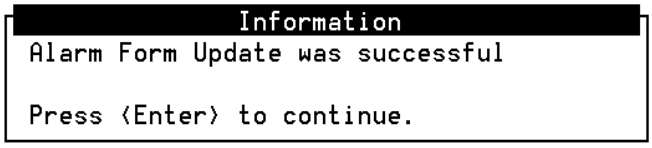


Figure D-15. Information Screen

6. Press ENTER.

   The system returns to the Alarm Management screen.

7. Press F8 (Change Keys).

8. Press F1 (Test Alarm).

   The system responds with the Alarm Origination Test menu (Figure D-16).

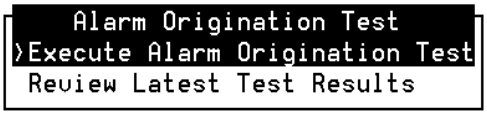


Figure D-16. Alarm Origination Test Menu

9. Select `Execute Alarm Origination Test`.

   The system responds with the following prompts:

   ```
   Alarm Origination tests may take up to
   5 minutes to complete. This test will
   be run in the background.

   Press <y> to confirm.
   Press <n> to cancel.
   ```

10. Enter **y**.

    The system returns to the Alarm Origination Test menu.

11. Wait approximately 1 minute.

12. Select `Review Latest Test Results`.

    The system responds with the Alarm Origination Test Results screen (Figure D-17).

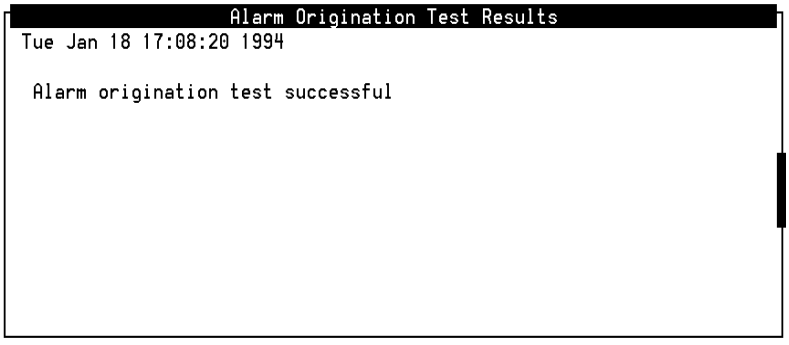


Figure D-17. Alarm Origination Test Results Screen

13. Verify that the Alarm Origination Test Results screen does not contain any error messages such as “Alarm port busy.”

    If you see any error messages and need assistance, contact your remote maintenance center.

14. Press F6 (Cancel) to return to the Alarm Origination Test Results screen.
15. Wait approximately 4 minutes.
16. Select `Review Latest Test Results`.
17. Verify that the message on the screen reads:

    ```
    Day Date Time

    Alarm origination test successful.
    ```

    The entry on the screen should correspond with the time that you sent the alarm.

18. Press F6 (Cancel) four times until you reach the INTUITY AUDIX Administration screen.
19. Continue with Task 15, "Create a Test Alarm".

Task 15 - Create a Test Alarm

Use the following procedure to create a test alarm. This alarm signals to the remote maintenance center to update their database.

1. Starting at the Lucent INTUITY Administration screen, select:

   ```
   > AUDIX Administration
   ```

The system responds with the AUDIX Administration screen.

2. Type **test alarm-origination** at the `enter command:` prompt at the bottom left side of the screen.
3. Press F3 (Enter).

   System response:

   ```
   To activate the test alarm, press ENTER. This alarm
   will retire itself automatically in thirty minutes.

   If logged in remotely, please log off as soon as
   possible after pressing ENTER.
   ```

4. Press F3 (Enter).

   The system clears the AUDIX screen field and displays an “m” for minor alarm in the Alarms field at the top, center of the screen.

5. Type **exit** and press ENTER.

   The system returns to the AUDIX Administration screen.

6. Press F6 (Cancel) until you log out of the system.
7. Continue with Task 16, "Backup the Lucent INTUITY System".

Task 16 - Backup the Lucent INTUITY System

After you have converted the Lucent INTUITY system to LAN integration, you should do a backup of the entire system. A backup is the only way to ensure the system can recover in the event of an unforeseen catastrophic failure, such as equipment or power failure, or problems with the conversion.

To perform a full system backup:

1. From the Lucent INTUITY main menu, select:

   ```
   > Customer/Services Administration
       > Backup/Restore
           > Backup
   ```

   The system displays the Backup window (Figure D-7).

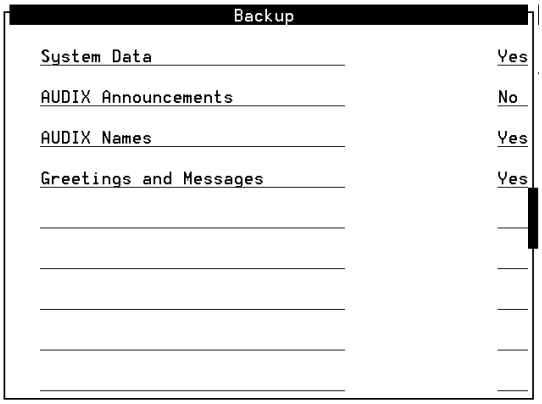


Figure D-18. Sample Backup Window

NOTE:
The screen displays fields based on the system's configuration and may differ from this illustration.

2. Enter **Yes** in all fields to back up all data.
3. Press F3 (Save).

   The system displays the message:

   ```
   backup started
   calculating approximate number of tape(s) required
   please wait
   ```

   ```
   the backup will need approximately:
   x yyy MB cartridge tape(s)
   ```

   Where *x* is the number of blank tapes you will need and *yyy* is the tape capacity (for example 525 Mb).

4. Make sure that there are enough cartridge tapes to accommodate the backup.

   The system displays the message:

   ```
   Verify whole backup tape(s) will double the amount
   of backup time.
   Do you really want to verify tape(s)?
   (Strike y or n)
   ```

NOTE:
Verification is not necessary to ensure a good backup tape. The Lucent INTUITY system verifies a backup tape by reading back the entire set of data just written onto the tape, which doubles the total time required.

5. Press **n** to not verify the backup.

   The system displays the following message:

   ```
   please insert a tape into the tape drive to back up
   tape 1
   press <Enter> when tape is inserted
   press <Esc> key to terminate the backup
   ```

6. Press the button on the upper right corner of the drive to open the drive door.
7. Insert an initialized blank tape.
8. Close the door to push in the tape.
9. Press ENTER when the tape drive is idle.

   NOTE:
   If you pressed ENTER before you inserted the tape into the drive, you must press ENTER again after the tape is in the drive.

   The system displays a series of messages indicating what is stored on the backup tape.

10. To load another tape (if the backup is complete, go to step 11):
    a. Press the button on the upper right corner of the drive to open the drive door.
    b. Remove the current tape.
    c. Label the tape with the current date and backup data type(s).
    d. Insert the next tape.
    e. Press ENTER when the tape drive is idle.

    When the backup is complete, the system displays the following message:

    ```
    backup process has been completed successfully
    press any key to continue
    ```

11. Press ENTER.
12. Label all backup tapes with the current date and backup data type(s).
13. Press F6 (Cancel) repeatedly to return to the Lucent INTUITY Main menu.
14. Continue withAlternate Crossover Wiring Task 17, "Replace the Nightly Backup Tape".

Task 17 - Replace the Nightly Backup Tape

Return the unattended nightly backup tape to the tape drive.

NOTE:
Failure to return the nightly backup tape to the tape drive results in a system alarm when the system attempts to complete the next nightly backup. This alarm remains on the system until a successful backup the following night.

Task 18 - Remove the Old Integration Software Tapes

Remove the old integration software from the site so that in case of a failure, the correct version will be loaded.

Specific Switch Integration Parameter Administration

E

Overview

This chapter provides information about customizing the switch integration parameters for the Lucent INTUITY system.

CAUTION:
Only use these procedures under the direction of your remote maintenance center. Failure to correctly set these parameters will cause the switch integration to fail to operate.

Specific parameter administration for the Lucent INTUITY system consists of:

- Country selection — establishes the location of operation and the analog parameters under which the system will operate. This option allows the Lucent INTUITY system to be set using pre-set parameters matched to the DEFINITY, or that closely match the actual operating conditions. You can also select other and administer all of the parameters.

  NOTE:
  Only the remote maintenance center can select “other” for the country option.

- Parameter tuning — allows individual parameters to be changed from the default settings to a custom selection to match the operating requirements of a specific installation.

For systems with DEFINITY switches administered with the country code, the only administration necessary is country selection which establishes pre-selected parameters. If, however, the DEFINITY tone plan has been customized, the

corresponding changes can be administered on the Lucent INTUITY system via the screens for parameter tuning.

Purpose

This chapter provides the information you need to adjust parameters for a Lucent INTUITY system integrated with a DEFINITY switch using a LAN link.

Set the Country and Switch

Use this procedure to set the country and switch for the system's switch integration or to print the default settings for the telephony interface if needed. The selections in this window determine the defaults set in the system. If the system does not offer an exact match, select the country the matches the installation conditions as closely as possible.

NOTE:
Only the remote maintenance center can set the country to "other".

1. Starting at the Lucent INTUITY main menu, select

```
> Switch Interface Administration
    > Switch Selection
```

The system displays the Switch Selection window (Figure E-1).

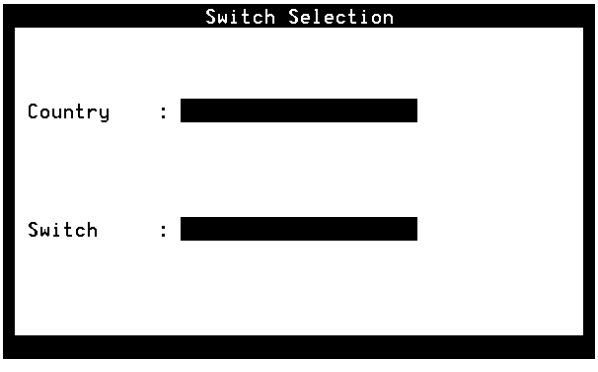


Figure E-1. Switch Slection Window

NOTE:
It is recommended that you make a printout of the system's current telephony parameters in case they are needed for troubleshooting. If a printer is connected to the Lucent INTUITY system and you want a record of the default settings, press F7 (PRINT).

The system prints the current parameters for:

— Interface Parameters

— Frequency Specification

— All switch tones windows, including Busy Tone, Dial Tone, Reorder Tone, Ring Tone, and Stutter Tone

2. Enter a country name in `Country:` field. Select the country of the installation or the country name with the settings that are the closest. See Table E-1 for an explanation of the parameters.
3. Enter DEFINITY OverLAN in the `Switch:` field, unless the country is set to "other". See Table E-1 for an explanation of the parameters.
4. Press F3 (SAVE).

   The system displays the following message:

   ```
   By changing the country name, you will install default
   values for the new country. In this process, the
   current settings will be lost. You may want to keep a
   printout of the settings for your reference. Do you
   wish to continue with this change (y/n)?
   ```

5. Choose from the following:

   - If you have already printed the settings or do not want a printout, enter **Y**
   - If you have not already made a printout and now decide you want one, do the following:

     a. Enter **n**

     b. Press F7 (PRINT).

     c. Press F3 (SAVE).

   The system displays the following message:

   ```
   Your changes have been saved. You need to stop and start
   the Voice System to make these changes active.
   ```

   NOTE:
   Do not stop and start the voice system at this time.

   When you stop and then restart the system, the system displays the country and switch names on the telephony interface windows and activates the default parameters associated with the country and switch.

6. Press F1 (ACKNOWLG MESSAGE).
7. Press F6 (CANCEL) twice to return to the Lucent INTUITY main menu.
8. Determine your next step:
   - If you know the information that needs to be modified and the correct settings, select the section of this appendix that applies, and follow the instructions. After changing the parameters, stop and start the voice system to make the changes take effect.
   - If you need to test the tones, continue with the next section, "Determine Call Progress Tones," on page E-5. After testing and changing the parameters, stop and start the voice system to make the changes take effect.

Table E-1. Switch Selection Window — Field Descriptions

Field	Description
`Country:`	Specifies the country for which the system sets country-specific default parameters. The selectable countries depend on the switch integration software package(s) loaded on the system. Normally the country is set at the factory for the integration. ■ If only the platform software is loaded and no switch integration software, this field defaults to OTHER. ■ When a switch integration package is installed, any of the countries configured in that package or OTHER can be selected. Press F2 (CHOICES) to see a list of choices. Only the remote maintenance center can select OTHER. The system provides this choice so integrations can be done in countries not in the list of choices or during troubleshooting. When OTHER is selected, the system removes all internal restrictions on the parameters displayed in the Interface Parameters window (see "Setting the Interface Parameters" in this chapter). If OTHER is selected, the `Switch` field defaults to NO Switch. You cannot select a switch If OTHER is selected and should not be, ensure that the appropriate switch integration software is installed on the system. To display the name of the package, select Customer/Services Administration, System Verification, View Installed Software.

Table E-1. Switch Selection Window — Field Descriptions — *Continued*

Field	Description
`Switch:`	Specifies the switch for which the system sets default parameters in the call data interface. The selectable switches depend on the switch integration software loaded on the system. Normally the switch type is set at the factory for the integration. ■ If the platform software is loaded but switch integration software is not loaded, this field defaults to NO SWITCH. When NO SWITCH is selected, the system removes all switch-specific defaults in the call data interface and substitutes generic defaults. ■ When a switch integration package is installed, any of the switches approved for the specified country are selectable. However, NO SWITCH is not a valid selection. Press F2 (CHOICES) to see a list of choices. ■ If the country is set to OTHER in the `Country:` field, you cannot select a switch in this field.

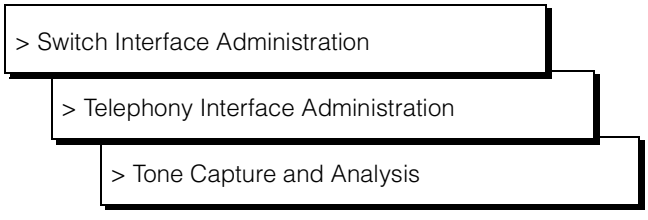
Determine Call Progress Tones

Use the Tone Capture and Analysis Screen (Figure E-2) to evaluate call progress tones on various switches in cases where the system defaults must be tuned. This tool enables you to:

- Use a set of commands to simulate a call scenario that makes the switch generate a tone.
- Capture the tone.
- Analyze the tone to determine its frequency and cadence.

After analysis, you can tune the tone parameters set in the Lucent INTUITY system to match the actual switch parameters in the Dial Tone, Busy Tone, Reorder Tone, Ringback Tone, or Stutter Tone windows.

1. Starting at the Lucent INTUITY main menu, select



The system displays the Tone Capture and Analysis window (2.12x).

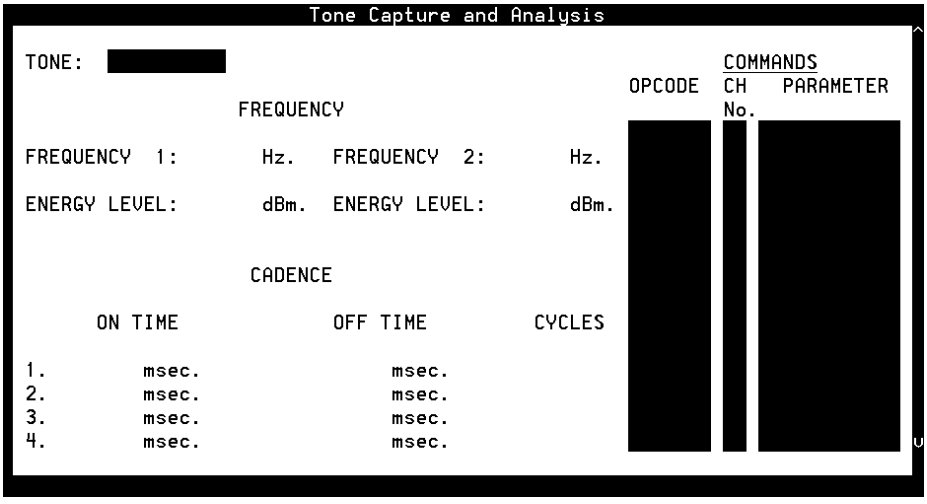


Figure E-2. Tone Capture and Analysis Window

2. Press F1 (ACKNOWLG MESSAGE) to remove the message about no commands available to capture tone.
3. Enter a name for the tone to capture (see Table E-2).
4. Enter commands in the OPCODE, CH No., and PARAMETER fields (see Table E-3 and the examples following it for sequences to use.)

   NOTE:
   If the cursor is in the commands fields, you can press F8 (CHG KEYS) to access keys that allow you to delete a command line F4 (DELETE LINE), insert a command line F5 (INSERT LINE), or move the cursor to the Tone field F7 (HOME).

   Press F8 (CHG KEYS) again to change to the original keys or move the cursor out of the commands fields, and the keys will automatically change back.

5. Press F4 (CAPTURE).

   The system captures the tone generated by the OPCODE commands.

6. Press F5 (ANALYZE).

   The system analyzes the captured tone and displays its frequency and cadence in the output fields on the window (see Table E-4 and the section "Tone Analysis Output," on page E-11).

7. Do you want to save the commands for future use?

   - If no, go to Step 8.

- If yes, do the following:
  a. Press F3 (SAVE).

     The system displays the following message:

     ```
     Do you wish to continue with this change
     (y/n)?
     ```

  b. Enter **Y**

NOTE:
To delete a tone name and its associated commands, position the cursor in the Tone field and press F8 (DELETE TONE).

8. Press F6 (CANCEL) three times to return to the Lucent INTUITY main menu.
9. Change any values in the switch integration screens, as needed.
10. Stop and start the voice system to make the changes take effect.

.

Table E-2. Tone Capture and Analysis Window — Input Fields

Field	Description	Values
TONE	Allows you to enter a name for the tone. **NOTE:** If you save the OPCODE commands associated with this name, they are displayed whenever you enter the name in this field.	Maximum of 10 characters.
FREQUENCY 1: FREQUENCY 2:	These fields display the result of the tone frequency analysis, which can contain one or two frequency components. Frequency 1 is the lower frequency and Frequency 2 is the upper frequency.	■ If only one component is present, the Frequency 2 field is blank. ■ If no frequency is detected, both fields are blank. This may be a result of improper capturing of the tone.
ENERGY LEVEL: (two fields	These fields display the results of analysis of the energy level of each frequency component.	Displayed in dBm.

Continued on next page

Table E-2. Tone Capture and Analysis Window — Input Fields — *Continued*

Field	Description	Values
ON TIME (four fields)	These fields display the results of analysis of the tone cadence on time.	Displayed in msec.
OFF TIME (four fields)	These fields display the results of analysis of the tone cadence off time in.	Displayed in msec.
CYCLES (four fields)	These fields display the results of analysis of the number of occurrences of the on time/off time cycles.	Integer.
OPCODE	Allows you to enter the OPCODE command.	Specifies the operation to be performed on the channel (seeTable E-3).
CH. No.	Allows you to enter the required channel number that the Lucent INTUITY system will use to run the command.	The port number on the Tip/Ring card.
PARAMETER	Allows you to enter additional information for some of the OPCODE commands, including time in seconds or a dialstring.	The value allowed depends on the OPCODE command (see Table E-3). Possible values are: ■ ***<duration>*** — Specifies the number of msec for the operation to be performed. ■ ***<digit_string>*** — Specifies a dial string. Valid characters are 0-9, #, and *.

The system recognizes the following OPCODE commands (Table E-3).

Table E-3. OPCODE Commands

Command	Description
OFFHK ***<CH_No.>***	Seizes the specified line.
ONKH ***<CH_No.>***	Emulates an on-hook condition on the specified line (Idle).
DIAL ***<CH_No.> <digit_string>***	Dials out DTMF digits through the specified line.
FLASH ***<CH_No.> <duration>***	Performs hook flash on the channel for the specified number of msec.
RECORD ***<CH_No.> <duration>***	Captures the PCM data of the voice on the line and stores it in a file. The duration is specified in seconds and should be suitably chosen to capture a sufficient number of on/off cycles of the tone.
PLAY ***<CH_No.>***	Plays the stored tone on the specified channel.
WAIT ***<CH_No.> <duration>***	Introduces a number of seconds of delay in execution of the next command. This command can be introduced anywhere in the command sequence.

.

Table E-4. Tone Capture and Analysis Window — Output Fields

Field	Description	Values
FREQUENCY 1:	These fields display the result of the tone frequency analysis, which can contain one or two frequency components. Frequency 1 is the lower frequency and Frequency 2 is the upper frequency.	■ If only one component is present, the Frequency 2 field is blank. ■ If no frequency is detected, both fields are blank. This may be a result of improper capturing of the tone.
FREQUENCY 2:		
ENERGY LEVEL: (two fields	These fields display the results of analysis of the energy level of each frequency component.	Displayed in dBm.

Continued on next page

Table E-4. Tone Capture and Analysis Window — Output Fields — *Continued*

Field	Description	Values
`ON TIME (four fields)`	These fields display the results of analysis of the tone cadence on time.	Displayed in msec.
`OFF TIME (four fields)`	These fields display the results of analysis of the tone cadence off time in.	Displayed in msec.
`CYCLES (four fields)`	These fields display the results of analysis of the number of occurrences of the on time/off time cycles.	Integer.

Dial Tone Capture Sequence

The following command sequence captures dial tone. Adjust the channel numbers and the parameters to match the switch on which you are working.

Table E-5. Busy Tone Capture Sequence

OPCODE	CH No.	Parameter	Command Result
OFFHK	**16**		Make line 16 busy.
WAIT	**16**	**4**	Inserts a delay to accommodate silence or the connect time.
RECORD	**16**	**10**	Record the tone for 10 seconds.
ONHK	**16**		Unbusy line 01.

Ringback Tone Capture Sequence

The following command sequence captures ringback tone. Adjust the channel numbers and the parameters to match the switch on which you are working.

Table E-6. Busy Tone Capture Sequence

OPCODE	CH No.	Parameter	Command Result
OFFHK	**01**		Make line 01 busy.
DIAL	**01**	**<a valid extension number that is not busy>**	Dials the extension.
RECORD	**01**	**15**	Record the tone for 15 seconds.
ONHK	**01**		Unbusy line 01.

Busy Tone Capture Sequence

The following command sequence captures a busy tone. Adjust the channel numbers and the parameters to match the switch on which you are working.

Table E-7. Busy Tone Capture Sequence

OPCODE	CH No.	Parameter	Command Result
OFFHK	**01**	**124**	Make line 01 busy.
DIAL	**01**	**1234**	Dial extension number of line 01.
OFFHK	**02**	**126**	Cause the switch to inject busy tone on line 02.
DIAL	**02**	**127**	Dial extension number of line 02.
RECORD	**02**	**3**	Record the tone for 3 seconds.
ONHK	**01**		Unbusy line 01.

Tone Analysis Output

The following information can be used to interpret and use the analysis results:

- The frequency output has a granularity of 5 Hz. For example, the UK 404 Hz displays as 405 Hz.

- Timing out has an accuracy of +/- 10 Hz. For example, a busy tone analysis may display the following results:

ON TIME	OFF TIME	CYCLES
510	500	1
510	490	2
500	500	2
490	510	1

For results such as these, interpret the on and off times as 500 msec each. The busy tone window should be administered as:

ON TIME	OFF TIME	CYCLES
500	500	2

Values used for cycles should be 1 or 2 to allow reliable detection of tone with as minimum detection period as possible.

- The tip/ring driver reports a timing values which is different from the actual cadence of the tone. In most of the cases, the tone capture and analysis output will work because the system compensates for the deviation. However, if you experience any problems in detecting a tone:

  1. Replace the ON TIME by (0.9 * ON TIME). Run the test. If this does not help, set ON TIME back to the original value and continue with the next step.
  2. Replace the OFF TIME by (1.1 * OFF TIME). Run the test. If this does not help, continue with the next step.
  3. Replace both of the values. Use (1.1 * OFF TIME) for the OFF TIME value and (0.9 * ON TIME) for the ON TIME value.

Setting the Interface Parameters

Use this procedure to change the values for the analog interface parameters needed by the Tip/Ring drivers and the switch.

1. Starting at the Lucent INTUITY main menu, select

```
> Switch Interface
    > Telephony Interface
        >Analog Interface
            >Interface Parameters
```

The system displays the first of two pages of the Interface Parameters window (Figure E-3) with two columns of data. The `Default` (left-hand) column shows defaults for the currently active country and switch. The `Current` (right-hand) column shows the current settings. If you are administering this window for the first time, the default settings and the current settings are identical. If the window has been previously administered, they may differ. To access the second page of this window, press F5 (NEXT PAGE). To return to the first page, press F6 (CANCEL).

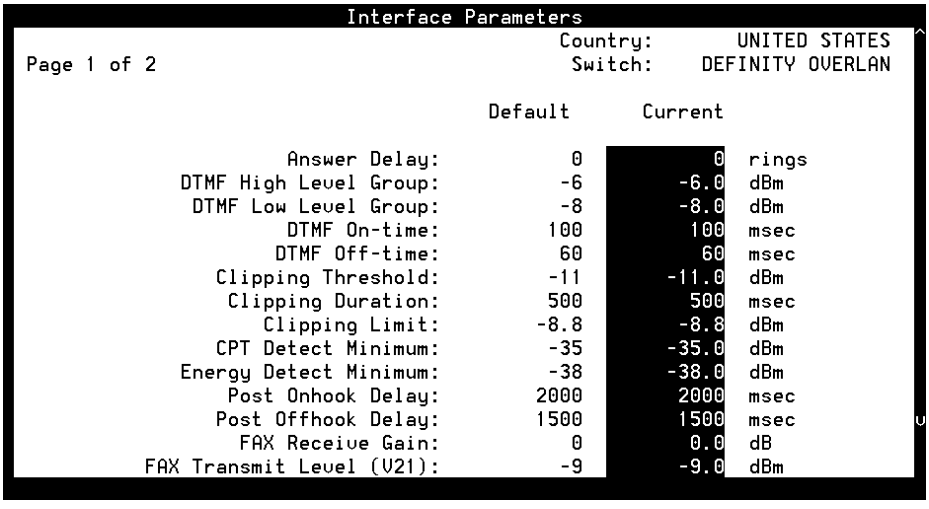


Figure E-3. Interface Parameters Window — Page 1 of 2

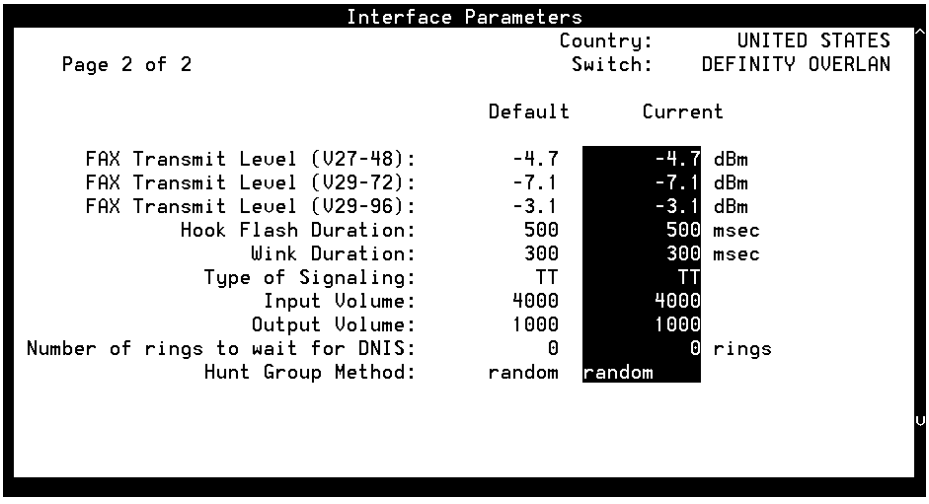


Figure E-4. Interface Parameters Window — Page 2 of 2

2. If this window has been previously administered, the values for any of the current setting that you change will be lost. It is highly recommended that you make a printout of the current settings in case they are needed again in the future. Do you want a printout at this time?
   - If no, continue with Step 3.
   - If yes, press F7 (PRINT).
3. Enter values in the fields in the `Current` column, as appropriate (see Table E-8). The craft login can set values in any of the nonrestricted fields.

   NOTE:
   To change a restricted value, change the system's country assignment to OTHER on the Switch Selection window. This setting removes the restrictions but prohibits the craft login from changing parameters on any windows in the telephony interface.

4. Press F3 (SAVE).

   The system displays the following message:

   `Your changes have been saved. You need to stop and start the Voice System to make these changes active.`

5. Press F1 (ACKNOWLG MESSAGE).
6. Press F6 (CANCEL) four times to return to the Lucent INTUITY main menu.

Table E-8. Analog Interface Parameters Window — Field Descriptions

Restriction	Field	Description	Values
–	`Country:`	Displays the country set on the Switch Selection window.	Display only.
—	`Switch:`	Displays the switch type set on the Switch Selection window.	Display only.
`No`	`Answer Delay:`	Number of rings for the INTUITY system to delay before answering a call. (The delay may be regulated in your country.)	Range 0-50 rings. Usually set at 0 to 2.
`Yes`	`DTMF High Level Group:`	Input level for the dual tone multifrequency (DTMF) high group tone. Used to set the level and create twist. (Typically the default value does not require change.)	Range -40 to 0 dBm in increments of 0.1 dBm. Usually set at -1.7.
`Yes`	`DTMF Low Level Group:`	Output level for the DTMF low group tone. (Typically the default value does not require change.)	Range -40 to 0 dBm in increments of 0.1 dBm. Usually set at -1.7.
`Yes`	`DTMF On-time:`	Output DTMF tone duration for auto dialing. (The duration may be regulated in your country.)	Range 20-30000 msec in increments of 10 msec. Usually set at 100.
`Yes`	`DTMF Off-time:`	Output DTMF interdigit pause for auto dialing. (The duration may be regulated in your country.)	Range 20-30000 msec in increments of 10 msec. Usually set at 60.
`Yes`	`Clipping Threshold:`	If the clipping threshold is exceeded for longer than the duration specified in the `Clipping Duration:` field, clipping becomes active. (If clipping occurs, speech may be audibly distorted.)	Range -25 to 3 dBm in increments of 0.1 dBm. Usually set at -8.8.

Continued on next page

Table E-8. Analog Interface Parameters Window — Field Descriptions — *Continued*

Restriction	Field	Description	Values
Yes	Clipping Duration:	The length of time the output level can exceed the clipping threshold before clipping becomes active. (If clipping occurs frequently, the duration can be increased.)	Range 0-30000 msec in increments of 1 msec. Usually set at 500.
Yes	Clipping Limit:	The level clipped to when clipping is active and the output exceeds the limit. (If distortion is extreme, the level can be increased.)	Range -25 to 3 dBm in increments of 0.1 dBm. Usually set at -11.
Yes	CPT detect minimum:	The minimum detection level for call progress tones. (If set too low, the system may detect noise on the line as tone. If set too high, actual tones may not be detected.)	Range -48 to 3 dBm in increments of 0.1 msec. Usually set at -35.
Yes	Energy detect minimum:	Minimum energy level needed to classify speech energy used in answer detection. (If set too high, the answer may not be detected. If set too low, false detection may occur.)	Range -48 to 3 dBm in increments of 0.1 msec. Usually set at -38.
No	Post onhook delay:	Delay in the acknowledgment response to a request to go onhook. (If set too high, calls are not disconnected soon enough upon hangup, and system users may have to wait too long to proceed.)	Range 0-30000 msec in increments of 20 msec. Usually set at 2000.
No	Post offhook delay:	Delay in the acknowledgment response to a request to go offhook. (If set too high, the end user may be forced to wait too long after picking up the receiver to proceed.)	Range 0-30000 msec in increments of 20 msec. Usually set at 1500.

Continued on next page

Table E-8. Analog Interface Parameters Window — Field Descriptions — *Continued*

Restriction	Field	Description	Values
No	Fax receive gain:	Sets the receive gain adjustment for FAX modem receive operations. (If set too low, FAXes may not be received from the other end and errors may be registered at the sending machine.)	Range -48 to 12 dB in increments of 0.1 dB. Usually set at 0 dB.
No	Fax transmit level (V21): Fax transmit level (V27-24): Fax transmit level (V27-48): Fax transmit level (V29-72): Fax transmit level (V29-96):	Sets the transmit level for the designated FAX modems: ■ FAX V21 bps — Usually set at -9.0 ■ FAX V27 2400 bps — Usually set at -4.7 ■ FAX V.27 4800 bps — Usually set at -4.7 ■ FAX V.29 7200 bps — Usually set at -7.1 ■ FAX V.29 9600 bps — Usually set at -3.1 (If set too low, the other end may not receive FAX transmissions; end users may not be able to print FAXes sent to their mailboxes.)	Range -48 to 3 dBm in increments of 0.1 dBm.
No	Hook flash duration:	Sets the duration for the switch hook flash to be recognized by the switch. (If the duration is too short, all transfers out of INTUITY Audix system will fail.)	Range 100-2000 msec in increments of 10 msec.
No	Wink Duration:	Specifies the minimum duration of the loss of loop current that the switch recognizes to signify a disconnect, if disconnect signaling is done using wink. (If set to low, disconnects will not occur.)	Range 80-800 msec in increments of 10 msec. Usually set at 300.
No	Type of Signaling:	Specifies the type of address signaling as either touch-tone (TT) or dial pulse (DP). **NOTE:** This value must always be set to TT for the Lucent INTUITY system.	■ TT for touch tone ■ DP for dial pulse

Continued on next page

Table E-8. Analog Interface Parameters Window — Field Descriptions — *Continued*

Restriction	Field	Description	Values
No	Input volume:	Specifies the incoming speech volume for INTUITY messages and prompts See Table E-9 in "Input Volume and Output Volume" below. (If the volume is too low, messages may not be clearly audible. If too high, messages may be unacceptably loud to end users; clipping and hence distortion may occur. Normally the default parameters provide appropriate volume levels; however, certain line characteristics may make changes necessary.)	Range 500-5000 dB in increments of 10 dB. Suggested value 4000 (12 dB).
No	Output volume:	Specifies outgoing speech volume. This parameter controls the playback level of recorded messages and prompts. (See Table E-9 in "Input Volume and Output Volume" below).	Range 500-5000 dB in increments of 10 dB. Suggested value is 1000 (0 dB).
No	Number of rings to wait for DNIS:	**NOTE:** This field is not used for the Lucent INTUITY system.	
No	Hunt Group Method:	Specifies the order of hunting for idle channels. (This value may affect the results of traffic analysis.)	■ Ascending ■ Descending ■ Random

Input Volume and Output Volume

The values in the Input Volume and Output Volume fields are volume multipliers (that is, plus or minus gain) of the incoming or outgoing signal. A value of 1000 is equivalent to multiplying the signal volume by 1 (that is, unity gain). Multiplying the current setting by 0.707 results in a -3 dB signal volume gain from the current volume (volume 3 dB lower). Multiplying the current setting by 0.414 results in a +3 dB signal volume gain from the current volume (volume 3 dB higher). The settings for gain in 3 dB increments from -21 dB to +21 dB are:

Table E-9. Volume Loss and Gain Settings

dB Loss	Setting	dB Gain	Setting
0 dB	1000	0 dB	1000
-3 dB	707	3 dB	1412
-6 dB	501	6 dB	1995
-9 dB	354	9 dB	2818
-12 dB	251	12 dB	3981
-15 dB	177	15 dB	5623
-18 dB	125	18 dB	7943
-21 dB	89	21 dB	11220

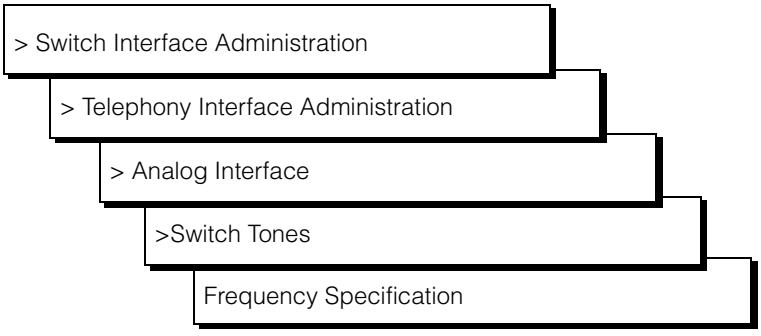
Setting Frequencies and Frequency Groups

Use this procedure to set the country-specific frequencies and frequency groups that the Lucent INTUITY system uses to recognize call progress tones that the switch sends. Each call progress tone is made up of one or two frequencies. Accordingly, a frequency group is either a single frequency or a set of two frequencies that you define as a group so the group can then be assigned to a particular type of tone.

The required frequencies may differ for the various types of tones — busy tone, dial tone, reorder tone, ring tone, and stutter tone — though in general each country uses a small number of frequencies to define all tones. In some cases a single frequency is used for all tones, and the tones differ only in cadence, that is the on/off cycles that compose the tone. (See "Setting Parameters for Switch Tones" and "Setting Additional Call Progress Tones".) Therefore, for ease of administration, you can assign as many as three distinct frequency groups that contain appropriate sets of frequencies to cover all the types of tones your system uses.

This procedure also allows you to enable *dial tone training*. In dial tone training, the system analyzes the dial tone that the switch sends to determine its constituent frequencies. If the frequencies obtained from the analysis differ from the frequencies set in your Lucent INTUITY system, these settings are automatically overwritten with the values obtained from analysis. (See "Special Considerations for Dial Tone Training" following Table E-10 for more information,)

1. Starting at the Lucent INTUITY main menu, select:



The system displays the Frequency Specification window (Figure E-5) with defaults for your integration. If the parameters have been previously administered, the system displays the current values instead.

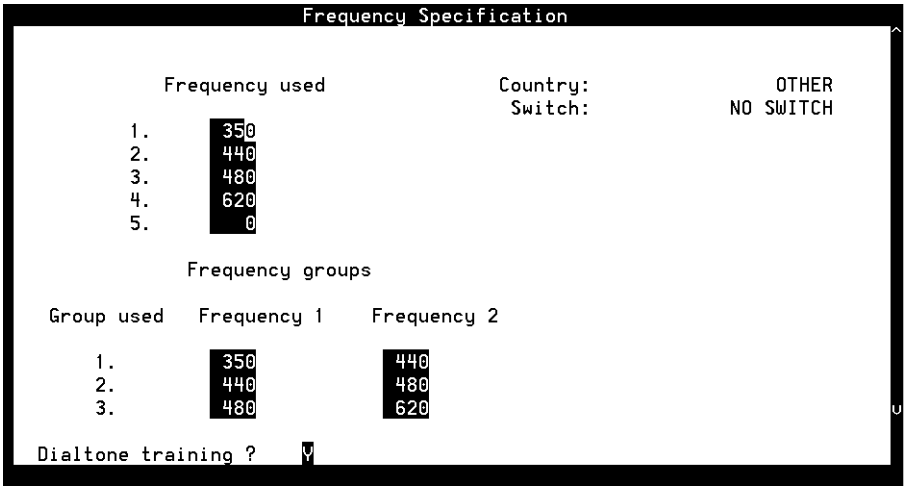


Figure E-5. Frequency Specification Window

2. Enter values in the `Frequency used` fields, as necessary to represent all the frequencies used for all the tones in your system (see Table E-10).

NOTE:
Enter dial tone frequencies first. If only one frequency is used for dial tone, enter it in the first `Frequency used` field. If two frequencies are used, enter them first and second. You can enter the other frequencies your system uses in any order. (See "Special Considerations for Dial Tone Training" following Table E-10 for more information.)

3. Enter frequencies in the `Frequency 1` and `Frequency 2` fields for the first frequency group used (see Table E-10).
4. Enter frequencies in the `Frequency 1` and `Frequency 2` fields for the second and third frequency groups, if necessary for your system (see Table E-10).
5. Enter **Y** or **N** in the `Dialtone training?` field (see Table E-10).
6. Press F3 (SAVE).

   The system displays the following message:

   ```
   Your changes have been saved. You need to restart the
   Voice System to make these changes active.
   ```

7. Press F1 (ACKNOWLG MESSAGE).
8. Press F6 (CANCEL) five times to return to the Lucent INTUITY main menu.

Table E-10. Frequency Specification Window — Field Descriptions

Field	Description	Values
`Country:`	Displays the country set on the Switch Selection window.	Display only.
`Switch:`	Displays the switch type set on the Switch Selection window.	Display only.
`Frequency used (five fields)`	Enables you to list up to five different frequencies used in the country for which you are setting tones. The values you enter here are displayed on the Busy Tone, Dial Tone, Reorder Tone, Ring Tone, Stutter Tone, First Additional Tone, Second Additional Tone, and Third Additional Tone windows.	Range 300-4000 Hz. Unused frequencies are indicated by 0 (zero). The first frequency can never be 0. If a frequency is 0, the following frequencies on the list are also 0.
	NOTE: You must specify the frequencies used for dialtone as the first tones in this list so that if dialtone training is used, the dialtone filters are the ones that get modified. These frequencies must be first because dialtone training overwrites the first values in the list with the actual values from analysis. See "Special Considerations for Dial Tone Training" following Table E-10,	
`Group used`	Provides a reference number for each of the three frequency groups you can set.	1, 2, or 3. Display only. Most switches use 1 to 3 frequency groups in their tones.

Continued on next page

Table E-10. Frequency Specification Window — Field Descriptions — *Continued*

Field	Description	Values
`Frequency 1`	Defines the first of a maximum of two frequencies that make up a tone.	Frequencies in these groups must be defined in the `Frequency used` fields. If a frequency group is unused, by default the values for both Frequency 1 and Frequency 2 are zero (0). If a group has only one frequency, enter that frequency in the `Frequency 1` field and enter zero (0) in the `Frequency 2` field.
`Frequency 2`	Defines the second of a maximum of two frequencies that make up a tone. **Example** Suppose dial tone is 440 Hz + 480 Hz, and you want to assign Group 1 for dial tone. To do so, enter 440 in the `Frequency 1` field and 480 in the `Frequency 2` field for Group 1. Later when defining dial tone, you can simply specify that it uses Group 1.	
`Dialtone training?`	Specifies whether your system uses dial tone training. Thus, if your system uses the same frequencies for other call progress tones besides dial tone, you can define two different groups using the same frequencies. One group can be used for dial tone and the other group for other call progress tones.	■ Y to enable dial tone training ■ N to disable dial tone training If the dial tone on your system is not continuous, the dial tone training flag is internally set to N and the system ignores this field.

Special Considerations for Dial Tone Training

If dial tone training is enabled, the system overwrites the frequencies assigned for dial tone with whatever frequencies dial tone training analysis detects. The system is configured to expect the first frequency or frequencies on the list on the `Frequency used` field to be for dial tone. If dial tone training detects only one frequency in the dial tone, the system overwrites the first frequency specified. If it detects two frequencies in the dial tone, the system overwrites the first two frequencies.

NOTE:
Any changes to the frequencies made through dial tone training are not indicated on the windows in the user interface.

Problems may arise, however, if the switch tones for in dial tone are not precisely tuned. For example, suppose your system is configured to expect the single frequency of 440 Hz for dial tone and all other tones and that 440 Hz is listed as

the first and only frequency in the `Frequency Used` field. Suppose further that dial tone training detects 441 Hz as the actual frequency sent by the switch. The system overwrites 440 Hz with 441 Hz. In this case, the system will recognize dial tone but not any of the other switch tones.

To ensure that this sort of problem does not occur, it is recommended that you enter the frequency or frequencies used for dial tone more than once in the `Frequency used` field. In the example above, then entry would be:

Frequency used	
1.	440
2.	440

If your system uses 350 and 440 Hz, the entry would be:

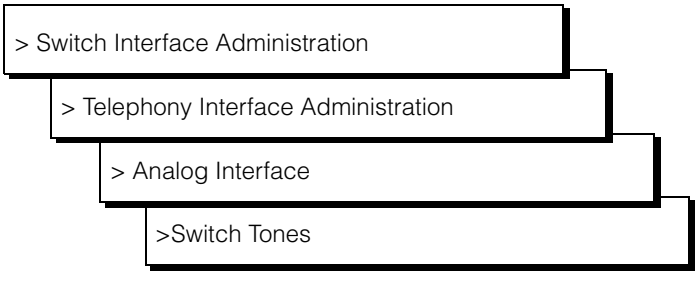
Frequency used	
1.	350
2.	440
3.	350
4.	440

Setting Parameters for Switch Tones

Use this procedure to set the frequencies and cadence the Lucent INTUITY system recognizes for call progress tones that the switch sends. Parameters for five different tones can be set — busy tone, dial tone, reorder tone, ring tone, and stutter tone. Each tone is made up of one or two frequencies and consists of a series of on and off timing cycles (cadence).

This procedure also allows you to specify whether the Lucent INTUITY system should interpret the tone you are setting as a disconnect signal (if call progress tones are used for disconnects in your system).

1. Starting at the Lucent INTUITY main menu, select



The system displays the Switch Tones menu (Figure E-6).

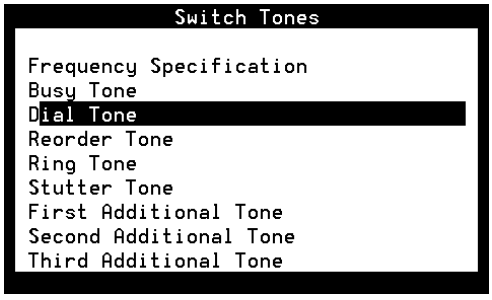


Figure E-6. Switch Tones Menu

2. Select one of the following menu items corresponding to the tone you want to set:

   - Busy Tone
   - Dial Tone
   - Reorder Tone
   - Ring Tone
   - Stutter Tone

   The system displays the appropriate window for the tone you selected with defaults for your integration. If the parameters have been previously administered, the system displays the current values instead. The window also displays the frequency groups set in the Frequency Specification window (Figure E-5). Figure E-7 shows the Dial Tone window. Windows for the other tones are identical except for their titles.

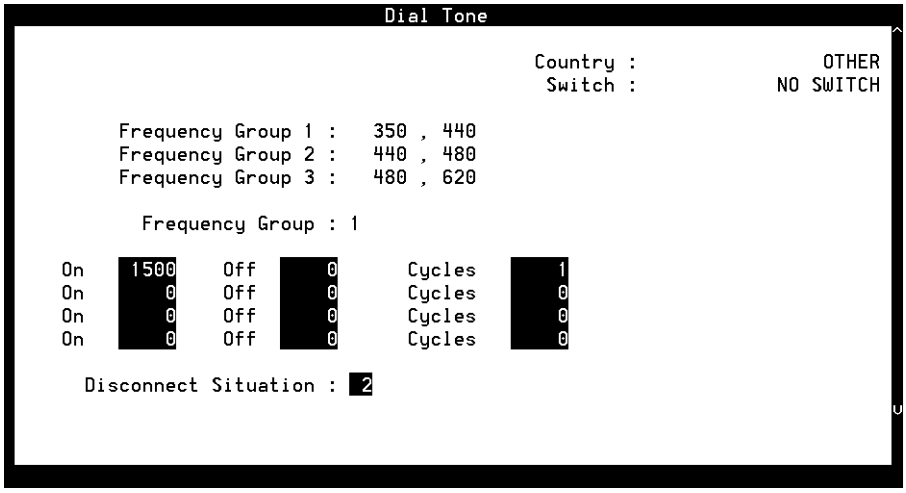


Figure E-7. Example of Switch Tone Window — Dial Tone

3. In the `Frequency group` field, select one of the frequency groups (1, 2, or 3) displayed at the top of the window for the system to use for this tone (See Table E-11).

   NOTE:
   These groups are assigned on the Frequency Specification window (see "Setting Frequencies and Frequency Groups" above).

4. Enter values in the `On`, `Off`, and `Cycles` fields (see Table E-11), as necessary to represent the tone cadence. (See the examples following Table E-11 for information on how to represent the cadence.)

   NOTE:
   If you set stutter tone, be sure the timing used for continuous tone (minimum on duration) matches the timing used for continuous tone on the dialtone screen. For example, if dialtone is set as continuous tone, minimum 2 seconds, then stutter tone might be 200 msec on, 200 msec off (3 cycles) followed by continuous tone, minimum 2 seconds.

5. Enter the appropriate value in the `Disconnect Situation` field (see Table E-11), depending on whether your system interprets this type of tone as a disconnect signal (see Table E-11).

6. Press F3 (SAVE).

   The system displays the following message:

   `Do you wish to continue with this change (Y/N)?`

7. Enter **Y**

   The system displays the following message:

   ```
   Your changes been saved. You need to stop and start the
   Voice System to make these changes active.
   ```

8. Press F1 (ACKNOWLG MESSAGE).
9. Do you want to set the frequency and cadence for another tone?
   - If no, press F6 (CANCEL) five times to return to the Lucent INTUITY main menu. You have completed this procedure.
   - If yes, do the following:
     a. Press F6 (CANCEL) to return to the Switch Tones menu.
     b. Repeat Steps 2 through 9 for the tone you selected.

Table E-11. Basic Tone Windows— Field Descriptions

Field	Description	Values
NOTE: These field descriptions apply to all the windows used for setting the five call progress tones, including the Busy Tone, Dial Tone, Reorder Tone, Ring Tone, and Stutter Tone windows.		
`Country`	Displays the country set on the Switch Selection window.	Display only.
`Switch`	Displays the switch type set on the Switch Selection window.	
`Frequency Group 1:`	These fields display the frequency groups set on the Frequency Specification window (Figure E-5).	
`Frequency Group 2:`		
`Frequency Group 3:`		
`Frequency Group:`	Sets the group of frequencies the system uses to generate the selected tone (see Figure E-5).	1, 2, or 3. You can specify only one frequency group per tone.

Continued on next page

Table E-11. Basic Tone Windows— Field Descriptions — *Continued*

Field	Description	Values
On	Sets the duration of the tone cadence on cycle.	Range 0-6000 msec. If an on timing is 0, it is assumed that the row is blank, and that the off timing and cycles are also 0 (see the examples following Table E-11).
Off	Sets the duration of the tone cadence off cycle.	
Cycles	Sets the number of times an on/off cycle repeats.	A cycle consists of an on duration and an off duration of specified lengths (see the examples following Table E-11).
Disconnect Situation:	Specifies when the tone should be treated as a disconnect signal. (This parameter is significant only in countries where disconnect signaling is done using call progress tones.)	■ 0 — Do not treat as disconnect. ■ 1 — Treat as disconnect during voice coding only. ■ 2 — Treat as disconnect at all times except outcalling.
Report as	Specifies the type of tone you are defining.	■ Busy ■ Dial ■ Ringback ■ Reorder ■ Stutter

Examples

Call progress tones are made up of various on/off timings, called *cadence*, which must be specified in order. These examples illustrate how the cadence is set on the basic call progress tone windows.

- Four rows are needed to specify the following tone:

250 msec on, 250 msec off
500 msec on, 500 msec off
250 msec on, 250 msec off
500 msec on, 500 msec off

```
On    250       Off   250       Cycles   1
On    500       Off   500       Cycles   1
On    250       Off   250       Cycles   1
On    500       Off   500       Cycles   1
```

- Three rows are needed for the following tone. Since the first two cycles repeat exactly (250 msec on, 250 msec off), their setting can be entered once and specified as repeating twice (2 cycles).

  250 msec on, 250 msec off
  250 msec on, 250 msec off
  500 msec on, 500 msec off
  250 ms on, 250 off

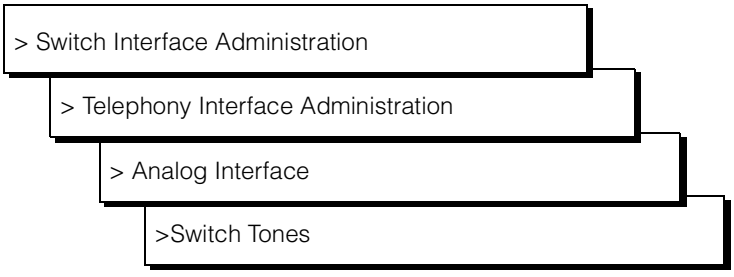
```
On    250       Off   250       Cycles   2
On    500       Off   500       Cycles   1
On    250       Off   250       Cycles   2
```

Setting Additional Call Progress Tones

In some cases your circumstances may require that you assign more than one set of parameters for a certain call progress tone. For example, if your switch and the switch at your public telephone network office use different dial tone parameters, you may need to set both in your INTUITY system.

Use this procedure to set the frequencies and cadence the INTUITY system recognizes for additional call progress tones. As many as three additional tones can be specified as either busy tone, dial tone, reorder tone, ring tone, or stutter tone. Like the basic tones (see "Setting Parameters for Switch Tones"), each additional tone is made up of one or two frequencies and consists of a series of on and off timing cycles (cadence). Unlike the basic tones, you cannot enable any additional tone you set to be recognized as a disconnect signal.

1. Starting at the Lucent INTUITY main menu, select:



The system displays the Switch Tones menu (Figure E-8).

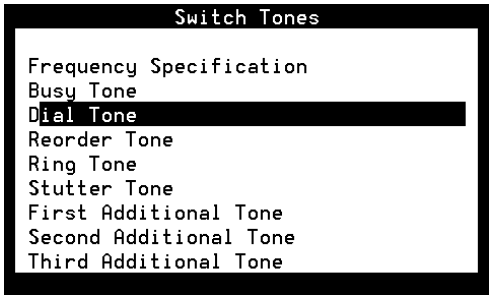


Figure E-8. Switch Tones Menu

2. Select one of the following menu items corresponding to the additional tone you want to set:
   - `First Additional Tone`
   - `Second Additional Tone`
   - `Third Additional Tone`

   The system displays the appropriate window for the tone you selected. If the parameters have been previously administered, the system displays the current values instead. If the parameters have not been previously administered, the value in the `Report as` field is `unused`. The window also displays the frequency groups set in the Frequency Specification window (Figure E-5).

   Figure E-9 shows the First Additional Tone window. Windows for the other additional tones are identical except for their titles.

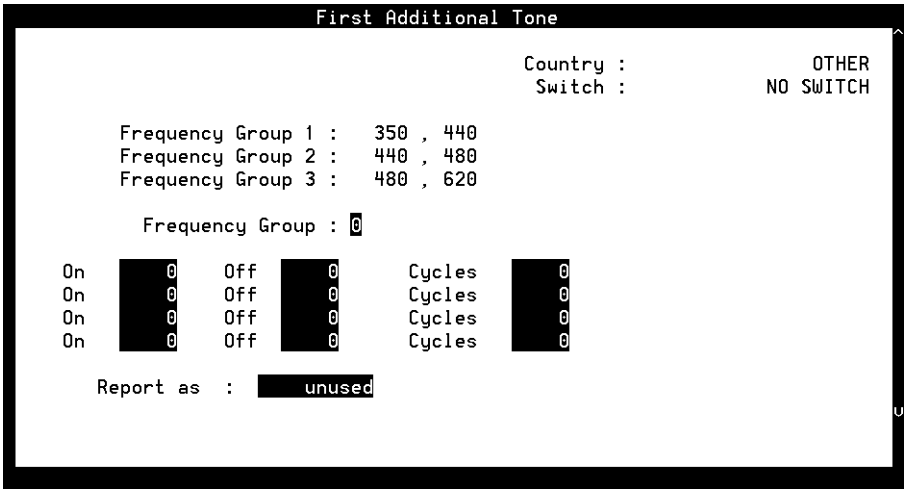


Figure E-9. Example of Additional Tone Window — First Additional Tone

3. In the `Frequency Group:` field, select one of the frequency groups (1, 2, or 3) displayed at the top of the window for the system to use for this tone (See Table E-11).

   NOTE:
   These groups are assigned on the Frequency Specification window (see "Setting Frequencies and Frequency Groups" above).

4. Enter values in the `On`, `Off`, and `Cycles` fields (see Table E-11), as necessary to represent the tone cadence. (See the examples following Table E-11 for information on how to represent the cadence.)

   NOTE:
   If you set stutter tone, be sure the timing used for continuous tone (minimum on duration) matches the timing used for continuous tone on the dialtone screen. For example, if dialtone is set as continuous tone, minimum 2 seconds, then stutter tone might be 200 msec on, 200 msec off (3 cycles) followed by continuous tone, minimum 2 seconds.

5. Enter the appropriate tone name in the `Report as:` field (see Table E-12), corresponding to the additional basic tone you are defining. For example, if you are defining an additional dial tone, enter **dial**.

6. Press F3 (SAVE).

   The system displays the following message:

   `Do you wish to continue with this change (Y/N)?`

7. Enter y

   The system displays the following message:

   ```
   Your changes been saved. You need to stop and start the
   Voice System to make these changes active.
   ```

8. Press F1 (ACKNOWLG MESSAGE).
9. Do you want to define another additional tone?
   - If no, press F6 (CANCEL) five times to return to the Lucent INTUITY main menu. You have completed this procedure.
   - If yes, do the following:
     a. Press F6 (CANCEL) to return to the Switch Tones menu.
     b. Repeat Steps 2 through 9 for the tone you selected.

Table E-12. Additional Tone Windows— Field Descriptions

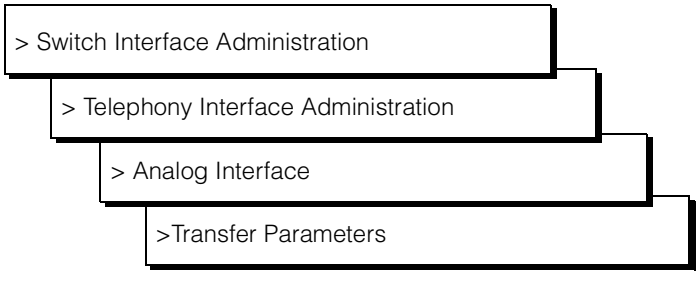
Field	Description	Values
NOTE: These field descriptions apply to all windows used for setting the three additional call progress tones, including the First Additional Tone, Second Additional Tone, and Third Additional Tone windows.		
`Country`	See Table E-11.	
`Switch`		
`Frequency Group 1:`		
`Frequency Group 2:`		
`Frequency Group 3:`		
`On`		
`Off`		
`Cycles`		
`Report as:`	Specifies the type of tone you are defining.	■ Busy ■ Dial ■ Ringback ■ Reorder ■ Stutter

Setting Transfer Parameters

Use this procedure to set the transfer parameters for the integration. Currently the Lucent INTUITY system supports only blind transfers. Transfers are also administered on the AUDIX SYSTEM-PARAMETERS FEATURES screen. (See Chapter 7, “Initial Administration and Test for Voice Messaging and the Optional Language Feature,” in the *System Installation* book for your platform.) On that screen, the transfer type must be specified as enhanced for DCIU switch integrations, in which case the Transfer Parameters window described here does not apply. For all other switch integrations the transfer type is specified as basic on the AUDIX screen, and the Transfer Parameters window here must be administered.

NOTE:
The Lucent INTUITY system supports only basic (blind) transfers. Intelligent transfers are not currently supported.

1. Starting at the Lucent INTUITY main menu, select



The system displays the Transfer Parameters window (Figure E-10). If the window has been previously administered, the system displays the current values.

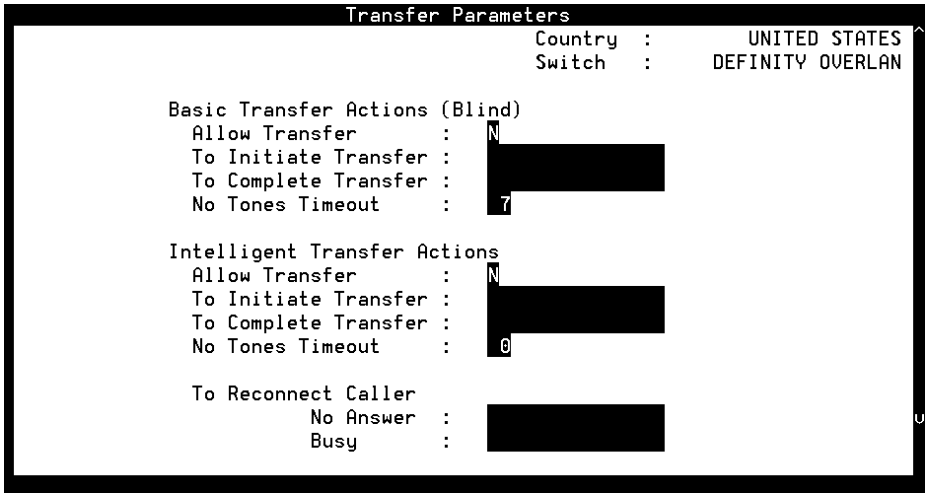


Figure E-10. Transfer Parameters Window

2. Enter the dial sequence necessary to initiate blind transfers in the `To Initiate Transfer:` field (see Table E-13).
3. Enter the dial sequence necessary to complete blind transfers in the `To Complete Transfer:` field (see Table E-13).
4. Enter the dial sequence necessary to the sequence needed by the switch to reconnect a caller after a no tones timeout in the `No Tones Timeout:` field (see Table E-13).
5. Press F3 (SAVE).

   The system displays the following message:

   `Do you wish to continue with this change (Y/N)?`
6. Enter **Y**
7. Press F6 (CANCEL) four times to return to the Lucent INTUITY main menu.

Table E-13. Transfer Parameters Window— Field Descriptions

Field	Description	Values
Country:	Displays the country set on the Switch Selection window (Figure E-1).	Display only.
Switch:	Displays the switch type set on the Switch Selection window.	Display only.
Basic Transfer Actions (Blind)		
Allow Transfer:	Indicates whether blind transfer is allowed.	■ Y to allow ■ N to prohibit
To Initiate Transfer:	Specifies the sequence needed by the switch to begin blind call transfers.	■ F — Switch hook flash. ■ W — Wait for dial tone. ■ P — Pause (waits for approximately 5 seconds). ■ [0-9, #, *] — Transmit that touch-tone digit. ■ H — Hang up. ■ S — Wait for stutter tone. ■ I — Truncate leading digits.
To Complete Transfer:	Specifies the sequence needed by the switch to end blind call transfers.	
No Tones Timeout:	Specifies the sequence needed by the switch to reconnect a caller during a blind call transfer if the called number is no tones timeout.	
Intelligent Transfer Actions		
Allow Transfer:	**NOTE:** These fields are not used for the Lucent INTUITY system.	
To Initiate Transfer:		
To complete Transfer:		
No tones Timeout:		
To Reconnect Caller		

Continued on next page

Table E-13. Transfer Parameters Window— Field Descriptions — *Continued*

Field	Description	Values
No Answer:	**NOTE:** These fields are not used for the Lucent INTUITY system.	
Busy:		
No Tones Timeout:		

Country Default Settings

This section lists the values used as default settings for various countries for the switch tones and analog parameters. These are the values that the Lucent INTUITY system uses when you select and set a country on the Country Selection screen.

To set a parameter to a different value:

1. Verify that the parameter is not restricted. If the parameter is restricted, you may not change the value on the Lucent INTUITY system.
2. Verify that your new setting is permitted.

Argentina

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

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

Australia

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

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

Belgium

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

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

Brazil

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

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

Canada

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

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

Colombia

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

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

France

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

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

Germany

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

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low-Level Group (dBm)	-8	yes
DTMF On-time (ms)	100	yes
DTMF Off-time (ms)	100	yes
Clipping threshold (dBm)	-11	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-11	yes
CPT detect minimum (dBm)	-25	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Greece

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

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

Hong Kong

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

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

India

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

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

Japan

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

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

Luxembourg

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

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

Mexico

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

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

Netherlands

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

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

New Zealand

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

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

Singapore

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

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

Spain

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

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-6	yes
DTMF Low Level Group (dBm)	-8	yes
DTMF On-time (ms)	80	yes
DTMF Off-time (ms)	160	yes
Clipping threshold (dBm)	-10	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-10	yes
CPT detect minimum (dBm)	-25	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	300	no
Input volume	4000	no
Output volume	1000	no

Thailand

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

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

United Kingdom

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

Parameter	Default Value	Restricted?
Answer delay (rings)	0	no
DTMF High Level Group (dBm)	-11	yes
DTMF Low Level Group (dBm)	-13	yes
DTMF On-time (ms)	80	yes
DTMF Off-time (ms)	80	yes
Clipping threshold (dBm)	-13	yes
Clipping duration (ms)	500	yes
Clipping limit (dBm)	-9	yes
CPT detect minimum (dBm)	-35	yes
Energy detect minimum (dBm)	-38	yes
Post onhook delay (ms)	2000	no
Post offhook delay (ms)	1500	no
Wink duration (ms)	80	no
Input volume	4000	no
Output volume	1000	no

United States

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

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

Switch Administration for INTUITY Lodging

F

Overview

At this point in the installation, you have completed the switch integration procedures required to integrate the switch with the basic Lucent INTUITY system. If the Lucent INTUITY system includes the optional lodging feature, you must now perform additional switch administration as outlined in this chapter.

Purpose

The purpose of this chapter is to provide the procedures you need to administer the switch to operate with the Lucent INTUITY Lodging option feature package.

Hunt Group Administration

A hunt group is a set of extension numbers assigned to another single number. When a call goes to this number a programmed search of the hunt group is made to deliver the call to a member of the set that is not busy. For example, when two calls are made to the hunt-group extension, they are reconnected to two free extensions from the set. Hunt groups are a commonly used switch feature. Your switch probably has hunt groups already assigned.

You will need to configure a hunt group for calls to the Lucent INTUITY system. Calls to the number serving the hunt group will then be redirected by the hunt group to the several Lucent INTUITY system voice ports.

1. Administer your switch to create a hunt group for your Lucent INTUITY system.
2. Have the voice ports on the Lucent INTUITY MAP computer wired to the switch ports that terminate the hunted extensions. Wire them as described in Installation book for your platform.

Message-Retrieval Administration

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

Message Retrieval in Lodging Systems without AUDIX

1. Give the Lucent INTUITY hunt group number to subscribers to your system to use for message retrieval.

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. Give the Lucent INTUITY hunt group number to your system's subscribers to use for message retrieval from the AUDIX application.

Retrieval from the Lodging Application

1. Administer on your switch an extension number that is 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 this number so that the Lucent INTUITY hunt group is in its coverage path for all calls.
3. Give the Lodging message-retrieval number to subscribers to your system to use for message retrieval from the Lodging application.

Alternate Message Retrieval Method

Besides the message-retrieval options offered above, you can allow guests to log in from any extension to any mailbox for which they have a password. A guest calls a particular number to access this service then enters an extension number and a password to get messages in the mailbox of the extension of interest.

To provide such a service:

1. Administer on your switch an extension number that is not associated with a switch port. (These are often called phantom or dummy numbers.) This number is to be used to retrieve messages from a remote telephone.
2. Configure this number so that the Lucent INTUITY hunt group is in its coverage path for all calls.
3. If your switch has a password capability, assign a password to the new extension.
4. Assign the service ldg_ni_vmto the new extension.
   a. Log in to the Lucent INTUITY system as sa or craft.
   b. Begin at the Lucent INTUITY main menu (xxxxx) and select.

```
>Voice System Administration
    >Voice Equipment
```

   c. From the Voice Equipment window, press F8 then F3.
   d. Select

```
> Services to Called Numbers
```

   e. Press F2 and select ldg_ni_vm.
   f. Enter the called number that was administered on the switch for this purpose.
   g. Press F3.

      The system displays a command-output screen confirming your choice.

h. Press F5 three times to exit to the Voice Equipment window.

5. If you want the phantom extension to be available from outside your DID number.
6. Give the Lodging message-retrieval number to subscribers to your system to use for message retrieval from the Lodging application.

Voice Mail Administration

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

To provide such a service:

1. Administer on your switch an extension number that is not associated with a switch port. (These are often called phantom or dummy numbers.) This number is to be used to send voice messages to your subscribers.
2. Configure this number so that the Lucent INTUITY hunt group is in its coverage path for all calls.
3. Assign the service ldg_ni_vmto the new extension.
   a. Log in to the Lucent INTUITY system as sa or craft.
   b. Begin at the Lucent INTUITY Administration menu and select
   c. From the Voice Equipment window, press F8 then F3.
   d. Select

```
> Services to Called Numbers
```

   e. Press F2 and select ldg_ni_ca.
   f. Enter the called number of your choice.
   g. Press F3. the system displays a command-output screen confirming your choice.
   h. Press F5 three times to exit to the Voice Equipment window.
4. If you want the phantom extension to be available from outside your system, have the extension assigned to a DID number.
5. Give the Lodging voice-mail number to subscribers to your system so they can send voice mail among themselves.

Call Coverage Path

A coverage path directs the switch to transfer unanswerable calls to a hunt group, to a service, or to another extension. These may be calls that are unanswered or calls to a busy extension. When a call goes to coverage, the switch forwards the called number to the Lucent INTUITY system. The Lucent INTUITY system discovers that the called number is administered as a particular subscriber's extension and treats the call as one to be answered and recorded. Depending on how the extension is listed, the call may be answered by either the AUDIX or Lodging application.

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

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 to the Lucent INTUITY hunt group, then calls received while the Do-Not-Disturb feature is active will be recorded for later perusal.

The Lucent Technologies Definity G3 switches offer an example of a Do Not Disturb feature. In this case, switch administration for the feature is covered in the implementation book for your switch.

Cut-to-Service

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

Some switching systems make it possible to define these extensions to be a set and to change the coverage path for all guests at a single stroke. Most switching systems make it possible to change the coverage path for guest extensions one extension at a time. You may choose to use either method.

Gradual Cut-to-Service

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

The advantages of this method include:

- Attendants can learn to cope with the new system without having to answer the questions of large numbers of guests.
- No guest has to learn both the old system and the new one. Current guests use the old system, new guests use the Lucent INTUITY Lodging system.
- You can assign custom passwords and language options to each guest as the guest is checked in.

Perform a gradual cut-to-service as follows:

1. Administer your switch to send call coverage for the guest's telephone to the Lucent INTUITY hunt group.
2. Check in each new guest as described in *INTUITY Lodging Administration and Feature Operations*.

One-Step Cut-to-Service

On switches where a coverage path is separately defined and then applied to a class of stations, it is possible to subject all guest stations to Lucent INTUITY Lodging at once. Using this cut-to-service strategy, you change all of the guest stations to Lucent INTUITY Lodging system at the same time.

The advantages of this method include:

- Since Lucent INTUITY Lodging is brought up in one step, attendants must only cope with one call-answering system at a time.
- The cut-to-service job is over at once. Guests need not wonder why some guests have one service and some another.
- You can assign reasonable coverage options to all guests at once and modify administration for the few that have unusual requirements.

Perform a one-step cut-to-service as follows:

1. Administer, by means of Lucent INTUITY Lodging administration, the options your guests will enjoy.
2. Make sure your guests and attendants know when the change will take place and that they have some idea of how their new service will work.
3. On your switch, determine the coverage path that applies to your guests' stations.
4. Access your switch administration method for changing a coverage path. Set the new coverage path for your guests' stations to the Lucent INTUITY hunt group.

Glossary

Numerics

5ESS Switch
A central office switch manufactured by Lucent Technologies that can be integrated with the Lucent INTUITY™ system.

A

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

ACA
See *automatic circuit assurance*.

ACD
See *automatic call distribution*.

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

ADAP
See *administration and data acquisition package*.

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

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

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

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

ADU
See *asynchronous data unit*.

alarm log
A list of alarms that represent all of the active or resolved problems on a Lucent 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
Consisting of alphabetic and numeric symbols or punctuation marks.

ALT
See *assemble, load, and test.*

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

AMIS
See *Audio Messaging Interchange Specification*.

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

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

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

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

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

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

API
See *application programming interface.*

application
A computer software program.

application identifier
A two-letter code used in the administrator's log to identify the application or subsystem for which an alarm is being generated. There are 11 application identifiers as follows: CA (Call Accounting), EL (Enhanced List), LF (Lodging Fax), LG (Lucent INTUITY Lodging), ML (MERLIN LEGEND), MT

(Maintenance), NW (Digital Networking), SW (Switch Integration), VM (Voice Messaging), VP (Voice Processing), and VR (Voice Response).

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

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

ASP
advanced signal processor

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

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

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

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

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

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

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

AUDIX
See *Audio Information Exchange*.

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

automated attendant
A Lucent INTUITY system feature that allows users 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 Lucent INTUITY users to the system. See also *call-distribution group*.

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

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

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

autoscan
See *automatic message scan*.

AWG
See *American wire gauge.*

B

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

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

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

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

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

basic rate access
See *basic rate interface*.

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

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

BIOS
See *basic input/output system*.

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

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

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

BRI
See *basic rate interface*.

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

BSC
See *binary synchronous communications*.

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

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

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

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

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

C

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

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

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

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

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

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

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

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

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

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

call delivery
See *message delivery*.

call-distribution group
The set of analog port cards on the switch that connects switch users to the Lucent 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 management system (CMS)
An inbound call distribution and management reporting package.

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

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

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

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

card cage
An area within the Lucent 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.

CAS
See *call accouting system*.

CCA
See *call classification analysis.*

CDH
See *call data handler process*.

CDR
See *call detail recording*.

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

CED tone
See *called tone*.

CELP
See *code excited linear prediction*.

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

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

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

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

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

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

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

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

CMS
See *call management system*.

CNG tone
See *calling tone*.

CO
See *central office*.

COR
See *class of restriction*.

COS
See *class of service*.

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

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

comcode
A numbering system for telecommunications equipment used by Lucent Technologies. Each comcode is a 9-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-key or two-key touch tones that control a mailbox activity or function.

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

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

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

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

COS
See *class of service*.

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

CPU
See *central processing unit*.

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

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

CSI
See *called subscriber information*.

CTS
See *clear to send*.

D

DAC
See *dial access code*.

database
A structured set of files, records, or tables. Also, a collection of filesystems and files in disk memory that store the voice and nonvoice (program data) necessary for Lucent 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 a Lucent INTUITY system and a Lucent switch. The DCIU is a high-speed synchronous data link that communicates with the common control switch processor over a direct memory access (DMA) channel that reads data directly from FP memory.

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

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

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

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

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

DBP
See *data base processor*.

DCE
See *data communications equipment*.

DCIU
See *data communications interface unit*.

DCP
See *digital communications protocol*.

DCS
See *distributed communications system*.

debug
See *troubleshooting*.

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

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

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

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

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

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

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

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

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

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

DID
See *direct inward dialing*.

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

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

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

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

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

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

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

display terminal
A data terminal with a screen and keyboard used for displaying Lucent 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*.

DNIS
See *dialed number identification service*.

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

DSP
See *digital signal processor*.

DSU
See *data service unit*.

DTE
See *data terminal equipment*.

DTMF
See *dual tone multifrequency*.

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

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

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

E

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

ELA
See Enhanced-List Application.

electronic mail
See *e-mail*.

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

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

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

endpoint
See *fax endpoint*.

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

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

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

equipped/unequipped
The state of a networking channel that indicates whether Lucent 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 within the system and possibly suggesting how to correct it.

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

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

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

ESD
See *electrostatic discharge*.

ESDI
See *enhanced serial data interface*.

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

F

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

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

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

fax
See *facsimile*.

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

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

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

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

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

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

filename
Alphanumeric characters used to identify a particular file.

file redundancy
See *mirroring*.

file system
A collection of related files (programs or data) stored on disk that are required to initialize a Lucent INTUITY system.

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

F key
See *function key*.

FNPAC
See *foreign numbering-plan area code*.

FOOS
See *facility out-of-service*.

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

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

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

FRL
See *facilities restriction level*.

function
Individual steps or procedures within a mailbox activity.

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

FX
See *foreign exchange*.

G

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

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

GOS
See *grade of service*.

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

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

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

H

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

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

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

help
A command run by pressing HELP or CTRL ? on a Lucent 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*.

host switch
The switch directly connected to the Lucent INTUITY system over the data link. Also, the physical link connecting a Lucent 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.

I

I/O
Input/output.

IDI
See *isolating data interface*.

IMAPI
See *INTUITY messaging application programming interface*.

INADS
See *initialization and administration system*.

information service
See *bulletin board*.

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

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

initialize
To start up the system for the first time.

input
A signal fed into a circuit or channel.

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

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

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

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

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

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

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

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

IRQ
See *interrupt request*.

ISDN
See *integrated services digital network*.

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

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

J

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

K

L

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

LAN
See *local area network*.

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

LCD
See *liquid crystal display*.

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

LED
See *light emitting diode*.

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

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

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

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

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

local AUDIX machine
The Lucent INTUITY system where a user's INTUITY AUDIX mailbox is located. All users on this home machine are called *local users*.

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

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

login
A unique code a user must enter to gain approved access to the Lucent INTUITY system. See also *password*.

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

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

LWC
See *leave word calling*.

M

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

mailbox
A portion of disk memory allotted to each Lucent INTUITY system user for creating and storing outgoing and incoming messages.

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

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

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

MANOOS
See *manually out-of-service*.

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

MAP
See *multi-application platform*.

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

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

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

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

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

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

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

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

Message Manager
See *INTUITY Message Manager*.

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

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

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

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

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

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

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

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

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

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

MPDM
See *modular processor data module*.

MT
Maintenance application identifier. See *application identifier*.

MTBF
See *mean time between failures*.

multi-application platform (MAP)
The computer hardware platform used by the Lucent INTUITY system.

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

MWI
See *message waiting indicator*.

N

networking
See *INTUITY AUDIX Digital Networking*.

networking prefix
A set of digits that identifies a Lucent INTUITY machine.

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

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

NPA
See *numbering plan area*.

NT
Networking application identifier. See *application identifier*.

MWL
See *message waiting lamp*.

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

O

off-hook
See *switch hook*.

on-hook
See *switch hook*.

on-line help
A Lucent INTUITY system feature that provides information about user interface windows, screens, and menus by pressing a predetermined key. See also *help*.

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

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

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

OS
See *operating system*.

OSI
See *open systems interconnection*.

outcalling
A Lucent INTUITY system feature that allows the system to dial users' numbers to inform them they have new messages.

outgoing mailbox
A storage area on the Lucent INTUITY system where users can keep copies of messages for future reference or action.

P

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

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

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

PBX
See *private branch exchange*.

PC
See *power converter*.

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

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

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

personal fax extension
See *secondary extension*.

PI
See *processor interface*.

PIB
See *processor interface*.

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

PMS
See *property management system*.

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

POST
See *power-on self test*.

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

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

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

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

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

private mailing list
A list of addresses that only the Lucent INTUITY system user who owns it can access.

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

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

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

programmed function key
See *function key*.

property management system (PMS)
A product used by lodging establishments to automate the management of guest records, reservations, room assignments, and billing. In an integrated PMS environment, special software links the PMS to the Lucent INTUITY Lodging system so that both systems share a common set of messages and commands.

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

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

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

R

RAM
See *random access memory*.

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

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

reboot
See *boot*.

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

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

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

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

remote service center
A Lucent or Lucent-certified organization that provides remote support to Lucent 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 in to your system and remedy problems. See also *remote maintenance.*

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

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

REN
See *ringer equivalence number*.

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

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

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

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

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

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

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

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

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

ROM
See *read-only memory*.

RS-232
See *EIA interface*.

RTS
See *request to send*.

RUK
See *reusable upgrade kit*.

S

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

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

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

SCSI
See *small computer system interface*.

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

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

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

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

SID
See *switch integration device*.

SIMM
See *single in-line memory module*.

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

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

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

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

SMDI
See *station message desk interface*.

SMDR
See *station message detail recording*.

SMSI
See *simplified message service interface*.

SP
signal processor

SSP
scalable signal processor

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

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

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

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

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

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

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

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

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

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

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

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

switch network
Two or more interconnected switching systems.

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

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

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

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

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

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

system configuration
See *configuration*.

T

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

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

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

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

TDD
See *telecommunications device for the deaf*.

TDM
See *time division multiplexing*.

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

terminal
See *display terminal*.

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

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

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

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

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

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

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

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

T/R
See *tip/ring*.

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

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

TTS
Text-to-Speech

U

UCD
See *uniform call distribution*.

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

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

unequipped
See *equipped/unequipped*.

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

uniform call distribution (UCD)
The type of call-distribution group (or hunt group) of analog port cards on some switches that connects 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*.

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

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

upgrade
An installation that moves a Lucent INTUITY system to a newer release.

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

UPS
See *uninterruptable power supply*.

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

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

user population
A combination of different types of users on which Lucent INTUITY configuration guidelines are based.

V

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

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

voice link
The Lucent 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 information stored by the Lucent INTUITY system on disk memory. Also called *voice mail*.

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

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

voicing
1. Speaking a message into the Lucent INTUITY system during recording. 2. Having the system play back a message or prompt to a user.

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

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

W

WAN
See *wide area network*.

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

window
That portion of the Lucent INTUITY user interface through which you can view system information or status.

Index

A

B

C

D

E

F

G

H

I

L

M

N

O

P

Q

R

S

T

U

V