Lucent Technologies
Bell Labs Innovations

MERLIN MAGIX™
Integrated System
Release 1.0

System Manager's Quick Reference

Notice

Every effort has been made to ensure that the information in this guide is complete and accurate at the time of printing. Information, however, is subject to change. See Appendix A, "Customer Support Information," in *System Programming* for important information.

Your Responsibility for Your System's Security

Toll fraud is the unauthorized use of your telecommunications system by an unauthorized party—for example, persons other than your company's employees, agents, subcontractors, or persons working on your company's behalf. Note that there may be a risk of toll fraud associated with your telecommunications system, and, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

You and your System Manager are responsible for the security of your system, such as programming and configuring your equipment to prevent unauthorized use. The System Manager is also responsible for reading all installation, instruction, and system administration documents provided with this product in order to fully understand the features that can introduce risk of toll fraud and the steps that can be taken to reduce that risk. Lucent Technologies does not warrant that this product is immune from or will prevent unauthorized use of common-carrier telecommunication services or facilities accessed through or connected to it. Lucent Technologies will not be responsible for any charges that result from such unauthorized use. For important information regarding your system and toll fraud, see Appendix A, "Customer Support Information," in *System Programming*.

Federal Communications Commission Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense. For further FCC information, see Appendix A, "Customer Support Information," in *System Programming*.

Canadian Department of Communications (DOC) Interference Information

This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le Présent Appareil Numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A préscrites dans le réglement sur le brouillage radioélectrique édicté par leministère des Communications du Canada.

Year 2000 Compliance

The MERLIN MAGIX Integrated System is certified to be Year 2000 compliant. Additional information on this certification, and other issues regarding Year 2000 compliance, is available online at http://www.lucent.com/enterprise/sig/yr2000.

Trademarks

Ordering Information

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            Indianapolis, IN 46219-1385

Order: Document No. 555-710-119
            Comcode: 108522335
            Issue 1, October 1999

For more information about Lucent Technologies documents, refer to the section entitled
"Related Documents" in "About This Guide" in *System Programming*.

Support Telephone Number

In the continental U.S., Lucent Technologies provides a toll free customer helpline 24
hours a day. Call the Lucent Technologies Helpline at **1 800 628-2888** or your Lucent
Technologies authorized dealer if you need assistance when installing, programming, or
using your system. Outside the continental U.S., contact your local Lucent Technologies
authorized representative.

Network Engineering Group

For assistance in designing a private network with DEFINITY ECS or DEFINITY ProLogix,
call the Network Engineering Group at **1 888 297-4700**.

Lucent Technologies Corporate Security

Whether or not immediate support is required, all toll fraud incidents involving Lucent
Technologies products or services *should be reported* to Lucent Technologies Corporate
Security at **1 800 821-8235**. In addition to recording the incident, Lucent Technologies
Corporate Security is available for consultation on security issues, investigation support,
referral to law enforcement agencies, and educational programs.

Lucent Technologies Fraud Intervention

If you *suspect you are being victimized* by toll fraud and you need technical support or
assistance, call BCS National Service Assistance Center at **1 800 628-2888**.

Warranty

Lucent Technologies provides a limited warranty on this product. Refer to "Limited
Warranty and Limitation of Liability" in Appendix A, "Customer Support Information," of
System Programming.

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System Information Sheet

If you have a problem with your system, you may be able to resolve it quickly and easily by following the appropriate troubleshooting procedure in this guide. If the problem persists or is not listed in this guide, call the Lucent Technologies Helpline at 1 800 628-2888 for further assistance; consultation charges may apply.

When you call the Helpline, the Lucent Technologies representatives can better help you if you have available the following system information and troubleshooting information. Also, obtain system planning Form 2a, System Numbering: Extension Jacks, and Form 2c, System Numbering: Line/Trunk Jacks.

System Information

Company Name (as on equipment order) _____

Account Number (if known) _____

Customer Identification Number _____

Main Listed Telephone Number (for this location) _____

Lucent Technologies Contact Name and Telephone Number _____

Troubleshooting Information

Type of equipment experiencing the problem (for example, MERLIN MAGIX Integrated System, MERLIN Messaging System, or a particular system component).

System Information Sheet—*Continued*

A description of the problem:

_____

_____

_____

Has this problem occurred before?

_____

_____

_____

Have you attempted to troubleshoot the problem?

_____

_____

_____

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1 Overview

Welcome

This quick reference is designed to help you administer the MERLIN MAGIX™ Integrated System. It provides summary programming procedures for everyday tasks you perform in order to manage your system.

This chapter provides a system overview that describes the major aspects of the system, a programming overview that explains the types of programming available for the system, and a description of the methods available to implement the programming. Procedures to start and end system programming are also provided in this chapter.

The remaining chapters in the quick reference are organized into categories designed to help you locate a task you need to perform. For example, if you need to add a telephone, you would look for the procedure in Chapter 3, "Managing Lines and Telephones." If you need to make a change to the system that involves an operator's console, you would look for the procedure in Chapter 4, "Managing DLC and QCC Operator Positions." You would typically refer to this quick reference whenever you need to perform a few programming tasks, such as assigning a new operator position, and then programming features for the operator's telephone. You should use the Table of Contents to locate the desired task.

Prior to using this quick reference, you should become familiar with *System Programming*, which provides detailed programming procedures for all programming tasks that can be performed for the system.

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Glossary of Abbreviations

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Glossary of Abbreviations

Abbreviations that appear in this quick reference are provided in the following table.

Abbreviations

Abbreviation	Denotes:
ARS	Automatic Route Selection
BRI	Basic Rate Interface
DID	Direct Inward Dial
DLC	Direct Line Console
GS	Ground-Start
ICOM	Intercom
ID	Caller Identification
LS	Loop-Start
MFM	Multi-Function Module
PBX	Private Branch Exchange
PRI	Primary Rate Interface
QCC	Queued Call Console
SA	System Access

System Overview

The MERLIN MAGIX Integrated System is a switch located on a company's premises, which provides access to powerful features and advanced telephone network applications and services. The system can handle voice and data calls simultaneously, and voice features can enhance the use of data communications. The system accommodates businesses with needs ranging from only a few telephones to as many as 200 telephones. Its modular design allows for easy expansion. The following figure illustrates a MERLIN MAGIX system connected to telephones, applications, and auxiliary equipment.

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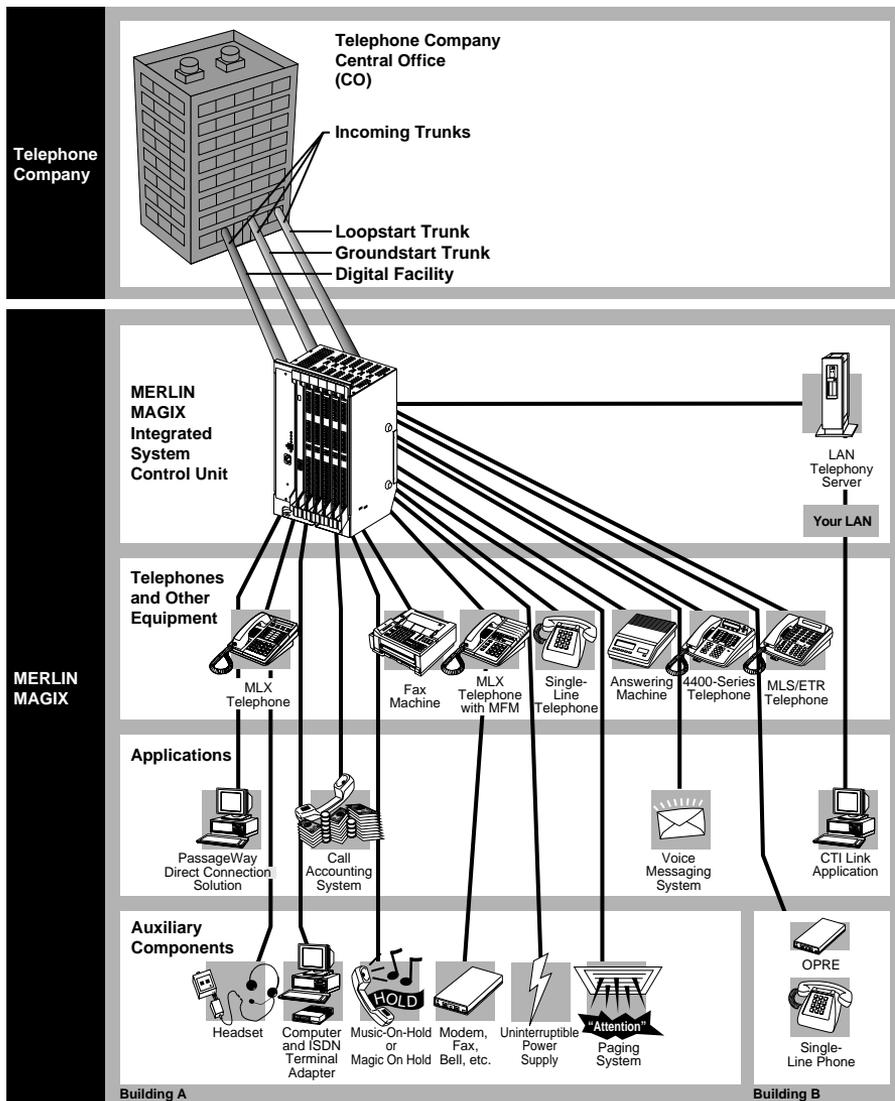
Incoming Trunks

Trunks are the telephone company's facilities, provided by the central office to carry voice and/or data communications. There are a variety of trunks, each with different capabilities, as described in the following table. toll free

Incoming Trunks

Trunk Type	Description
Loop-Start	Provides incoming and outgoing calls intended primarily for key systems and older PBXs. These are the simplest (often the least expensive) and most common facilities in the nationwide telephone network. Although they are not appropriate for some situations, they are necessary for others (for example, some caller identification services).
Ground-Start	Provides a signal at the beginning and end of incoming and outgoing calls to determine the availability of a trunk before the central office routes an incoming call on it. Also, when either the caller or the called party hangs up, the entire circuit is disconnected and dropped.
Tie	Provides private lines that directly connect two systems. Using a tie trunk, a user on one system can call an extension on another system by dialing an access code and the extension number or simply the extension number. In Hybrid/PBX mode only, tandem tie trunks, either analog or T1-emulated, can be used for networking. In this case, the user dials only the non-local extension number without an access code. In more complex tie trunk configurations, a person can tie into another system and use a trunk that does not exist on his or her own system.
Direct Inward Dial (DID)	Provides fast access to specific individuals; incoming DID calls can be routed directly to an extension or Calling Group without system operator assistance.

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Incoming Trunks <BlueItalic9>Continued<BlueDingbat9>Ø

Trunk Type	Description
T1	In T1 voice operation, a line can be programmed through the system, without the services of a telephone company installer, to emulate a ground-start, loop-start, tie, or DID trunk. T1 operation also gives you access to special services, such as inbound 800 or WATS service for incoming, toll free service for voice calls.
	T1 data operation allows high-speed data communications over the public switched network; this is called *T1 Switched 56 service*. It also provides data tie lines to connect one MERLIN MAGIX system to another or to a DEFINITY system. A T1 data operation line is called a channel.
Primary Rate Interface (PRI)	A digital facility that provides the equivalent of 24 lines, called channels, 23 of which are B-channels. Each B-channel can dynamically provide voice and data services; one D-channel carries signaling information for the 23 B-channels.
Basic Rate Interface (BRI)	A digital facility that provides the equivalent of three (3) lines, called channels, two of which are B-channels. Each B-channel can dynamically provide voice and data services; one D-channel carries signaling information for the two B-channels.

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Modes of Operation

The system operates in one of three modes:

- **Key Mode**. The simplest way to provide people with more than one line from a telephone. Easy to use. Recommended for smaller systems.

- **Hybrid/PBX Mode**. Especially useful where toll fraud and security are a concern. Provides cost-effective call routing, especially useful for special-purpose network services. Recommended for medium to larger systems.

- **Behind Switch Mode**. Used when the system is connected to a system such as DEFINITY. May be appropriate for users who are part of a large organization—for example, a department within a company.

The following table outlines the primary differences among the modes.

Modes of Operation

	Key Mode	**Hybrid/PBX Mode**	**Behind Switch Mode**
Description	Telephones have multiple buttons (or keys) labeled with telephone numbers. Every button corresponds directly to an outside line. Different buttons (ICOM buttons) are used for inside calls.	Outside trunks are grouped in pools for shared use; the system automatically selects an available outside trunk. People use the same button to make both inside and outside calls.	Used when the system (called the local system) is connected to a larger PBX or Centrex system (called the host system). One outside line (a prime line) is assigned to each telephone. The host system provides the interface to outside lines and some features.

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	Key Mode	**Hybrid/PBX Mode**	**Behind Switch Mode**
Types of Trunks	Ground-start Loop-start Tie DS1 (T1 only) BRI	Ground-start Loop-start Tie DS1 (PRI and T1) DID BRI Private network trunks	Ground-start Loop-start Tie
Number of Extensions: Fewer than 50 More than 50	Good Not recommended	Good Good	Good Good up to 80
Types of Buttons	A line button for each outside line. Up to 10 ICOM buttons for inside calls.	Up to 10 SA buttons. Pool button(s) to access a specific pool(s). (Optional) A Personal Line button for dedicated use of a specific outside trunk.	For multiline telephones: Multiple prime line buttons. Up to 10 ICOM buttons.
User Access to Outside Lines/Trunks	Choosing a specific line button.	Dialing a code (usually 9) from an SA button	Dialing the host system's dial-out code (usually 9) from a prime line button.
Types of Operator Consoles	DLCs only	DLC, QCC, or a combination of both	DLCs only

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	Key Mode	**Hybrid/PBX Mode**	**Behind Switch Mode**
Recommended Use	Smaller systems (fewer than 50 extensions)	Medium to large systems (more than 50 extensions)	For users who are part of a large organization—for example, a department within a company or companies that subscribes to Centrex services for most features.
Comments	It is recommended that users who need to access individual lines have multiline telephones. Line assignments can be customized by telephone or groups of telephones. For example, you can assign tie trunks only to the telephones where they are needed.	Provides the most efficient use of outside trunks. The Automatic Route Selection (ARS) feature can be programmed for the cost-effective use of pools and the greatest protection against toll fraud. Provides greater functionality for single-line telephones than other modes. Fewer line buttons required for multiline telephone users.	Users can have access to most features of both the local system and the host system. Single-line telephones can be used.

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System Components

The system components include the control unit, telephones, system operator consoles, and line/trunk and extension modules described in the following table.

System Components

System Component	Description
Control Unit	Circuitry that manages the switching activities of the telephone company's trunks and your system. It consists of carriers into which modules (circuit packs) are inserted. The module types include a processor module (the "brain" of the system), a power supply module, and a variety of line/trunk and/or extension modules with jacks for connecting the incoming trunks and the telephones or adjuncts. See the "Line/Trunk and Extension Modules" on page 121 in Appendix A for a description of the modules.
Telephones	Include single-line, cordless, wireless, MLS, and ETR telephones, as well as digital 4400-Series and MLX telephones, which offer a variety of features and advanced capabilities. Most 4400-Series and MLX telephones have displays that show call information, list features for using the telephone, and provide menu-driven programming instructions. The 4400-Series telephones include the 4400, 4400D, 4406D+, 4412D+, 4424D+, and 4424LD+. The MLX telephones include the MLX-5®, MLX-5D®, MLX-10®, MLX-10D®, MLX-10DP®, MLX-16DP®, MLX-20L®, and MLX-28D®. The MLS telephones include the MLS-6®, MLS-12®, MLS-12D®, MLS-34D®, and MLS-18D®. The ETR telephones include the ETR-6, ETR-18, ETR-18D, and ETR-34D. Both the MLS and ETR® telephones use the ETR protocol. The Business Cordless 905 telephone and the TransTalk™ MDW 9031 telephone are also supported.

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System Component	Description
System Operator Consoles	Telephones programmed to handle a variety of operator functions. Types of consoles include: **Direct Line Console (DLC)**. Outside lines are assigned to individual buttons, and the console can have several calls ringing at the same time. The 4424D+, 4424LD+, MLX-20L, and MLX-28D telephones are the only telephones that can be assigned through system programming to function as a DLC. **Queued Call Console (QCC)**. Available only in Hybrid/PBX mode. Incoming calls wait in a queue for the operator and reach the QCC on a first-in, first-out basis, according to the call priority level assigned through system programming. Only one call rings at a time. The 4424LD+ and MLX-20L telephones are the only telephones that can be assigned through system programming to function as a QCC. The buttons on the QCC are factory-set with fixed features.
Line/Trunk and Extension Modules	Installed in the control unit, these provide jacks for connecting central office trunks and system telephones to the control unit. A system with a basic carrier has five slots for modules. Up to two expansion carriers can be added, each one providing six slots for modules. See for more details.

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Line/Trunk and Extension Modules

The system supports 16 different types of modules that vary in the types of lines/trunks that they support and the types of telephones or other equipment that can be connected to them. See "Line/Trunk and Extension Modules" on page 121 in Appendix A for a description of these modules.

Auxiliary Equipment

The system supports a variety of auxiliary equipment such as alerts, fax machines, and telephone headsets. See "Auxiliary Equipment" on page 128 in Appendix A for a list of available equipment.

Features and Programming Codes

The versatility and power of the system are due, in large part, to the variety of feature settings and services it can provide. The system provides traditional features, such as Transfer and Call Waiting, as well as advanced features, such as Coverage and Park. Through system programming, you can program features onto user's telephones; through extension programming, individual users can change their extension features to meet individual needs. See "Features and Programming Codes" on page 131 in Appendix A for a list of features and programming codes.

Applications

Numerous add-on products, called applications, are available to enhance the system. Appendix I, "Applications," in the *Feature Reference* provides a description of all available applications. See "Applications" on page 138 in Appendix A for a brief description of some of these applications.

System Capacities

See "System Capacities" on page 140 in Appendix A for a list of hardware and software capacities of the system.

Related Documents

See "Related Documents" on page 149 in Appendix A for a complete list of documents included in the MERLIN MAGIX documentation set. To order a document within the continental United States, contact the Lucent Technologies BCS Publications Center by calling 1 800 457-1235.

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Programming Overview

The MERLIN MAGIX Integrated System offers easy-to-use, menu-driven software for system programming. As part of the installation, your system was programmed with features, settings, and options selected by you or a representative from your company. The system programming software allows you to easily modify the system programming to accommodate your company's changing needs for such enhancements and modifications as upgraded lines, additional modules, and new extension programming.

There are three types of programming, as well as two ways, or methods, to perform the programming. The types of programming and methods of programming are described in the following sections.

Types of Programming

Three types of programming are available for the MERLIN MAGIX system:

- **System Programming**. This type of programming enables the System Manager to program features that affect all or most system users; it requires one of the following:

  — A system programming console which is an MLX-20L or 4424LD+ telephone connected to one of the first five jacks of the first MLX or TDL module in the control unit. For more information about the system programming console, see "System Programming Console" in Chapter 1, "Programming Basics," of *System Programming*.

  — A PC with Windows System Programming and Maintenance (WinSPM). WinSPM provides two interfaces for system programming—Quick Access and Standard SPM Mode. Quick Access provides a graphical user interface (GUI) for those tasks most commonly performed by the System Manager (for example, adding or deleting members of groups, performing system inventories, creating reports, administering multiple systems, making station labels shown on display telephones, and more). Pictorial representations of system components, such as modules and their vintages, and the creation of MLX or 4400-Series telephone button labels are available with WinSPM.

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> The Standard SPM Mode provides an emulation display of the system
> programming console. It allows basic SPM programming of the
> MERLIN MAGIX system and supports SPM programming for options
> not included in the GUI.
> WinSPM is supported in Windows 95, Windows NT, and Windows 98
> and is available on CD-ROM and floppy disks. WinSPM software can
> be used directly from the floppy disks or CD-ROM on your PC. If your
> PC has a hard disk, however, you should install WinSPM from either
> the floppy disks or CD-ROM onto the hard disk.

- **Extension Programming**. This type of programming enables individual
extension users and system operators (except for Queued Call Console
operators) to change their extension features to meet individual needs. For
details about extension programming, see the appropriate user and
operator guides.

- **Centralized Telephone Programming**. This type of programming enables
the System Manager to program any feature that can be programmed by
individual extension users or system operators. Some features can be
programmed only in centralized telephone programming. Centralized
telephone programming can be done on the programming console or
through WinSPM.

Methods of Programming

As System Manager, you primarily perform system programming and centralized
telephone programming. As previously explained, the other type of
programming—extension programming—is performed at each individual
telephone, usually by the telephone user.

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To perform system programming and centralized telephone programming, the
following two methods are available:

- Programming from the system programming console.

- Programming from a PC with WinSPM software.

NOTE *The PC procedures in Chapter 3 of this quick reference provide
programming procedures using WinSPM's Standard SPM Mode. For
more information about the Standard SPM Mode and the Quick Access
interface, see Chapter 2, "Programming with WinSPM," in* System
Programming.

Summary Programming Procedures

This quick reference provides summary programming procedures for
programming using both the system programming console and a PC with
WinSPM using the Standard SPM Mode. The Standard SPM Mode provides an
emulation display of the system programming console. Summary programming
procedures for the most common system management tasks are provided.

You should become familiar with the detailed information about programming
procedures provided in Chapter 1, "Programming Basics," in *System
Programming* before you use the summary programming procedures provided in
this quick reference.

The format of the summary programming procedures is as follows:

Console Procedure ▶ or More→Labeling→Grp Calling→Dial Calling Group
ext. no.→Enter→Drop→Enter label→ Enter→
Back→Back

PC Procedure PgUp → F1 → F4 →Type Calling Group ext. no.→ F10 →
Drop →Type label→ F6 → F5 → F5

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The arrows separate each step. The following table shows the typefaces that indicate what the step involves.

Typefaces Used in Summary Programming Procedures

Typeface Sample	Meaning
More	Select this option by pressing this imprinted button on the console.
GrpCalling	Select this menu option by using an unlabeled display button.
Dial ext. no.	Enter this information.
[PgUp]	In the system programming console emulation display on the PC, point to this key and click.
[F1]	In the system programming console emulation display on the PC, point to this function key and click.
[Drop]	In the column on the right side of the system programming console emulation display, point to this key and click.

For more information, refer to the following guides:

- For detailed programming information for all features and options available for the MERLIN MAGIX Integrated System, see Chapter 1, "Programming Basics," of *System Programming*.

- For information about the features, including important feature interactions, see the *Feature Reference*.

- For information about the planning forms, see *System Planning*. If you do not have this guide, contact your Lucent Technologies representative.

⚠️ **CAUTION:**
> Do not attempt to change either the system numbering plan or the system operating mode. Changing either of these could cause serious disruption of the system and would require significant time and effort to remedy. Also, do **not** use either the Maintenance or Restart options from the System Programming menus except when instructed to do so by a Lucent Technologies representative.

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Starting and Ending System Programming

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Starting and Ending System Programming

The information in this section explains how to display the system programming menu, navigate within the system programming screens, and exit system programming.

Displaying the System Programming Menu

To begin programming, perform one of the following to display the System Programming menu on the system programming console or PC with WinSPM software:

Console Procedure Menu→Sys Program→Back

PC Procedure Do the following:

1 On your desktop, double-click the WinSPM icon. (Depending on options selected during installation, you might select WinSPM from your Start Menu or Lucent Solutions folder.)

2 Enter your user name and password, then click OK. *The WinSPM main screen appears*.

3 On the toolbar on the left side of the WinSPM main screen, click the Connect button. *The Connection Selection screen appears.*

4 From the Connection Selection screen, click the site name for the site you want to connect to.

5 Click the Connection Type for the session, then click OK.

6 On the toolbar on the left side of the WinSPM main screen, click the Standard SPM icon. *The system programming console appears in the emulation window*.

7 Click $\boxed{\text{F1}}$, then $\boxed{\text{F5}}$.

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Moving among System Programming Screens

Some general comments regarding moving from one system programming
screen to another follow:

- In most cases, you can select Back or click F5 to exit from a screen
  without making any changes. Exceptions to this are noted as part of a
  procedure. When you complete a procedure and select Back (F5), you
  usually move up one screen in the menu hierarchy. Occasionally, when you
  select Back (F5), you return to the previous screen. In a few cases,
  pressing Back brings you back to the System Programming menu, where
  you can select another option to program or exit from system programming.

- To complete a procedure and save the information you have programmed,
  select Enter or click F10 on the system programming console emulation
  display on your PC.

- If you are programming a group of sequentially numbered extensions or
  trunks, you may optionally select Next (F8). This saves your entry and
  automatically provides the number of the next extension or trunk in the
  sequence, thus saving you several steps. If Next displays on the screen,
  you can use it with the current option.

- In most cases, you will be at an intermediate step in the procedure you
  have just completed. At that point, you can select one of the options shown
  on the screen and continue programming, or you can select Back (F5)
  again. This usually takes you back to the System Programming menu. If
  not, you can continue programming on the current screen or select Back
  (F5) again.

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Exiting System Programming

Use the information in the following table to return to the System Programming menu, the Main menu (Menu Mode screen), or the Home screen.

Exiting System Programming

To return to:	On the console, select:	On the PC display, click:
Previous menu (or, in some cases, to go to next item to program)	Back	F5
Main menu	Menu	End
Normal call handling	MLX-20L console: Home	Home
	4424LD+ console: Exit	Exit

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2 Managing System Operating Conditions

Overview

This chapter provides procedures that are related to system-wide operation, rather than to the operation of individual telephones, operator positions, lines, or trunks. It provides procedures to set the system time and date, and back up the system.

There may be occasions when you need to program ports on a 016 ETR module as T/R ports. The procedure to perform this task is also provided in this chapter.

For a list of all system operating conditions that can be set, see "Basic System Operating Conditions" in Chapter 3 of *System Programming*. The procedures included in this chapter are those you may need to perform most frequently.

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2 Managing System Operating Conditions
Setting System Date

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Setting System Date

Use this procedure to change the System Date. This feature allows you to set the month, day, and year that appear on display telephones and on Station Message Detail Recording (SMDR) reports.

The System Date must be set correctly. System Date affects the functioning of several system features and applications, including Automatic Backup, Night Service, SMDR reports, stand-alone Auto Attendant systems, Voice Mail, and Reminder Service.

Console Procedure System→Date→Drop→Dial current date or time→Enter→
Back

PC Procedure [F1]→[F7] or [F8]→[Drop]→Type current date→[F10]→[F5]

Setting System Time

Use this procedure to change the System Time. This feature allows you to set the time that appears on display telephones and on SMDR reports.

The System Time must be set correctly. System Time affects the functioning of several system features and applications, including Automatic Backup, Night Service, SMDR reports, stand-alone Auto Attendant systems, Voice Mail, and Reminder Service.

NOTE Be sure to change the system time appropriately when Daylight Savings Time starts and when it ends.

Console Procedure System→Date or Time→Drop→Dial current time→
Enter→Back

PC Procedure [F1]→[F7] or [F8]→[Drop]→Type current time→[F10]→[F5]

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2 Managing System Operating Conditions
Backing Up the System

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Backing Up the System

Use this procedure to make a copy of your customized system data. The backup does not copy any application data. For information about application backup, see the documentation for the application.

NOTES ▶
- *By default, the system is set to perform a backup automatically once a week. You can change this to daily backups or to manual backups. For more information, see "Automatic Backup" in the "Memory Card" section in Chapter 3, "Programming Procedures," of System Programming.*

- *If any type of programming is taking place at another extension when you begin the backup procedure, the backup is cancelled and the number of the first busy extension appears on the screen. Attempt the backup procedure again when the busy extension becomes idle.*

Console Procedure Insert memory card→System→Back/Restore→
Backup→Select backup file→Dial new backup filename (1 to 11 characters)→Enter→Yes→Back→Back→Back

PC Procedure Insert memory card→ F1 → F9 → F1 →Select backup file→Type new backup filename (1 to 11 characters)→ F6 →
F1 → F5 → F5 → F5

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2 Managing System Operating Conditions
Programming for Tip/Ring on 016 ETR Modules

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Programming for Tip/Ring on 016 ETR Modules

Use this procedure to program ports 11 through 16 on an 016 ETR module as T/R ports.

When a port on an 016 ETR module is changed from ETR to T/R or from T/R to ETR, all programming assigned to the extension (such as inclusion in coverage groups and Calling Groups) is cleared and the extension is restored to the functionality defined with the factory settings (such as Calling Restrictions and button assignments).

NOTE *A system forced idle occurs when you perform this task. In addition to assigning either T/R or ETR functionality, with this task you are also able to determine whether a port on an 016 ETR module has been administered as T/R or ETR. However, because this task forces the entire system into a forced idle state, it is recommended you do not use it to determine how the port has been administered. Instead, to determine the functionality of an ETR port, it is recommended that you do one of the following:*

- *Print an Extensions Print report. The report shows:*

  — *"T/R" if the port is programmed as T/R.*

  — *"ETR" if the port is programmed as ETR and an MLS or ETR telephone is connected to the port.*

  — *"UNEQUIPPED" if the port is programmed as ETR and an MLS or ETR telephone is not connected to the port.*

- *View the extension profile by using this procedure:*
  Maintenance→Port→Station→Status
  The profile shows the same information as previously listed for the Extensions Print report.

Console Procedure Extensions→▶ or More→▶ or More→ETR→
Type ext. no.→ Enter→Select port type (ETR or Tip Ring)→
Enter→ Back→Back

PC Procedure F6 → PgUp → PgUp → F8 →Type ext. no.→ F10 →
Select port type (ETR or Tip Ring)→ F10 → F5 → F5

3 Managing Lines and Telephones

Overview

This chapter provides procedures that are related to the operation of telephones, lines, and trunks. It provides a review of things you need to consider when you change lines and telephones. This chapter also provides procedures to add, remove, and move lines or telephones; assign ICOM and SA buttons to telephones, change calling restrictions for telephones; and assign features to buttons on telephones.

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3 Managing Lines and Telephones
Considerations When Changing Lines and Telephones

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Considerations When Changing Lines and Telephones

Before you add, remove, or move a line or telephone, review the information provided in the following three sections— "About Adding/Removing a Line," "About Adding/Removing a Telephone," and "About Moving a Telephone."

About Adding/Removing a Line

You must contact your central office to obtain a new line or to disconnect a line. If you are adding a line, after the central office is contacted, call Lucent Technologies at 1 800 247-7000 to arrange for a Lucent Technologies technician to connect the line to the system and set it up (charges may apply).

NOTE *If you are adding a line but there is no spare jack, you also need to add a new module. Contact your Lucent Technologies representative. After the line is connected and set up, or after it is disconnected, you must program it.*

Assign the line to or unassign the line from a pool, to/from extensions (if it is a Personal Line), to/from a Calling Group, or to/from Remote Access, as appropriate. See "Extensions" in Chapter 3 *System Programming*.

About Adding/Removing a Telephone

When you add or remove a telephone, you must first understand system numbering. In addition, when adding a telephone, you must make decisions about which features and buttons to assign to the telephone; when removing a telephone, you must remove all features that were programmed for that telephone. Also, when removing a telephone, you must remove it from any groups and lists to which it is assigned (for example, Allowed Lists, Calling Restrictions, Coverage, Calling Group, Pickup Group, Paging Group, and/or Night Service).

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Considerations When Changing Lines and Telephones

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See both "System Renumbering" and "Extensions" in Chapter 3 of *System Programming* for detailed information about system numbering and the planning required to add or remove a telephone.

- If your system uses the Set Up Space numbering plan (see Form 2a in *System Planning*) and you want to add or remove a single telephone, see "Single Renumbering" on page 26.

- If your system uses the Set Up Space numbering plan (see Form 2a in *System Planning*) and you want to add or remove a group of telephones, see "Block Renumbering" on page 27.

- If you are adding or removing a Personal Line, Loudspeaker Paging, or Pool buttons, see "Assigning/Unassigning Outside Lines or Pools to Telephones" on page 27.

- If you are adding a telephone and you want to copy line/trunk button assignments, pool dial-out Code Restrictions (Hybrid/PBX only), and Night Service information (for operator positions only), see "Copying Line/Trunk Button Assignments" on page 34.

- If you want to assign or unassign ICOM or SA buttons, see "Assigning/Unassigning ICOM or SA Buttons" on page 28.

- On the MLS-12 and MLS-12D telephones, some features and lines may be assigned to telephone buttons that do not have lights. You may want to reassign the features or lines to buttons with lights. To do this, see "Assigning/Unassigning ICOM or SA Buttons" on page 28.

- The system software cannot distinguish between ETR-6 and MLS-6 telephones; it sees the two telephones as the same type of telephone. The default button assignments, however, are different. You should change the MLS-6 button assignments to the ETR-6 assignments to reduce confusion. To do this, see "Assigning/Unassigning ICOM or SA Buttons" on page 28.

- If you need to program an 016 ETR module for tip/ring functionality, see "Programming for Tip/Ring on 016 ETR Modules" on page 22.

- If you are adding a Business Cordless 905 telephone or a TransTalk MDC or MDW telephone connected through an ETR module, the system assigns the same buttons as those assigned for an MLS-12D telephone.

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Programming for Line and Telephone Changes

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- To program or remove any additional features to the extension, refer to
  "Optional Telephone Features," "Optional Group Features," and "System
  Features" in Chapter 3 of *System Programming*.

About Moving a Telephone

When you move a telephone, you must renumber the extension jack for the
telephone. Renumbering changes the extension number, but the programming of
the telephone stays the same. To renumber a telephone or group of telephones,
see "Single Renumbering" and "Block Renumbering" in the following sections.

Programming for Line and Telephone Changes

The programming tasks provided in the following sections are all relevant to
changing lines and telephones in your system. Based on the considerations
provided at the beginning of this chapter, perform the necessary tasks.

Single Renumbering

If your system uses the Set Up Space numbering plan and you want to add,
remove, or move a single telephone, use this procedure to single-renumber the
extension jack.

NOTE *A system forced idle occurs when you perform this task.*

Console Procedure SysRenumber→Single→Select item→Dial old ext.
no.→Enter→Dial new ext. no.→Enter→Back→Back

PC Procedure [F2]→[F2]→Select item→Type old ext. no.→[F10]→
Type new ext. no.→[F10]→[F5]→[F5]

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Programming for Line and Telephone Changes

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Block Renumbering

If your system uses the Set Up Space numbering plan and you want to add, remove, or move a group of telephones, use this procedure to renumber the group of extension jacks. Both the original numbers and the numbers to which they are being changed must be sequential.

NOTE *A system forced idle occurs when you perform this task.*

Console Procedure SysRenumber→Block→Select type of group→Dial no. of first group member→Enter→Dial no. of last group member→ Enter→Dial new beginning no.→Enter→Back→Back→ Back

PC Procedure F2 → F3 →Select type of group→Type no. of first group member→F10 →Type no. of last group member →F10 → Type new beginning no.→F10 → F5 → F5 → F5

Assigning/Unassigning Outside Lines or Pools to Telephones

If you are adding or removing a Personal Line, Loudspeaker Paging, or Pool buttons (Hybrid/PBX only), use this procedure to assign or unassign the outside lines/trunks to the buttons on the telephone.

Console Procedure To program a single line/trunk:
Extensions→Lines/Trunks→Dial ext. no.→Enter→ Entry Mode→Dial line/trunk no.→Enter→Back→Back

To program a block of lines/trunks:
Extensions→Lines/Trunks→Dial ext. no.→Enter→ Select trunk range→Toggle LED On/Off→Enter→Back→ Back

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Programming for Line and Telephone Changes

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PC Procedure   To program a single line/trunk:
$\boxed{\text{F6}} \rightarrow \boxed{\text{F1}} \rightarrow$Type ext. no.$\rightarrow \boxed{\text{F10}} \rightarrow \boxed{\text{F6}} \rightarrow$Type line/trunk no.$\rightarrow$
$\boxed{\text{F10}} \rightarrow \boxed{\text{F5}} \rightarrow \boxed{\text{F5}}$

To program a block of lines/trunks:
$\boxed{\text{F6}} \rightarrow \boxed{\text{F1}} \rightarrow$Type ext. no.$\rightarrow \boxed{\text{F10}} \rightarrow$Select trunk range$\rightarrow$
Toggle letter G On/Off$\rightarrow \boxed{\text{F10}} \rightarrow \boxed{\text{F5}} \rightarrow \boxed{\text{F5}}$

Assigning/Unassigning ICOM or SA Buttons

Use this procedure to assign or unassign the Intercom (ICOM) buttons used to
make and receive inside calls. In Hybrid/PBX mode only, use this procedure to
assign or unassign System Access (SA) buttons used to make and receive
inside and outside calls.

Console Procedure To program an extension:
Sys Programming$\rightarrow \boxed{\blacktriangleright}$ or More$\rightarrow$Cntr-Prg$\rightarrow$Program
Ext$\rightarrow$Dial ext. no.$\rightarrow$Enter$\rightarrow$Start$\rightarrow$Select button$\rightarrow$Dial
feature code (*16 or *18)$\rightarrow$Enter$\rightarrow$(Repeat from beginning to
program another button)$\rightarrow$Back$\rightarrow$Back

To copy extension programming:
Sys Programming$\rightarrow \boxed{\blacktriangleright}$ or More$\rightarrow$Cntr-Prg$\rightarrow$Copy
ext$\rightarrow$Dial copy from ext. no.$\rightarrow$Enter$\rightarrow$Dial copy to ext.
no.$\rightarrow$Enter$\rightarrow$Back$\rightarrow$Back

PC Procedure   To program an extension:
$\boxed{\text{F5}} \rightarrow \boxed{\text{PgUp}} \rightarrow \boxed{\text{F4}} \rightarrow \boxed{\text{F1}} \rightarrow$Type ext. no.$\rightarrow \boxed{\text{F10}} \rightarrow \boxed{\text{F10}} \rightarrow$
Click button ($\boxed{\text{Shift}}$ + function key or $\boxed{\text{Alt}}$ + function key)$\rightarrow$Type
feature code (*16 or *18)$\rightarrow \boxed{\text{F10}} \rightarrow$(Repeat from beginning to
program another button)$\rightarrow \boxed{\text{F5}}$

To copy extension programming:
$\boxed{\text{F5}} \rightarrow \boxed{\text{PgUp}} \rightarrow \boxed{\text{F4}} \rightarrow \boxed{\text{F2}} \rightarrow$Type copy from ext. no.$\rightarrow \boxed{\text{F10}} \rightarrow$
Type copy to ext. no.$\rightarrow \boxed{\text{F10}} \rightarrow \boxed{\text{F5}} \rightarrow \boxed{\text{F5}}$

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Programming for Line and Telephone Changes

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Changing Calling Restrictions

Use this procedure to change Calling Restrictions of individual extensions' to one
of the following:

- Unrestricted

- Restricted from making all outgoing calls

- Restricted from making toll calls

Changing Calling Restrictions may affect other features, including Allowed Lists,
Auto Dial, Automatic Route Selection (ARS), Callback, Conference, Coverage,
Disallowed Lists, Display, Extension Status, Forward and Follow Me, Night
Service, Personal Lines, Pools, Speed Dial, and SA/ICOM buttons. For more
information, see the Feature Reference.

Console Procedure Extensions→Restriction→Dial ext. no.→Enter→
Select restriction→Enter→Back

PC Procedure $\boxed{\text{F6}}$ → $\boxed{\text{F4}}$ →Type ext. no.→ $\boxed{\text{F10}}$ →Select restriction→
$\boxed{\text{F10}}$ → $\boxed{\text{F5}}$

Changing Permissions to Transfer Outside Calls to Outside Numbers

Use this procedure to enable or disable trunk-to-trunk transfer at one or more
extensions. Trunk-to-trunk transfer is the transferring of an outside call to another
outside number. When trunk-to-trunk transfer is allowed, there is a risk of toll
fraud.

⚠️ SECURITY ALERT:
**The factory setting for all extensions, including Voice Messaging
(VMI) ports and Remote Access barrier codes, disallows
trunk-to-trunk transfer. If you elect to enable this feature at an
extension, consider the risk of toll fraud abusers obtaining
access to your system and calling out of the system using this
feature.**

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Console Procedure Extensions→▶ or More→▶ or More→TrkTransfer→
Toggle LED On/Off or dial ext. no.→Enter→Back→Back

PC Procedure [F6]→[PgUp]→[PgUp]→[F7]→Toggle letter R On/Off or type ext.
no.→[F10]→[F5]→[F5]

Revising Allowed and Disallowed Lists

This section provides summary procedures for revising an Allowed List and a
Disallowed List and assigning them to extensions. Using Allowed Lists and
Disallowed Lists is another way to apply calling restrictions.

Revising an Allowed List

Use this procedure to revise an Allowed List. An Allowed List is a list of
telephone numbers that can be dialed from specified extensions, regardless of
any calling restrictions assigned to the extensions.

An Allowed List provides some flexibility for extensions with calling restrictions by
allowing specified extensions to dial certain numbers (for example, 911),
regardless of the extension's calling restrictions.

A Disallowed List takes precedence over an Allowed List.

Console Procedure Tables→AllowList→Dial list no. (0 to 7) and entry no. (0 to
9)→Enter→Drop→Dial telephone no. (1 to 6 digits with leading
1 if necessary)→Enter→Back

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PC Procedure [F8]→[F1]→Type list no. (0 to 7) and entry no. (0 to 9)→[F10]→
[Drop]→Type telephone no. (1 to 6 digits with leading 1 if
necessary)→[F10]→[F5]

NOTE *You can enter a star code (a star digit followed by a 2- or 3-digit number before the telephone number in Allowed List and Disallowed List entries. The star codes that the system recognizes are:*

- *2-digit codes: ∗(00–19, 40–99)*
- *3-digit codes: ∗(200–399)*

For more information on star codes, see "Star Codes and Allowed/Disallowed Lists" under "Allowed Lists/Disallowed Lists" in the Feature Reference.

Assigning an Allowed List to Extensions

Use this procedure to assign an established Allowed List to individual extensions. Note that more than one Allowed List can be assigned to an extension.

Console Procedure Tables→AllowTo→Dial list no. (0 to 7)→Enter→
Dial ext. no.→Enter→Back→Back

PC Procedure [F8]→[F2]→Type list no. (0 to 7)→[F10]→Type ext. no.→
[F10]→[F5]→[F5]

Revising a Disallowed List

Use this procedure to revise a Disallowed List that contains telephone numbers that cannot be dialed from specified extensions (including unrestricted telephones). A Disallowed List takes precedence over an Allowed List.

Console Procedure Tables→Disallow→Dial list no. (0 to 7) and entry no.
(0 to 9)→Enter→Drop→Dial telephone no. (11 digits consisting
of area code, exchange, and extension plus a wildcard Pause
character entered by pressing the Hold button)→Enter→Back

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PC Procedure $\boxed{\text{F8}}$ → $\boxed{\text{F3}}$ → Type list no. (0 to 7) and entry no. (0 to 9) → $\boxed{\text{F10}}$ → $\boxed{\text{Drop}}$ → Type telephone no. (11 digits consisting of area code, exchange, and extension plus a wildcard Pause character entered by pressing the Hold button) → $\boxed{\text{F10}}$ → $\boxed{\text{F5}}$

NOTES • You can enter a star code (a star digit followed by a 2- or 3-digit number) before the telephone number in Allowed List and Disallowed List entries. The star codes that the system recognizes are:

— 2-digit codes: *(00–19, 40–99)

— 3-digit codes: *(200–399)

• For more information on star codes, see "Star Codes and Allowed/Disallowed Lists" under "Allowed Lists/Disallowed Lists" in the Feature Reference.

Assigning a Disallowed List to Extensions

Use this procedure to assign an established Disallowed List to individual extensions.

Console Procedure Tables→DisallowTo→Dial list no. (0 to 7)→Enter→ Dial ext. no.→Enter→Back→Back

PC Procedure $\boxed{\text{F8}}$ → $\boxed{\text{F4}}$ → Type list no. (0 to 7) → $\boxed{\text{F10}}$ → Type ext. no. → $\boxed{\text{F10}}$ → $\boxed{\text{F5}}$ → $\boxed{\text{F5}}$

Assigning Features to Telephones

Centralized telephone programming allows you to assign features to buttons on individual user telephones and operator telephones. Certain features can be copied from one extension to another in the system. Individual telephone users or operators can also program most of the features onto their telephones themselves.

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The following features, however, can be programmed only through centralized telephone programming:

- Barge-In

- Headset Hang Up

- Intercom buttons: all types (Key and Behind Switch mode only)

- System Access buttons: all types (Hybrid/PBX only)

- Service Observing button

- If you are programming features onto a single telephone, see "Programming Features onto a Single Telephone" on page 33.

- If you are programming several telephones of the same type (that is, all multiline 4400-Series, all MLX, all MLS, or all ETR), see "Copying Feature and SA/ICOM Buttons" on page 34.

- If you are copying outside line/trunk button assignments, pool dial-out Code Restrictions (Hybrid/PBX only), and Night Service information (for operator positions only), see "Copying Line/Trunk Button Assignments" on page 34.

From the Centralized Programming menu, you can perform centralized telephone programming by using telephone programming codes or selecting features from the List Feature menu. See "Features and Programming Codes" on page 131 in Appendix A for a list of telephone programming codes. For detailed information about the List Feature menu, see "Using the List Feature Menu" in Chapter 4 of *System Programming*.

Programming Features onto a Single Telephone

At the Centralized Programming menu, use the following procedure to program features onto a single telephone. See "Features and Programming Codes" on page 131 in Appendix A for a list of feature codes.

Console Procedure Sys Programming→▶ or More→Cntr-Prg→Program Ext→Dial ext. no.→Enter→Start→Press button→Dial feature code→Enter→(Repeat from beginning to program another button)→Back

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PC Procedure   F5 →PgUp→ F4 → F1 →Type ext. no.→F10→F10→
Click button→Type feature code→F10→(Repeat from beginning
to program another button)→ F5

Copying Feature and SA/ICOM Buttons

Use the Copy Extension feature to copy an extension's programmed buttons
(with some exceptions) to one or more extensions. Program the features
individually on an extension to create a template that can then be copied to other
extensions in the system.

Only extensions of the same type can be copied to one another (that is, multiline
4400-Series to multiline 4400-Series, MLX to MLX, MLS to MLS, and ETR to
ETR) because the four telephones have different button layouts. You need one
template for each type of telephone in your system.

A Multi-Function Module's (MFM) programming can be copied to or from another
MFM. A Direct Line Console (DLC) can be copied only to another DLC.
Single-line telephone and QCC features *cannot* be copied.

For features that can be copied, see "Features That Can Be Copied" in the "Copy
Extension" section of Chapter 4 of *System Programming.*

Console Procedure ▶ or More→Cntr-Prg→Copy Ext→Dial copy from ext.
no.→ Enter→Dial copy to ext. no.→Enter→(Return to "Dial
copy from ext. no." to copy another extension)

PC Procedure   PgUp→ F4 → F2 →Type copy from ext. no.→F10→
Type copy to ext. no.→F10→(Return to "Type copy from ext. no."
to copy another extension)

Copying Line/Trunk Button Assignments

Use this procedure to copy outside line/trunk button assignments, pool dial-out
code restrictions (Hybrid/PBX only), and Night Service information (for operator
positions only). You can copy from one extension to another or to a block of
extensions with identical requirements.

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If you are copying assignments from an operator position to a block of extensions that includes both operator and non-operator extensions, the information is copied only to the operator positions; the non-operator positions are not affected. Similarly, if you are copying assignments from a non-operator position to a block of extensions that includes both operator and non-operator extensions, the information is copied only to the non-operator positions; the operator positions are not affected. The system does not provide an error tone to signal that the copy did not work for all of the extensions in the block.

Console Procedure To copy to a single extension:
Extensions→Line Copy→Single→Dial copy from ext. no.→Enter→Dial copy to ext. no.→Enter→Back→Back

To copy to a block of extensions:
Extensions→Line Copy→Block→Dial copy from ext. no.→Enter→Dial ext. no. of first telephone in block→ Enter→Dial ext. no. of last telephone in block→Enter→ Back→Back

PC Procedure To copy to a single extension:
[F6]→[F2]→[F1]→Type copy from ext. no.→[F10]→ Type copy to ext. no.→[F10]→[F5]→[F5]

To copy to a block of extensions:
[F6]→[F2]→[F2]→Type copy from ext. no.→[F10]→ Type ext. no. of first telephone in block→[F10]→ Type ext. no. of last telephone in block→[F10]→[F5]→[F5]

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4 Managing DLC and QCC Operator Positions
Overview

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4 Managing DLC and QCC Operator Positions

Overview

This chapter provides procedures to assign a Direct Line Console (DLC) or Queued Call Console (QCC) operator position, as well as to assign features to the operator positions. Prior to assigning a DLC or QCC operator position, you must make decisions about which features and buttons to assign to the operator's telephone. See "About Adding/Removing a Telephone" on page 24.

A detailed discussion of system operator positions is provided in "System Operator Positions" in Chapter 3 of *System Programming*.

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4 Managing DLC and QCC Operator Positions
Assigning a DLC Operator Position

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Assigning a DLC Operator Position

Use this procedure to assign DLC operator positions to the first and fifth extension jacks on an 008 MLX, 408 GS/LS-ID-MLX, or 412 LS-ID-TDL module. You also can assign DLC positions to the first, fifth, thirteenth, and seventeenth extension jacks on an 016 MLX or 024 TDL module. You cannot assign a DLC operator position on an ETR module.

The first jack on the first extension module in your system is automatically assigned as the primary operator position.

NOTE▶ *A system forced idle occurs when you perform this task.*

Console Procedure Operator→Positions→Direct Line→Dial ext. no.→
Enter or Delete→Store All

PC Procedure [F3]→[F1]→[F1]→Type ext. no.→[F10] or [F8]→[F3]

Assigning a QCC Operator Position

Use this procedure to assign a QCC operator position to the first and fifth extension jacks on a 008 MLX, 408 GS/LS-ID-MLX, or 412 LS-ID-TDL module. You also can assign an QCC position to the first, fifth, thirteenth, or seventeenth extension jacks on an 016 MLX or 024 TDL module. The first jack on the first MLX or TDL extension module in your system is automatically assigned as the primary operator position. QCC button assignments are automatic and factory-set.

QCC operators serve as central answering positions for all incoming calls. Incoming calls are held in the QCC queue and are directed to each QCC operator in a prioritized sequence. The calls are received one at a time, regardless of the number of incoming calls to the system.

NOTE▶ *A system forced idle occurs when you perform this task.*

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Assigning a QCC Operator Position

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Console Procedure Operator→Positions→Queued Call→Dial ext. no.→
Enter or Delete→Store All

PC Procedure [F3]→[F1]→[F2]→Type ext. no.→[F10] or [F8]→[F3]

Assigning QCC Operator to Receive Calls

Use this procedure to specify whether or not incoming calls on each line/trunk
ring into the QCC queue and to identify the QCC system operator positions that
receive incoming calls on each line/trunk.

Console Procedure To program a single line/trunk:
LinesTrunks→▶ or More→QCC Oper→Dial ext. no.→
Enter→Select entry mode→Dial line/trunk no.→Enter→
Back→Back

To program a block of lines/trunks:
LinesTrunks→▶ or More→QCC Oper→Dial ext. no.→
Enter→Select block of lines/trunks→Toggle LED On/Off→
Enter→Back→Back

PC Procedure To program a single line/trunk:
[F4]→[PgUp]→[F4]→Type ext. no.→[F10]→[F6]→
Type line/trunk no.→[F10]→[F5]→[F5]

To program a block of lines/trunks:
[F4]→[PgUp]→[F4]→Type ext. no.→[F10]→
Select block of lines/trunks→Toggle letter G On/Off→
[F10]→[F5]→[F5]

Assigning QCC Queue Priority Level

Use this procedure to assign QCC queue priority level values (1 to 7) to each
loop-start, ground-start, and automatic-in tie trunk in your system. The value
assigned determines the order in which calls are sent to the QCC operator
positions. Call priority 1 is the highest priority, and 7 is the lowest priority. The
default value is 4.

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Console Procedure   To program a single line/trunk:
LinesTrunks→▶ or More→QCC Prior→
Dial priority level (1 to 7)→Enter→Select entry mode→
Dial trunk no.→Enter→Back→Back

To program a block of lines/trunks:
LinesTrunks→▶ or More→QCC Prior→
Dial priority level (1 to 7)→Enter→Select block of lines→
Toggle LED on/off→Enter→Back→Back

PC Procedure   To program a single line/trunk:
[F4]→[PgUp]→[F3]→Type priority level (1 to 7)→
Select entry mode→Type trunk no.→[F10]→[F5]→[F5]

To program a block of lines/trunks:
[F4]→[PgUp]→[F3]→Type priority level (1 to 7)→[F10]→
Select block of lines→Toggle letter G on/off→[F10]→[F5]→[F5]

Adding Optional Operator Features

In Hybrid/PBX mode, you can add the following features to the DLC and/or QCC operator positions.

- You can add Operator Hold Timer to both the DLC and QCC operator positions.

- You can add DLC Operator Automatic Hold only to DLC operator positions.

- You can add the following features only to QCC operator positions:

    — Hold Return

    — Automatic Hold or Release

    — Queue over Threshold

    — Elevate Priority

    — Calls-in-Queue Alert

    — QCC Operator to Receive Call Types

    — Call Type Queue Priority Level

    — Voice Announce

    — Message Center Operation

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— Automatic or Manual Extended Call Completion

— Return Ring

— Position-Busy Backup

NOTE *Some of these options cannot be programmed for an individual operator position, but rather for all operator positions in the system. These are: Operator Hold Timer, Hold Return, Automatic Hold or Release, Extended Call Completion, Return Ring, Queue over Threshold, Elevate Priority, and QCC Operator to Receive Call Types. In addition, only one Position-Busy Backup can be programmed per system.*

Setting Operator Hold Timer

Use this procedure to set the length of the operator Hold Timer for all DLCs and QCCs. If the system operator does not pick up the call within the time programmed, an abbreviated ring reminds the operator that a call is being held.

This option cannot be programmed for individual operator positions.

Console Procedure Operator→Hold Timer→Drop→Dial no. of seconds (10 to 255 seconds)→Enter→Back

PC Procedure $\boxed{\text{F3}}$→$\boxed{\text{F3}}$→$\boxed{\text{Drop}}$ →Type no. of seconds (10 to 255 seconds)→$\boxed{\text{F10}}$→$\boxed{\text{F5}}$

Enabling the DLC Operator Automatic Hold

Use this procedure to enable or disable the DLC Operator Automatic Hold feature for DLC operator positions. When this feature is enabled, it prevents accidental call disconnection.

Console Procedure Operator→DLC Hold→Automatic Hold Enable or Automatic Hold Disable→Enter→Back

PC Procedure $\boxed{\text{F3}}$→$\boxed{\text{F4}}$→$\boxed{\text{F1}}$ or $\boxed{\text{F2}}$→$\boxed{\text{F10}}$→$\boxed{\text{F5}}$

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Programming Hold Return

Use this procedure to determine whether calls on hold are returned to the QCC queue or remain on hold on the QCC operator console after the Hold Timer has expired twice. After the Hold Timer expires the first time, the operator hears an abbreviated ring as a call-on-hold reminder. If another call is received at the same time that the Hold Timer expires, 10 seconds are added to the programmed operator Hold Timer Interval for the first call. If the QCC operator does not pick up a call by the time the Hold Timer expires twice, the call can be programmed to either remain on hold or return to the QCC queue.

This option cannot be programmed for individual QCC operator positions. The single setting applies to all QCC operator positions.

Console Procedure Operator→Queued Call→Hold Rtrn→
        Return to Queue or Remain on Hold→Enter→
        Back→Back

PC Procedure $\boxed{\text{F3}}$→$\boxed{\text{F2}}$→$\boxed{\text{F1}}$→$\boxed{\text{F1}}$ or $\boxed{\text{F2}}$→$\boxed{\text{F10}}$→$\boxed{\text{F5}}$→$\boxed{\text{F5}}$

Programming Automatic Hold or Release

Use this procedure to specify whether a call in progress (on a Call button) is automatically put on hold (Automatic Hold) or disconnected (Automatic Release) when the operator presses another button.

This option cannot be programmed for individual QCC operator positions. The single setting applies to all QCC operator positions.

Console Procedure Operator→Queued Call→HoldRelease→
        Auto Hold or Auto Release→Enter→Back→Back

PC Procedure $\boxed{\text{F3}}$→$\boxed{\text{F2}}$→$\boxed{\text{F2}}$→$\boxed{\text{F1}}$ or $\boxed{\text{F2}}$→$\boxed{\text{F10}}$→$\boxed{\text{F5}}$→$\boxed{\text{F5}}$

Setting Queue over Threshold

Use this procedure to specify the maximum number of calls (Threshold) in the QCC queue before system operators are notified with a tone that the Threshold

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has been reached or exceeded. If the Threshold is set to 0, operators are not notified.

Console Procedure Operator→Queued Call→Threshold→Drop→
Dial no. of calls (0 to 99)→Enter→Back→Back

PC Procedure F3 → F2 → F3 →Drop →Type no. of calls (0 to 99)→
F10 → F5 → F5

Programming Elevate Priority

Use this procedure to specify the length of time before calls waiting in the QCC queue are automatically reprioritized to a higher level. If priority is set to 0, calls are not prioritized.

Console Procedure Operator→QueuedCall→ElvatePrior→Drop→
Dial no. of seconds (0 for same priority or 5 to 30)→Enter→
Back→Back

PC Procedure F3 → F2 → F4 →Drop →Type no. of seconds (0 for same
priority or 5 to 30)→F10 → F5 → F5

Programming Calls-In-Queue Alert

Use this procedure to specify whether each QCC operator is notified (with a single beep) when a new call enters the QCC queue.

Console Procedure Operator→Queued Call→InQue Alert→
Dial ext. no.→Enter→InQue Alert Enable or InQue
Alert Disable→Enter→Back→Back

PC Procedure F3 → F2 → F6 →Type ext. no.→F10 → F1 or F2 →
F10 → F5 → F5

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Programming a QCC Operator to Receive Call Types

Use this procedure to specify which QCC operators receive the following types of calls:

- Dial 0 calls (internal calls to the system operator).

- DID calls to invalid destinations (unassigned extension numbers).

- Calls to the Listed Directory Number (extension for the QCC queue).

- Calls programmed to return to the QCC queue (returning from directing, camped-on, held calls, and operator parked calls).

- Group Coverage calls.

- Forward/Follow Me calls.

The QCC queue can be a receiver for the maximum number of coverage groups (30).

Console Procedure Operator→Queued Call→Call Types→
Select a call type→Operator→Dial coverage group no.→
Enter→Dial ext. no.→Enter→Back→Back→Back→
Back→Back

PC Procedure $\boxed{F3}$→$\boxed{F2}$→$\boxed{F7}$→Select a call type→$\boxed{F2}$→
Type coverage group no.→$\boxed{F10}$→Type ext. no.→$\boxed{F10}$→$\boxed{F5}$→
$\boxed{F5}$→$\boxed{F5}$→$\boxed{F5}$→$\boxed{F5}$

Assigning QCC Call Type Queue Priority Level

Use this procedure to assign a priority value (1 to 7) that determines the order in which calls programmed to ring into the QCC queue are sent to QCC system operator positions. A value of 1 is the highest priority. The default value is 4. The QCC queue priority level is assigned for the following types of calls:

- Dial 0 calls (internal calls to the system operator).

- DID calls to invalid destinations (unassigned extension numbers).

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- Calls to the Listed Directory Number (extension for the QCC queue).

- Calls programmed to return to the QCC queue (returning from extending, camped-on, held calls, and operator parked calls).

- Group Coverage calls.

- Calls signed in (Follow) or forwarded to the system operator.

- Calls to a system operator extension number.

This procedure does not include programming the QCC queue priority level for individual lines or trunks to ring into the queue. See "Assigning QCC Queue Priority Level" on page 39.

Console Procedure Operator→Queued Call→Call Types→
Select call type→Priority→Drop→Dial priority level
(1 to 7)→Enter→Back→Back→Back→Back

PC Procedure F3 → F2 → F7 →Select call type→ F1 → Drop →
Type priority level (1 to 7)→ F10 → F5 → F5 → F5 → F5

Enabling Voice Announce

Use this procedure to enable or disable Voice Announce for the QCC.

When Voice Announce is enabled, every QCC in the system has one Voice Announce Call button, the Call 5 (Ring/Voice) button. All Intercom calls that originate from a QCC Call 5 (Ring/Voice) button are delivered as Voice Announce calls.

When Voice Announce is disabled, all Intercom calls originating at the QCC Call buttons are Intercom Ringing calls.

Console Procedure Operator→Queued Call→▶ or More→Voice Annc→
Enabled or Disabled→Enter→Back→Back

PC Procedure F3 → F2 → PgUp → F2 → F1 or F2 → F10 → F5 → F5

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Programming for Message Center Operation

Use this procedure to designate one or more QCC operator positions to operate as a Message Center. The following options are automatically set for the Message Center position:

- Incoming calls are not directed to this position.

- Returning calls are directed to this position (return from extending and operator parked calls).

- All Group Coverage calls are directed to this position.

- All DID calls to invalid destinations are directed to this position.

Designating message center operation does not change any call type option programming, except that the call types mentioned above are added to the calls received at the QCC Message Center.

Console Procedure Operator→Queued Call→Msg Center→
                Dial QCC ext. no.→Enter→Back→Back→Back

PC Procedure $\boxed{\text{F3}}$→$\boxed{\text{F2}}$→$\boxed{\text{F8}}$→Type QCC ext. no.→$\boxed{\text{F5}}$→$\boxed{\text{F5}}$→$\boxed{\text{F5}}$

Programming for Extended Call Completion

Use this procedure to specify one of the two basic options shown below for QCC operator positions with a DSS only:

- **Automatic Completion**. Allows one-touch call transfer—that is, calls are transferred by touching only an extension button on the DSS. The operator does not have to press the Release button.

- **Manual Completion**. QCC operators must press the Release button to complete the transfer when transferring a call using a DSS.

This option cannot be programmed for individual QCC operator positions. The setting applies to all QCC operator positions.

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Console Procedure Operator→Queued Call→ExtndComplt→
Automatic Complete or Manual Complete→Enter→
Back→Back

PC Procedure [F3]→[F2]→[F9]→[F1] or [F2]→[F10]→[F5]→[F5]

Setting Return Ring

Use this procedure to specify the number of rings before an unanswered directed call is returned to the QCC queue or QCC Message Center position.

This option cannot be programmed for individual QCC operator positions. The setting applies to all QCC operator positions.

NOTE▶ If you want unanswered calls to proceed to Voice Mail, lengthen the Return Ring setting.

Console Procedure Operator→Queued Call→Return Ring→Drop→
Dial no. of rings (1 to 15)→Enter→Back→Back

PC Procedure [F3]→[F2]→[F10]→[Drop]→Type no. of rings (1 to 15)→
[F10]→[F5]→[F5]

Programming for Position Busy Backup

Use this procedure to designate or remove the Calling Group to provide the backup position for the QCC queue. The specified Calling Group receives incoming calls when all QCC operator positions are in Position Busy mode.

Position Busy Backup is programmed for the QCC queue rather than for individual QCC operator positions. The Calling Group designated as the QCC queue backup serves as the backup for the Remote Access feature and as backup when the QCC is being used as the system programming console.

Only one Position Busy Backup can be programmed per system.

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Console Procedure Operator→Queued Call→▶ or More→QCC Backup→
Drop→Dial ext. number→Enter or Delete→Back→Back

PC Procedure F3 → F2 → PgUp → F1 → Drop →Type ext. number→
F10 or F8 → F5 → F5

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5 Connecting Auxiliary Equipment
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5 Connecting Auxiliary Equipment

Overview

This chapter provides procedures to program line/trunk or extension jacks used for auxiliary equipment and applications—for example, a music source for Music-On-Hold, loudspeaker paging equipment, maintenance alarms, or a fax machine.

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5 Connecting Auxiliary Equipment
Programming for Music-On-Hold

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Programming for Music-On-Hold

Use this procedure to identify the line/trunk jack reserved for connection of a music source, such as a radio, tape player, or stereo system. Only one Music-On-Hold line/trunk jack is allowed per system. Note the following conditions:

- You cannot assign the line/trunk identified for Music-On-Hold to a line/trunk pool. If the line/trunk is currently assigned to a pool, you must remove it before you program this option.

- You cannot assign the line/trunk identified for use with Music-On-Hold to a button on any telephone or as a Remote Access trunk.

- You cannot use the line/trunk jack identified for Music-On-Hold for a loudspeaker paging system or maintenance alarm.

Each system in a private network must have its own music source. A music source connected to a remote private networked switch cannot be used by the local system.

Console Procedure AuxEquip→MusicOnHold→Dial line/trunk no.→Enter→Back

PC Procedure [F9]→[F1]→Type line/trunk no.→[F10]→[F5]

Programming for Loudspeaker Paging

Use this procedure to identify the line/trunk jack reserved for connection of loudspeaker paging equipment. A maximum of three single-zone or multizone loudspeaker paging systems can be connected to the system. Note the following conditions:

- You cannot assign the line/trunk identified for loudspeaker paging equipment use to a line/trunk pool. If the line/trunk is currently assigned to a pool, you must remove it before you program this option.

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Programming for Fax Machines

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- You cannot assign the line/trunk identified for loudspeaker paging equipment use as a Remote Access line/trunk.

- You cannot use its jack for Music-On-Hold or maintenance alarm.

Console Procedure AuxEquip→Ldspkr Pg→Dial line/trunk no.→Enter→ Back

PC Procedure [F9]→[F2]→Type line/trunk no.→[F10]→[F5]

Programming for Fax Machines

Use this procedure to assign the extension jack used to connect the fax machine. To remove a fax machine and free the extension jack for another use, you must remove the extension jack assignment.

In addition, you can specify the extensions to receive a Message-Waiting Indication (MWI) when a fax transmission is received, as well as the length of time before the system registers that a fax has arrived and sends the MWI.

A maximum of 16 fax machines can use the Fax Message Waiting feature. Additional fax machines (more than 16) can be installed, but these machines cannot use this feature.

You can specify up to four telephones to receive the MWI when a fax transmission is received. Fax machines can only send and not receive MWIs.

Console Procedure To program an extension for a fax machine:
AuxEquip→Fax→Extension→Dial ext. no.→
Enter→Back

To have a message waiting light for a fax machine:
Fax→Extension→Dial ext. no.→Enter→ Back→
Msg Waiting→Dial fax machine ext. no.→ Enter→
Dial MWI ext. no.→Enter→Threshold→Drop→
Dial no. of seconds (0 to 30)→Enter→Back→Back

PC Procedure To program an extension for a fax machine:
[F9]→[F3]→[F1]→Type ext. no.→[F10]→[F5]

To have a message waiting light for a fax machine:
[F3]→[F1]→Type ext. no.→[F10]→[F5]→[F2]→ Type fax
machine ext. no.→[F10]→Type MWI ext. no.→ [F10]→[F3]→
[Drop]→Type no. of seconds (0 to 30)→[F10]→[F5]→[F5]

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5 Connecting Auxiliary Equipment
Programming for Maintenance Alarms

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Programming for Maintenance Alarms

Use this procedure to identify the line/trunk jack that connects an external alerting device that sounds or flashes when major maintenance problems occur.

You cannot assign the line/trunk identified for the maintenance alarm to a button on any telephone or as a Remote Access trunk, and you cannot use its line/trunk jack to connect a loudspeaker paging system or Music-On-Hold.

Console Procedure AuxEquip→MaintAlarms→Dial line/trunk no.→
Enter→Back

PC Procedure F9 → F4 →Type line/trunk no.→ F10 → F5 → F5

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6 Managing Group Features
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6 Managing Group Features

Overview

This chapter provides procedures to change group calling member assignments, group coverage member assignments, and coverage delay rings.

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6 Managing Group Features
Changing Group Calling Member Assignments

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Changing Group Calling Member Assignments

Use this procedure to assign or remove an extension to or from a Calling Group. A Calling Group is used to direct calls to a group of people who all handle the same type of call. A single extension number is assigned to the group and is used by both inside and outside callers to reach the group.

Console Procedure Extensions→▶ or More→Grp Calling→Members→
Dial Calling Group ext. no.→Enter→Dial ext. no.→Enter→
Back→Back→Back

PC Procedure [F6]→[PgUp]→[F4]→[F9]→Type Calling Group ext. no.→
[F10]→Type ext. no.→[F10]→[F5]→[F5]→[F5]

Changing Group Coverage Member Assignments

Use this procedure to assign or remove an extension to or from a Coverage Group. A Coverage Group is a group of senders. Coverage is an arrangement in which calls from a group of senders are redirected to one or more receivers.

Console Procedure Extensions→▶ or More→Group Cover→Dial group no.
(1 to 30)→Enter→Dial ext. no.→Enter→Back→Back

PC Procedure [F6]→[PgUp]→[F3]→Type group no. (1 to 30)→[F10]→
Type ext. no.→[F10]→[F5]→[F5]

Changing Coverage Delay Rings

Use this procedure to change coverage delay rings at an extension. Coverage delay is specified by ring delay settings for each extension.

The Feature Reference provides a full description of Coverage options, including detailed tables and illustrations. Before programming Coverage Delays, you should review this information.

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Changing Coverage Delay Rings

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Console Procedure Change the number of rings before a call is sent to Group
Coverage receivers:

Extensions→▶ or More→▶ or More→Cover Delay→
Group→Dial sender's ext. no.→Enter→
Dial no. of rings (1 to 9)→Enter→Back→Back

Change the delay for Primary Cover buttons programmed for Delay
Ring; change the additional delay before a call is sent to Group
Coverage receivers when Primary or Secondary Coverage
Receivers are available:

Extensions→▶ or More→▶ or More→Cover Delay→
Primary→Dial sender's ext. no.→Enter→
Dial no. of rings (1 to 6)→Enter→Back→Back

Change the delay for Secondary Cover buttons programmed for
Delay Ring:

Extensions→▶ or More→▶ or More→Cover Delay→
Secondary→Dial sender's ext. no.→Enter→
Dial no. of rings (1 to 6)→Enter→Back→Back

PC Procedure Change the number of rings before a call is sent to Group
Coverage receivers:

[F6]→[PgUp]→[PgUp]→[F2]→[F3]→Type sender's ext. no.→
[F10]→Type no. of rings (1 to 9)→[F10]→[F5]→[F5]

Change the delay for Primary Cover buttons programmed for Delay
Ring; change the additional delay before a call is sent to Group
Coverage receivers when Primary or Secondary Coverage
Receivers are available:

[F6]→[PgUp]→[PgUp]→[F2]→[F1]→Type sender's ext. no.→
[F10]→Type no. of rings (1 to 6)→[F10]→[F5]→[F5]

Change the delay for Secondary Cover buttons programmed for
Delay Ring:

[F6]→[PgUp]→[PgUp]→[F2]→[F2]→Type sender's ext. no.→
[F10]→Type no. of rings (1 to 6)→[F10]→[F5]→[F5]

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7 Managing Night Service Features
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7 **Managing Night Service Features**

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This chapter provides procedures to revise Night Service with group assignments and with coverage control.

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7 Managing Night Service Features
Revising Night Service with Group Assignments

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Revising Night Service with Group Assignments

Use this procedure to add or remove extensions, lines, and a Calling Group to a Night Service group for after-hours coverage.

Console Procedure To assign a Calling Group to a Night Service group:
NightSrvce→GroupAssign→CallingGroup→
Dial ext. no. of Night Service operator→Enter→
Dial Calling Group no.→Enter→Back→Back

To assign an extension to a Night Service group:
NightSrvce→GroupAssign→Extensions→
Dial ext. no. of Night Service operator→Enter→
Dial ext. no. of member→Enter→Back→Back

To assign a line to a Night Service group:
NightSrvce→GroupAssign→Lines→
Dial ext. no. of Night Service operator→Enter→
Dial outside line no. (801–880)→Enter→Back→Back

PC Procedure To assign a Calling Group to a Night Service group:
[F10]→[F1]→[F2]→Type ext. no. of Night Service operator→
[F10]→Type Calling Group no.→[F10]→[F5]→[F5]

To assign an extension to a Night Service group:
[F10]→[F1]→[F1]→Type ext. no. of Night Service operator→
[F10]→Type ext. no. of member→[F10]→[F5]→[F5]

To assign a line to a Night Service group:
[F10]→[F1]→[F3]→Type ext. no. of Night Service operator→
[F10]→Type outside line no. (801–880)→[F10]→[F5]→[F5]

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7 Managing Night Service Features
Revising Night Service with Coverage Control

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Revising Night Service with Coverage Control

Use this procedure to coordinate the status of Coverage VMS Off buttons programmed at extensions with Night Service operation.

With this feature enabled (the factory setting is disabled), the following occurs:

- When Night Service is turned On, all Coverage VMS Off buttons are deactivated—that is, the programmed voice-messaging system Calling Group takes calls.

- When Night Service is turned Off and normal operation is resumed, all Coverage VMS Off buttons are activated. Calls follow normal coverage patterns for business-hours operation.

Console Procedure To enable or disable Night Service with Coverage Control:
NightSrvce→Cover Control→Enable or Disable→
Enter→Back

PC Procedure To enable or disable Night Service with Coverage Control:
[F10]→[F9]→[F1] or [F2]→[F10]→[F5]

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7 Managing Night Service Features
Revising Night Service with Coverage Control

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8 Changing Labels
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8 **Changing Labels**

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This chapter provides procedures to change labels for Extension Directories, Lines or Trunks, Posted Messages, Group Calling, and System Speed Dial Directories.

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8 Changing Labels
Changing Extension Directory Labels

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Changing Extension Directory Labels

Use this procedure to change the alphanumeric system labels, so that display telephone users can identify the co-worker who is calling or leaving a message or to program the Extension Directory feature for 4400-Series or MLX telephones.

A label may have a maximum of seven characters. Labels may contain capital letters, numbers, and eight types of characters: ampersands (&), dashes (-), spaces, periods (.), commas (,), apostrophes ('), stars (*), and pound signs (#).

Console Procedure ▶ or More→Labeling→Directory→Extension→
Dial ext. no.→Enter→Drop→Dial label (up to 7 characters)→
Enter→Back→Back→Back

PC Procedure PgUp → F1 → F1 → F2 →Type ext. no.→ F10 →
Drop →Type label (up to 7 characters)→ F6 → F5 → F5 → F5

Changing Trunk Labels

Use this procedure to establish alphanumeric system labels for display telephone users to identify the line or trunk being used.

Each label may have a maximum of seven characters. Labels may contain capital letters, numbers, and eight types of characters: ampersands (&), dashes (-), spaces, periods (.), commas (,), apostrophes ('), stars (*), and pound signs (#).

Console Procedure ▶ or More→Labeling→LinesTrunks→Dial line/trunk
no.→ Enter→Drop→Dial label (up to 7 characters)→
Enter→Back→Back

PC Procedure PgUp → F1 → F2 →Type line/trunk no.→ F10 →
Drop →Type label (up to 7 characters)→ F6 → F5 → F5

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8 Changing Labels
Changing Posted Message Labels

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Changing Posted Message Labels

Use this procedure to change existing posted messages. Posted messages allow callers with display telephones to know why the called extension does not answer.

Each posted message may have a maximum of 16 characters. Labels may contain capital letters, numbers, and eight types of characters: ampersands (&), dashes (-), spaces, periods (.), commas (,), apostrophes ('), stars (*), and pound signs (#).

Console Procedure ▶ or More→Labeling→PostMessage→Dial message no. (1 to 20)→Enter→Drop→Dial message (up to 16 characters)→Enter→Back→Back

PC Procedure PgUp→ F1 → F3 →Type message no. (1 to 20)→ F10 → Drop →Type message (up to 16 characters) F6 → F5 → F5

Changing Calling Group Labels

Use this procedure to change alphanumeric system labels for display telephone users to identify Calling Groups.

Each label may have a maximum of seven characters. Labels may contain capital letters, numbers, and eight types of characters: ampersands (&), dashes (-), spaces, periods (.), commas (,), apostrophes ('), stars (*), and pound signs (#).

Console Procedure ▶ or More→Labeling→Grp Calling→Dial Calling Group ext. no.→Enter→Drop→Dial label (up to 7 characters)→ Enter→Back→Back

PC Procedure PgUp→ F1 → F4 →Type Calling Group ext. no.→ F10 → Drop →Type label (up to 7 characters)→ F6 → F5 → F5

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8 Changing Labels
Changing System Speed Dial Labels

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Changing System Speed Dial Labels

Use this procedure to change System Speed Dial numbers for all system users. You can also use this procedure to change the alphanumeric labels shown on the MLX display telephones.

There may be a total of 130 numbers, with a maximum of 11 characters per label. Labels may contain capital letters, numbers, and eight types of characters: ampersands (&), dashes (-), spaces, periods (.), commas (,), apostrophes ('), stars (*), and pound signs (#).

Console Procedure ▶ or More→Labeling→Directory→System→
Dial code no. (600 through 729)→Enter→Drop→
Dial label (up to 11 characters)→Enter→Backspace→
Dial telephone no.→Enter→Yes or No→Enter→Back→
Back→Back

PC Procedure PgUp →F1 →F1 →F1 →Type dial code no. (600 through
729)→F10 →Drop →Type label (up to 11 characters)→
F6 →F2 →Type telephone no.→F6 →F1 or F2 →F6 →
F5 →F5 →F5

9 About Reports

Overview

The system generates a variety of reports that can help you with your system management tasks:

- The Station Message Detail Recording (SMDR) feature provides information about incoming and outgoing calls. The content of the report depends on which of two formats (Basic or ISDN) you select. The report can include the type of call (voice or data), the date, the time of the call, the called number, the duration of the call, the number of the trunk used to make or receive the call, and an account code, if applicable. This report prints on the SMDR printer.

- The system programming reports describe how various aspects of the system are programmed (for example, Trunk Information, Label Information, Allowed and Disallowed Lists, and Pickup Groups). There is also an Error Log that describes any system errors that may occur. You access these reports from the System Programming menu.

The available system programming reports are listed below. With the exception of Trunk Information, the dash items under the bullets show the sections of each report that automatically print when that report option is selected.

- All

  — Each report
  — All report options

- System Setup (System Information Report)

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Overview

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- System Dial Plan

    — Pools

    — Telephone Paging Zones

    — Direct Group Calling

    — Lines/Trunks

    — Stations (Extensions)

- Label Information

    — Telephone Personal Directory

    — Message Numbers and Posted Messages

- Trunk Information (trunk option must be specified)

    — Tie

    — DID

    — Loop/Ground

    — General

- T1 Information

- PRI Information

- BRI Information

- Remote Access

    — General Options

    — Non-Tie Restrictions

    — Tie Restrictions

    — Barrier Code Restrictions

- Operator Information

    — Position

    — General Options

    — DSS Options

    — QCC Operators

    — Operator Information

- Allowed Lists

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9 About Reports
Printing SMDR Reports

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- Allowed Lists Assigned to Extensions

- Disallowed Lists

- Disallowed Lists Assigned to Extensions

- Automatic Route Selection

- Tables

- Extension Directory

- System Directory

- Group Page

- Extension Information

- Group Coverage

- Group Calling

- Night Service

- Call Pickup Groups

- Error Logs

- Authorization Codes

Printing SMDR Reports

Station Message Detail Recording (SMDR) reports print automatically on a serial printer connected to the SMDR jack on the control unit. The reports contain sequential call records.

If the printer is off, is out of paper, or has a paper jam, up to 100 SMDR records can be stored in the SMDR queue. The printing of system programming reports takes precedence; while these reports are printing, SMDR records are stored in the queue.

For more information, see "Station Message Detail Recording (SMDR)" in the *Feature Reference*.

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9 About Reports
 Printing System Programming Reports

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Printing System Programming Reports

Use this procedure to print System Programming reports. System Programming reports can be printed out or viewed on the screen of a PC with WinSPM or printed out on a serial printer connected to the SMDR jack on the processor module in the control unit.

You can print individual reports or use the All option to print the entire set of available reports, including all report sections and options.

For more information, see "Print Reports" in Chapter 3, "Programming Procedures," of System Programming. Appendix F of System Programming provides samples of the reports.

Console Procedure To print trunk information:
▶ or More→Print→Trunk Info→Select trunk type→ Exit

To print extension information
▶ or More→Print→More→Ext Info→Dial ext. no.→ Enter→Exit

To print all other reports:
▶ or More→Print→Select report→Exit

PC Procedure To print trunk information:
PgUp→ F3 → F6 →Select trunk type→ F5

To print extension information:
PgUp→ F3 → PgUp → F10 →Type ext. no.→ F10 → F5

To print all other reports:
PgUp→ F3 →Select report→ F5

To save report on disk:
PgUp→ F3 →Select report→ F10 →select GOTO FLOPPY from below console simulation screen→ F10

To view report:
Browse

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Printing System Programming Reports

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NOTES ▶
- *The Extension Information report incorrectly lists MLX-16DP telephones as MLX-28D telephones. If you have MLX-16DP telephones, keep a separate log of the extension numbers.*

- *MLS-6 and ETR-6 telephones are both reported as MLS/ETR telephones. TransTalk MDW 9031 telephones and the Business Cordless 905 telephone are identified as MLS-12D telephones.*

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Printing System Programming Reports

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10 Troubleshooting the System

Overview

This chapter provides procedures for solving the most common problems that you may encounter with the MERLIN MAGIX system. You may be able to resolve a problem quickly and easily by following the appropriate steps.

For information about troubleshooting data and video communications, see the Data/Video Reference. For more information about troubleshooting a Computer Telephony Integration (CTI) link, see the *PassageWay Telephony Services Network Manager's Guide*.

NOTE ▶ *Systems in Hybrid/PBX mode support private connections between MERLIN MAGIX Integrated Systems and a DEFINITY Enterprise Communications Server (ECS) or DEFINITY ProLogix Solutions systems using private networks or the public switched telephone network. This aspect of the system is not covered in this quick reference. For complete troubleshooting information, see the* Network Reference.

It is helpful to have the *Feature Reference*, *System Programming*, and system planning forms on hand to perform some procedures. If the procedure involves using system programming or centralized telephone programming to check a system or feature setting, the troubleshooting procedures indicate where in *System Programming* you can find the programming steps.

You should also have available the System Information Sheet from the front of this quick reference.

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⚠️ **WARNING:**
If you must check something on the control unit, proceed with caution. Do not stand on a box or chair to reach the unit if it is installed out of easy reach. If you do not have a stable ladder or other proper equipment, do not proceed; wait for the Lucent Technologies technician or authorized dealer.

NOTES • If power to the system is cut off, the system will retain its programming for four to five days after it stops receiving power. Then all of the system's programmed settings may return to the factory settings.

• Be sure to change the system time appropriately when Daylight Savings Time starts and when it ends. System time affects the functioning of several system features—including Automatic Backup, Night Service, Station Message Detail Recording (SMDR) reports, stand-alone Auto Attendant systems, Voice Mail, and Reminder Service.

• For information about removing the control unit housing, contact your Lucent Technologies representative or authorized dealer.

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10 Troubleshooting the System
  All Telephones Are Dead (No Dial Tone or Lights)

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All Telephones Are Dead (No Dial Tone or Lights)

Possible Cause 1: The control unit is not receiving power.

> ⚠️ **WARNING:**
> **When checking the power cord on the control unit, as instructed in the following procedure, do not stand on a box or chair to reach the unit if it is out of easy reach. If you do not have a stable ladder or other proper equipment, do not proceed; wait for the Lucent Technologies technician.**

What to do: Make sure the control unit's power cord is plugged securely into the wall outlet. Also, if convenient and safe to do so, make sure the other end of the power cord is securely connected to the power supply in the control unit.

- If all telephones now have dial tone and lights, you have solved the problem.
- If all telephones are still dead, go to Possible Cause 2.

Possible Cause 2: The power outlet into which the control unit is plugged is faulty.

What to do: Test the outlet by plugging in an appliance that you know is working—for example, a lamp or radio.

- If the appliance does not work, the outlet is faulty. If possible, plug the control unit into a different outlet, check the circuit breaker, or call an electrician.
- If the appliance works, the wiring may be faulty elsewhere in the system. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
  Some Telephones Are Dead (No Dial Tone or Lights)   74

Some Telephones Are Dead (No Dial Tone or Lights)

Possible Cause 1: The telephones are not receiving power.

> **What to do:** Check that each telephone is plugged into a telephone wall jack that you know is working.
>
> - If the telephones now have dial tones and lights, there may be a problem with the system wiring or the control unit associated with the faulty telephone or telephones. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).
>
> - If the telephones are still dead, go to Possible Cause 2.

Possible Cause 2: For single-line telephones, the Idle Line Selection may be set incorrectly. (If not a single-line telephone, go to Possible Cause 4.)

> **What to do:** Use centralized telephone programming to ensure that the Ringing/Idle Line Preference is set to On (see Chapter 4 in *System Programming*). Check to see whether the telephone now has dial tone.
>
> - If the telephone receives a dial tone, you have solved the problem.
>
> - If the telephone is still dead, go to Possible Cause 3.

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Possible Cause 3: For single-line telephones, the Auto Line Selection may be set incorrectly; see Chapter 4 in *System Programming*. (If not a single-line telephone, go to Possible Cause 4.)

What to do: Use centralized telephone programming to set the Auto Line Selection for the extension. Check to see whether the telephone now has a dial tone.

- If the telephone receives a dial tone, you have solved the problem.

- If the telephone is still dead, go to Possible Cause 5.

NOTE *The following procedure may help Lucent Technologies Helpline technicians analyze your problem. You should not perform this procedure, however, unless you have experience removing the control unit cover and working with the control unit extension jacks. Before proceeding, consult System Planning Form 2a, System Numbering: Extension Jacks.*

⚠ **WARNING:**
If you must check something on the control unit, proceed with caution. Do not stand on a box or chair to reach the unit if it is installed out of easy reach. If you do not have a stable ladder or other proper equipment, do not proceed; wait for the Lucent Technologies technician.

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Some Telephones Are Dead (No Dial Tone or Lights)   76

Possible Cause 4: If an MLX telephone is not working, it may be plugged into an MLX extension jack that is programmed for CTI link.

> **What to do:** Follow the procedure for printing an Extension Information Report to determine whether the jack is programmed for CTI link. See "Managing CTI Links" in *System Programming* for details.
>
> - If the jack is programmed for a CTI link and you wish to retain the link, plug the MLX telephone into another available MLX jack.
>
> - If the jack is programmed for a CTI link and you wish to remove the link programming, unplug the telephone from the MLX jack. Then see "Managing CTI Links" in *System Programming* for the correct procedure.
>
> - If the jack is not programmed for a CTI link, go to Possible Cause 5.

Possible Cause 5: The telephones may be defective.

> **What to do:** Test each telephone by replacing the dead telephone with a similar telephone that you know is working.
>
> - If the replacement telephone receives a dial tone and its lights function, then replace it with the original telephone and check again. If the original telephone still does not receive a dial tone and its lights do not function, then the original telephone may be defective. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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Some Telephones Are Dead (No Dial Tone or Lights)

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- If the replacement telephone does not receive a dial tone and its lights do not function, there may be a problem with the system wiring or the control unit. To test one possible wiring problem, go to Possible Cause 6.

NOTE *The following procedure may help Lucent Technologies Helpline technicians analyze your problem. You should not perform this procedure, however, unless you have experience removing the control unit cover and working with the control unit extension jacks. Before proceeding, consult System Planning Form 2a, System Numbering: Extension Jacks.*

⚠ WARNING:

If you must check something on the control unit, proceed with caution. Do not stand on a box or chair to reach the unit if it is installed out of easy reach. If you do not have a stable ladder or other proper equipment, do not proceed; wait for the Lucent Technologies technician.

Possible Cause 6: A module (or modules) may be defective.

What to do: Identify the control unit module (or modules) where the telephones are connected.

- If the telephones are all connected to one module, there may be a problem with the module. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

- If the dead telephones are connected to modules that also connect to working telephones, test the jacks on the modules. Identify the port where each nonfunctional telephone is connected. Identify a second port in the

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 Difficulty Making Outside Calls

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same module connected to a working telephone and unplug the jack from the module. Plug the jack for the dead telephone into the extension jack that is now open. If the telephone works, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

- If the telephones do not work when plugged into module jacks that are known to be functioning, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

Difficulty Making Outside Calls

⚠️ SECURITY ALERT:
When changing calling restrictions and other security settings, take care not to compromise the security of your system. For more information, consult "Security of Your System: Preventing Toll Fraud" in Appendix A, "Customer Support Information," of System Programming.

Possible Cause 1: This extension is restricted from making outside calls.

> **What to do:** Use system programming to check the extension's Calling Restrictions, if any (see Chapter 3 of System Programming). If the extension is toll- or outward-restricted, change it to unrestricted, if appropriate. Try again to make an outside call from the extension.
>
> - If you can make outside calls from the extension, you have solved the problem.
>
> - If you cannot make outside calls, go to Possible Cause 2.

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Possible Cause 2: If the system (Hybrid/PBX mode) uses pool dial out codes, the extension may be restricted from dialing the pool dial out code.

> **What to do:** Use system programming to determine whether the pool dial out code has been assigned for the extension (see Chapter 3 of *System Programming*).
>
> * If the pool dial out code is missing, assign it, if appropriate, and try again to make an outside call. If you can, you have solved the problem. If you cannot, go to Possible Cause 3.
>
> * If the pool dial-out code is not missing, go to Possible Cause 3.

Possible Cause 3: If the system (Hybrid/PBX mode) is set up for Automatic Route Selection (ARS), the extension's Facility Restriction Level (FRL) may be set too low (see Chapter 3 of *System Programming*). The extension's FRL must be greater than or equal to the route's FRL.

> **What to do:** Use system programming to check the extension's FRL.
>
> * If the FRL is set to less than 6, increase the FRL to 6 and try again to make an outside call. If you can now make outside calls on the telephone, adjust the FRL as needed. You have solved the problem.

⚠️ SECURITY ALERT:

Changing the extension's Facility Restriction Level may compromise the security of your system. If you leave the FRL at 6, ensure that the person at the extension is authorized to make toll calls. For more information, consult the section entitled

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> **"Automatic Route Selection" in the Feature
> Reference and "Security of Your System:
> Preventing Toll Fraud" in Appendix A, "Customer
> Support Information," of *System Programming*.**

- If, after setting the FRL to 6, the problem persists,
  change the FRL back to the original setting and go to
  Possible Cause 4.

NOTE▶ *Calls going across a private network may be affected
by the improper setting of the FRL. See the* Network
Reference *for details.*

Possible Cause 4: ARS tables are not programmed correctly.

> **What to d**o: Use system programming to check for correct
> pools, correct digit manipulation (prepending, dropping,
> etc.), and correct type of call (data only, voice only, or both).

Possible Cause 5: A Disallowed List is assigned to the extension.

> **What to do**: Use system programming to check whether a
> Disallowed List is assigned to the extension (see Chapter 3
> of *System Programming*).

- If a Disallowed List is assigned to the extension,
  remove it, if appropriate. Try again to make an outside
  call. If you can, you have solved the problem. If you
  cannot, go to Possible Cause 6.

- If a Disallowed List is not assigned to the extension, go
  to Possible Cause 6.

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Possible Cause 6: Night Service with Outward Restriction is activated.

> **What to do**: Check to determine whether Night Service with Outward Restriction is activated by checking the light next to the Night Service button on the operator's console.
>
> • If the light is on, then Night Service is activated and there are restrictions on outside calls. Use the Night Service password, if known, or use system programming to put the extension on the Night Service Exclusion List, if appropriate. Finally, try again to make an outside call. If you can, you have solved the problem. If you cannot, go to Possible Cause 7.

⚠️ SECURITY ALERT:
Extensions on the Night Service Exclusion List have unrestricted calling privileges and are not protected from unauthorized after-hours use.

> • If the light is off and Night Service is not activated, go to Possible Cause 7.

Possible Cause 7: Forced Account Code Entry is assigned to the extension.

> **What to do**: Use system programming to determine whether Forced Account Code Entry is required for that extension (see Chapter 3 of *System Programming*).
>
> • If it is, remove the extension from the list of extensions required to use account codes, if appropriate. Try again to make an outside call. If you can, you have solved the problem. If you cannot, go to Possible Cause 8.
>
> • If the extension is not on the list, go to Possible Cause 8.

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Possible Cause 8: In Hotel mode, the extension may be restricted from making calls.

> **What to do**: Check the Extension Status of the extension by observing its lights on the operator's DLC. To do this, change the console from a normal operator position to a calling supervisor's console by pressing the Feature button and dialing 32, then touching the Hold button. Check either the red light next to the extension's DSS button or the green light next to the Auto Dial button programmed for the extension.

> • If the light is flashing or on, the extension is restricted from making outside calls. To change the Extension Status to 0 and remove restrictions, press the Feature button and dial 760, then press the DSS button for the extension.

> Change the console back to normal operator status by pressing the Feature button and dialing 32, then pressing the Drop button. Try again to make an outside call. If you can, you have solved the problem. If you cannot, go to Possible Cause 9.

> • If the light is off, change the console back to the normal operator position by pressing the Feature button and dialing 32, then pressing the Drop button. Go to Possible Cause 9.

Possible Cause 9: The telephone may be defective.

> **What to do**: Test the telephone by replacing it with a similar telephone that you know is working properly.

> • If the replacement telephone can make outside calls, then replace it with the original telephone and check again. If the original telephone still cannot make outside

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10 Troubleshooting the System
Telephone Does Not Ring

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calls, then it may be defective. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

- If the replacement telephone cannot make outside calls, there may be a problem with the system wiring or the control unit. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

NOTE *If you are dialing an outside number on a private-networked system, the problem may be that the PRI PSTN outgoing tables are not programmed correctly. See the Network Reference for details.*

Telephone Does Not Ring

Possible Cause 1: The telephone's ringer volume control is set too low.

What to do: While the telephone is idle and the handset is in the cradle, adjust the volume control up. From another extension, dial the extension with the problem.

- If you can hear the telephone ring, you have solved the problem.
- If the telephone still does not ring, go to Possible Cause 2.

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Telephone Does Not Ring

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Possible Cause 2: The Do Not Disturb feature is turned On.

> **What to do**: Check the green light next to the programmed
> Do Not Disturb button to determine whether Do Not Disturb
> is turned On.
>
> - If the green light is on, then Do Not Disturb is turned
>   On. Press the button to deactivate the feature and to
>   turn the light off. From another extension, dial the
>   problem extension. If the telephone rings, you have
>   solved the problem. If not, go to Possible Cause 3.
>
> - If the green light is not on, then Do Not Disturb is Off;
>   go to Possible Cause 3.

Possible Cause 3: The Forward feature is turned On.

> **What to do**: Turn Off the Forward feature. Use one of the
> following methods, depending on the type of telephone:
>
> - At an MLX with a programmed Forward button,
>   deactivate the feature and turn the light off by pressing
>   the button (if the green light is on, indicating that the
>   feature is active). From another extension, dial the
>   extension with the problem. If the telephone rings, you
>   have solved the problem. If the telephone still does not
>   ring, go to Possible Cause 4.
>
> - At an MLX without a programmed Forward button,
>   deactivate Forward by pressing the Feature button and
>   dialing 33 plus the extension number of the telephone
>   that is not receiving calls. From another extension, dial
>   the extension where the problem is. If the telephone
>   rings, you have solved the problem. If the telephone
>   still does not ring, go to Possible Cause 4.

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Telephone Does Not Ring

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- At a single-line telephone, deactivate Forward by dialing #33 plus the extension number of the single-line telephone. From another extension, dial the extension with the problem. If the telephone rings, you have solved the problem. If the telephone still does not ring, go to Possible Cause 4.

Possible Cause 4: The Ringing Options setting of the Ring Timing feature for the extension is programmed for No Ring or Delayed Ring.

What to do: Use centralized telephone programming or extension programming to check the Ringing Options setting for the extension (see Chapter 4 of *System Programming*).

NOTE *You can check the Ringing Options setting at an MLX display telephone by first pressing the Inspct button and then a line button. Ringing can be set for each line or for all lines. To change a setting, use extension programming. At a single-line telephone, check the Ringing Options settings for each line by using centralized telephone programming.*

- If the Ringing Options setting is No Ring or Delay Ring, change the setting to Immediate, if appropriate. From another extension, dial the problem extension. If the telephone now rings, you have solved the problem. If not, go to Possible Cause 5.

- If the Ringing Options setting is Immediate, go to Possible Cause 5.

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Possible Cause 5: The telephone may be defective.

> **What to do:** Test the telephone by replacing it with a similar telephone that you know is working.
>
> - If the replacement telephone rings, then replace it with the original telephone and check again. If the original telephone still does not ring, then the original telephone may be defective. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).
>
> - If the replacement telephone does not ring, there may be a problem with the system wiring or the control unit. To test one wiring possibility, go to Possible Cause 6.

> **NOTE** The following procedure may help Lucent Technologies Helpline technicians analyze your problem. You should not perform this procedure, however, unless you have experience removing the control unit cover and working with the control unit extension jacks. Before proceeding, consult system planning Form 2a, System Numbering: Extension Jacks.

> ⚠️ **WARNING:**
> **If you must check something on the control unit, proceed with caution. Do not stand on a box or chair to reach the unit if it is installed out of easy reach. If you do not have a stable ladder or other proper equipment, do not proceed; wait for the Lucent Technologies technician.**

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10 Troubleshooting the System
 DLC Not Ringing for Incoming Calls

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Possible Cause 6: The wiring is faulty somewhere in the system.

> **What to do:** Test the control unit module and jack into which
> the telephone is plugged.
>
> - Identify the port where the non-functional telephone is
>   connected. Identify a second port in the same module
>   connected to a functional telephone and unplug the
>   jack from the module. Plug the jack for the non-working
>   telephone into the extension jack that is now open. If
>   the telephone works, call the Lucent Technologies
>   Helpline at 1 800 628-2888 (consultation charges may
>   apply).
>
> - If the telephone still does not work, call the Lucent
>   Technologies Helpline at 1 800 628-2888 (consultation
>   charges may apply).

DLC Not Ringing for Incoming Calls

Possible Cause 1: The Do Not Disturb feature is turned On.

> **What to do:** Check the green light next to the programmed
> Do Not Disturb button to determine whether Do Not Disturb
> is turned On.
>
> - If the green light is on, then Do Not Disturb is turned
>   On. Press the button to deactivate the feature and to
>   turn the light off. Finally, check whether incoming calls
>   ring at the console. If they do, you have solved the
>   problem. If not, go to Possible Cause 2.
>
> - If the green light is not on, then Do Not Disturb is not
>   turned On; go to Possible Cause 2.

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DLC Not Ringing for Incoming Calls

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Possible Cause 2: The Ring Timing setting of the Ringing Options feature for the extension is programmed for No Ring or Delayed Ring.

> **What to do:** Use centralized telephone programming to check the Ringing Options setting for the extension and each line (see Chapter 4 in *System Programming*).
>
> - If the Ringing Options setting for one or more lines is No Ring or Delay Ring, change the setting to Immediate, if appropriate. Finally, check to see whether incoming calls ring at the console. If they do, you have solved the problem. If not, go to Possible Cause 3.
>
> - If the Ringing Options setting is Immediate, go to Possible Cause 3.

Possible Cause 3: The telephone may be defective.

> **What to do:** Test the telephone by replacing it with a similar telephone that you know is working.
>
> - If the replacement telephone rings for incoming calls, then replace it with the original telephone and check again. If the original telephone still does not ring for incoming calls, then the original telephone may be defective. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).
>
> - If the replacement telephone does not ring for incoming calls, there may be a problem with the system wiring or the control unit. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
    QCC Not Ringing for Incoming Calls

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QCC Not Ringing for Incoming Calls

Possible Cause 1: The lines are not assigned to the QCC queue.

> **What to do:** Use system programming to assign the lines to the QCC queue (see "QCC Operator to Receive Calls" in the "Lines and Trunks" section of Chapter 3 of *System Programming*). Finally, check to see whether incoming calls ring at the console.
>
> - If the console rings for incoming calls, you have solved the problem. If not, go to Possible Cause 2.
>
> - If the console is still not ringing, go to Possible Cause 2.

Possible Cause 2: The Position Busy feature is turned On.

> **What to do:** Check the green light next to the Position Busy button.
>
> - If the green light is on, then Position Busy is turned On. Press the button to deactivate the feature and to turn the light off. Finally, check to see whether incoming calls ring at the console. If they do, you have solved the problem. If not, go to Possible Cause 3.
>
> - If the green light is off, then Position Busy is not turned On; go to Possible Cause 3.

Possible Cause 3: The Calls-In-Queue Alert option is disabled (this is the factory setting). The number of calls in the queue has exceeded the programmed threshold, or the callers have waited too long, and calls are being directed to a backup.

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QCC Not Ringing for Incoming Calls

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What to do: Use system programming to check whether the QCC's optional Calls-In-Queue Alert is disabled (see Chapter 3 of *System Programming*).

- If the Calls-In-Queue Alert option is set to Disable, change it to Enable, if appropriate. Finally, check whether incoming calls ring at the console. If they do, you have solved the problem. If not, go to Possible Cause 4.

- If the Calls-In-Queue Alert option is set to Enable, go to Possible Cause 4.

Possible Cause 4: Night Service may be On, and calls may be ringing at extensions assigned to the Night Service group rather than at the QCC.

What to do: Check the green light next to the Night Service button. If there is more than one QCC, all must have Night Service activated in order for calls to ring at Night Service group extensions. Lines assigned to a Night Service group ring when the QCC assigned for that group has Night Service turned On; other QCCs do not need Night Service turned On.

- If the green light is on at all QCCs in the system, then Night Service is turned On. Press the button to deactivate the feature and to turn the light off. Finally, check whether incoming calls ring at the console. If they do, you have solved the problem. If not, go to Possible Cause 5.

- If the green light is off, then Night Service is not turned On; go to Possible Cause 5.

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  QCC Not Ringing for Incoming Calls

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Possible Cause 5: The telephone may be defective.

> **What to do:** Test the telephone by replacing it with another
> 4424LD+ or MLX-20L telephone that you know is working
> properly.
>
> - If only one 4424LD+ or MLX-20L telephone is
>   available, plug that telephone into a jack that you know
>   is working and then retest. If the telephone rings for
>   incoming calls, then the original jack may be faulty; call
>   the Lucent Technologies Helpline at 1 800 628-2888
>   (consultation charges may apply). If the telephone still
>   does not ring, there may be a problem with the system
>   wiring or the control unit; call the Lucent Technologies
>   Helpline.
>
> - If the replacement telephone rings for incoming calls,
>   then replace it with the original telephone and check
>   again. If the original telephone still does not ring for
>   incoming calls, then the original telephone may be
>   defective. Call the Lucent Technologies Helpline at
>   1 800 628-2888 (consultation charges may apply).
>
> - If the replacement telephone does not ring for incoming
>   calls, there may be a problem with the system wiring or
>   the control unit. Call the Lucent Technologies Helpline
>   at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
Single-Line Telephones Ring Back after Completed Call

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Single-Line Telephones Ring Back after Completed Call

Possible Cause 1: The switchhook is pressed and released too quickly after a call is completed.

> **NOTE** Some single-line telephones have a positive disconnect switch. If the switch is set to positive disconnect, Possible Cause 1 does not apply. In this case, skip to Possible Cause 2.

What to do: Instruct the user always to replace the handset carefully for at least one to two seconds between calls. If the problem is not resolved, go to Possible Cause 2.

Possible Cause 2: The telephone may be defective.

What to do: Test the telephone by replacing it with a similar telephone that you know is working.

- If the replacement telephone does not ring back, then replace it with the original telephone and check again. If the original telephone still rings back, then the original telephone may be defective. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

- If the replacement telephone rings back, there may be a problem with the system wiring or the control unit. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
Cannot Transfer Call after Answer on an Outside Line

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Cannot Transfer Call after Answer on an Outside Line

Possible Cause 1: There may be Custom Calling features (for example, Call Waiting or Three-Way Calling) from the local telephone company that are interfering with system timer settings.

> **What to do:** To check whether you have any Custom Calling features, contact your local telephone company representative.
>
> - If you have Custom Calling features, Transfer usually works. When it does not, warn the caller that a loud tone will sound; then dial # while on the call and try to transfer the call again. If you can transfer the call, you have solved the problem. If you cannot, go to Possible Cause 2. If you do not use the Custom Calling features, ask the central office to remove them.
>
> - If you have no custom calling features, go to Possible Cause 2.

Possible Cause 2: The telephone may be defective.

> **What to do:** Test the telephone by replacing it with a similar telephone that you know is working properly.
>
> - If the replacement telephone can transfer a call, then replace it with the original telephone and check again. If the original telephone still cannot transfer a call, then the original telephone may be defective. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
Night Service Not Working

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> • If the replacement telephone cannot transfer a call,
>   there may be a problem with the system wiring or the
>   control unit. Call the Lucent Technologies Helpline at
>   1 800 628-2888 (consultation charges may apply).

Night Service Not Working

NOTES • *Be sure to change the system time appropriately when Daylight
Savings Time starts and when it ends. System time affects the
functioning of several system features, including Automatic Backup,
Night Service, Station Message Detail Recording (SMDR) reports,
stand-alone Auto Attendant systems, Voice Mail, and Reminder
Service.*

• *Night Service with Coverage Control affects the status of Voice Mail
coverage for extensions with programmed Coverage VMS Off
buttons. If you are having problems with this aspect of Night
Service, see "Calls Not Going to Voice Mail" on page 97, beginning
with Possible Cause 3.*

Possible Cause 1: The system time and/or day may be set incorrectly.

> **What to do:** Use system programming to check the setting
> of the system time and date (see Chapter 3 of *System
> Programming*) or check the time at a 4400-Series or MLX
> display telephone.
>
> • If the settings are incorrect, correct them and activate
>   Night Service again. If it is now working, you have
>   solved the problem. If not, go to Possible Cause 2.
>
> • If the settings are correct, go to Possible Cause 2.

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Night Service Not Working

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Possible Cause 2: If the system has Night Service with Time Set, the start and stop time or day of week may be set incorrectly (see Chapter 3 of *System Programming*).

   What to do: Use system programming to check the settings for the Night Service with Time Set daily start and stop times.

   - If the settings are incorrect, correct them and activate Night Service again. If it is now working, you have solved the problem. If not, go to Possible Cause 3.

   - If the settings are correct, go to Possible Cause 3.

Possible Cause 3: The Night Service button may be programmed incorrectly at one or more DLCs.

   What to do: Use centralized telephone programming to check that the button on the DLC operator console is, in fact, programmed for Night Service (see Chapter 4 in *System Programming*); or, at the DLC, press the Inspct button and then the programmed Night Service button.

   - If the Night Service button is not programmed, program it and activate Night Service again. If it is now working, you have solved the problem. If not, go to Possible Cause 4.

   - If the Night Service button is programmed correctly, go to Possible Cause 4.

Possible Cause 4: If the system has more than one operator console and the night destination is a Voice Mail system, one of the consoles may not have Night Service turned On.

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10 Troubleshooting the System
 Night Service Not Working

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What to do: Check that the green light next to the Night Service button at each console is lit.

- If Night Service now works, you have solved the problem.

- If Night Service is still not working, go to Possible Cause 5.

- If Night Service is still not working, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

Possible Cause 5: Lines may not be programmed as part of a Night Service Group. Night Service lines do not have to appear on operator consoles, and lines on operator consoles are not automatically part of that operator's Night Service group; they must be assigned.

What to do: Check the Night Service line assignments, following the instructions for "Night Service Group Assignment" in the "Labeling" section of Chapter 3 of *System Programming*, or in "Revising Night Service with Group Assignments" on page 58 of this quick reference.

- If the lines are correctly assigned, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

- If the lines are not assigned, program them as members of a Night Service group. If Night Service now works, you have solved the problem. If Night Service still does not work, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
Calls Not Going to Voice Mail

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Calls Not Going to Voice Mail

For calls to go to Voice Mail, the extension must be part of a Coverage Group, the Coverage Group must have a receiver, and the receiver must be the Voice Mail Calling Group. A quick way to check this is to review the planning forms for Group Coverage and Group Calling.

NOTE *Calls going across the private network to a Centralized Voice Messaging system may experience problems because of an incorrect setup. See the Network Reference for details.*

Possible Cause 1: The extension may not be a member of a Coverage Group.

> **What to do:** Use system programming to check that the extension is a member of a Coverage Group. (See "Group Coverage Member Assignments" in the "Optional Group Features" section of Chapter 3 of *System Programming*.)
>
> • If the extension is not assigned, assign it, if appropriate. Check to see whether calls are now going to Voice Mail. If they are, you have solved the problem. If not, go to Possible Cause 2.
>
> • If the extension is already assigned, go to Possible Cause 2.

Possible Cause 2: The Coverage Group may not have the Voice Mail Calling Group as its receiver.

> **What to do:** Use system programming to check that the Coverage Group has a receiver and that the receiver is the Voice Mail Calling Group. (See "Group Calling Member Assignments" in the "Optional Group Features" section of Chapter 3 of *System Programming*.)

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 Calls Not Going to Voice Mail

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- If the Voice Mail Calling Group is not assigned as the receiver, assign it, if appropriate. Check to see whether calls are now going to Voice Mail. If they are, you have solved the problem.

- If the Voice Mail Calling Group is assigned as the receiver, go to Possible Cause 3.

Possible Cause 3: Night Service with Coverage Control has automatically activated the extensions' Coverage VMS Off buttons for normal business operation (Night Service Off, no Voice Mail coverage).

If Night Service is On and Night Service with Coverage Control is Enabled, someone at a telephone may have manually overridden the system-wide setting, after it took effect, to prevent Voice Mail coverage at their extension. Follow the instructions in this Possible Cause to check current settings for Night Service On/Off status and Coverage Control. Then, look at the telephone buttons as outlined in Possible Cause 4.

What to do: Check the Night Service button lights at each operator console to see whether Night Service is Off (buttons are not lit).

Use system programming to find out whether Night Service with Coverage Control is Enabled. Follow the instructions for "Night Service with Coverage Control" in Chapter 3 of System Programming, or see "Revising Night Service with Coverage Control" on page 59.

If Night Service with Coverage Control is Enabled and Night Service is Off when you expect it to be On, see "Night Service Not Working" on page 94.

- If Night Service with Coverage Control is disabled, and this is appropriate, Voice Mail coverage is controlled only by the users at extensions. Go to Possible Cause 4.

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10 Troubleshooting the System
  Calls Not Going to Voice Mail

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- If Night Service with Coverage Control is enabled, and this setting is appropriate, users at the extensions should deactivate their Coverage VMS Off or Coverage Off buttons to receive Voice Mail coverage. If Voice Mail still does not work, go to Possible Cause 5.

Possible Cause 4: The user's telephone has Coverage Off or Coverage VMS Off activated. (The user at the telephone can override Night Service with Coverage Control by pressing the programmed Coverage VMS Off button after the last Night Service status change.)

> **What to do:** Check the light next to the programmed Coverage Off button or the programmed Coverage VMS Off button.
>
> - If the light is on, then outside calls do not go to Voice Mail. Press the button to deactivate the feature and to turn the light off. Check to see whether calls are now going to Voice Mail. If they are, you have solved the problem.
>
> - If the lights are off, go to Possible Cause 5.

Possible Cause 5: A call arrives on a Personal Line, but the user is not the owner or principal user of the line.

> **What to do:** Check the programming and do either of the following:
>
> - Change the principal user.
>
> - Remind the user of the telephone that calls coming in on a Personal Line go to the principal user's mailbox only.

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10 Troubleshooting the System
   Calls Not Going to Voice Mail

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Possible Cause 6: Forwarding or Remote Call Forwarding is active.

> **What to do:** Print the Extension Report to determine
> whether Forward is active for that extension. Check the
> telephone to see if the LED next to the Forwarding button is
> lit. If the telephone has no Forwarding button, program one
> on it.

Possible Cause 7: The Voice Mail system may not be working.

> **What to do:** If convenient, check that the power light on the
> Voice Mail system unit is on. For a MERLIN Messaging
> System, a green System Status LED indicates system is on
> and operating properly; a red System Status LED indicates
> the MERLIN Messaging System is out-of-service; and an
> unlit System Status LED indicates the module is not
> powered or has a fault condition. Try placing a call to other
> extensions to see whether the calls go to Voice Mail.
>
> - If the Voice Mail system power light is off (or if the
>   MERLIN Messaging System Status LED is red or off),
>   and/or Voice Mail does not work at other extensions,
>   then the Voice Mail system is not working. Check the
>   system documentation; if it is a Lucent Technologies
>   Voice Mail system, call the Lucent Technologies
>   Helpline at 1 800 628-2888 (consultation charges may
>   apply).
>
> - If the power light is on and Voice Mail works at other
>   extensions, call the Lucent Technologies Helpline at
>   1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
Callers Receiving Incorrect Response from Voice Mail

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Callers Receiving Incorrect Response from Voice Mail

Outside callers who reach the system may get the wrong response when the Voice Mail system answers calls. For example, they may hear an off-hours message during business hours. Calls going across the private network to a Centralized Voice Messaging system may experience problems because of an incorrect setup. See the Network Reference for details.

NOTES • *Calls going across the private network to a Centralized Voice Messaging system may experience problems because of an incorrect setup. See the* Network Reference *for details.*

• *Be sure to change the System Time appropriately when Daylight Savings Time starts and when it ends. System Time affects the functioning of several system features—including Automatic Backup, Night Service, Station Message Detail Recording (SMDR) reports, stand-alone Auto Attendant systems, Voice Mail, and Reminder Service.*

Possible Cause 1: The System Time may be set incorrectly.

> **What to do:** Check the time at the system programming console or another MLX or 4400-Series display telephone. If the time is correct, go to Possible Cause 2.

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10 Troubleshooting the System
Callers Receiving Incorrect Response from Voice Mail

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Possible Cause 2: If system uses the Night Service feature and has more than one operator console, one of the consoles may not have the Night Service button activated.

What to do: Check that the green light next to the Night Service button at each operator's console is on.

- If a green light is off, then Night Service is not activated; press the button to activate Night Service. Place a call to determine whether you get the correct Voice Mail greeting. If you do, you have solved the problem.

- If each green light is on, then Night Service is activated for that operator's console. Go to Possible Cause 3.

Possible Cause 3: The time settings for the Voice Mail system do not match the System Date and Time.

What to do: Follow the instructions in your Voice Mail system documentation to check that the settings match the system. If the settings are correct or if it is a Lucent Technologies Voice Mail system, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
   Calls Not Going to Coverage

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Calls Not Going to Coverage

NOTE *Network-specific coverage problems can occur. See the Network Reference for details.*

Possible Cause 1: An Individual Coverage receiver may not be assigned.

> **What to do:** At the extension that is to receive calls, program a Cover button for the sender's extension. If a Cover button is programmed, go to Possible Cause 2.

Possible Cause 2: The user's telephone has Coverage Off or Coverage VMS Off activated.

> **What to do:** Check the light next to the programmed Coverage Off button or the programmed Coverage VMS Off button.
>
> - If the light is on, then outside calls do not go to Coverage. Press the button to deactivate the feature and to turn the light off. Check to determine whether calls are now going to Coverage. If they are, you have solved the problem.
>
> - If the lights are off, go to Possible Cause 3.

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10 Troubleshooting the System
Calls Not Going to Coverage

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Possible Cause 3: The extension may not be assigned to a Coverage Group.

> **What to do:** Use system programming to check that the extension is a member of a Coverage Group. (See "Group Coverage Member Assignments" in the "Optional Group Features" section of Chapter 3 of *System Programming*.)
>
> - If the extension is not assigned, assign it, if appropriate. Check to determine whether calls are now going to Coverage. If they are, you have solved the problem. If not, go to Possible Cause 4.
>
> - If the extension is assigned, go to Possible Cause 4.

Possible Cause 4: The Coverage Group may not have a receiver assigned.

> **What to do:** Use system programming to check that a receiver is assigned to the Coverage Group (see Chapter 3 of *System Programming*).
>
> **NOTE** *When you call the Helpline, consultation charges may apply. Before calling the Helpline, you may wish to consult the documentation for your voice messaging system.*
>
> - If a receiver is not assigned, assign one, if appropriate. Check to see whether calls are now going to Coverage. If they are, you have solved the problem. If not, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).
>
> - If the receiver is assigned correctly, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
Trouble Hearing Called Party

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Trouble Hearing Called Party

Possible Cause 1: If a speakerphone is being used, there may be environmental factors that affect the performance of the speaker or microphone (for example, too much background noise).

What to do: Eliminate the background noise or other interference. If the problem persists or if a speakerphone is not being used, go to Possible Cause 2.

Possible Cause 2: The telephone handset may be defective.

What to do: Replace the handset with a handset from the same type of telephone. If you can now hear the called party, contact your Lucent Technologies representative to order a new handset. If you still have trouble hearing, go to Possible Cause 3.

Possible Cause 3: The telephone may be defective.

What to do: Test the telephone by replacing it with a similar telephone that you know is working.

• If you can hear the called party on the replacement telephone, then replace it with the original telephone and check again. If you still have trouble hearing the called party on the original telephone, then the original telephone may be defective. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
Programmed Button Fails

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• If you cannot hear the called party on the replacement telephone, there may be a problem with the system wiring or the control unit. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

Programmed Button Fails

NOTE▶ Extension programming is not stored in the telephone itself; therefore, if you move a telephone to a different extension, the programming for the previous telephone at that extension remains in effect. The extension must be reprogrammed as appropriate.

Possible Cause 1: The programmed button may be incorrectly programmed or may not be programmed at all.

You can check the programming of a button at an MLX display telephone by first pressing the Inspct button and then the line button.

What to do: Use centralized telephone programming to check the programming for the telephone's buttons (see Chapter 4 in System Programming).

• If the programming is incorrect, reprogram it. Try to use a programmed button. If the button works, you have solved the problem. If not, go to Possible Cause 2.

• If the programming is correct, go to Possible Cause 2.

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Reminder Messages Received with the Wrong Time

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Possible Cause 2: The telephone may be defective.

> **What to do:** Test the telephone by replacing it with a similar telephone that you know is working properly. Program the buttons as appropriate.
>
> - If the programmed button works properly on the replacement telephone, then replace it with the original telephone and check again. If the programmed button on the original telephone still fails, then the original telephone may be defective. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).
>
> - If the programmed button on the replacement telephone fails, there may be a problem with the system wiring or the control unit. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

Reminder Messages Received with the Wrong Time

NOTE *Be sure to change the System Time appropriately when Daylight Savings Time starts and when it ends. System Time affects the functioning of several system features—including Automatic Backup, Night Service, Station Message Detail Recording (SMDR) reports, stand-alone Auto Attendant systems, Voice Mail, and Reminder Service.*

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10 Troubleshooting the System
Recall/Switchhook Does Not Work

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Possible Cause: The system time may be set incorrectly.

What to do: At the programming console or any MLX or 4400-Series display telephone, check the System Time. If the time is correct, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

Recall/Switchhook Does Not Work

When this problem occurs, pressing the Recall button or switchhook disconnects the call or fails to return a dial tone.

NOTE *If the telephone is a 4400-Series or MLX telephone, pressing the switchhook disconnects the call. On these telephones, you must use a programmed Recall button to activate custom or Centrex calling features.*

Possible Cause 1: The Recall Timer may be set incorrectly.

NOTE *Some single-line telephones have a positive disconnect switch. If the switch is set to positive disconnect, this Possible Cause 1 does not apply. If this is the case, go to Possible Cause 2.*

What to do: Use system programming to check the setting of the Recall Timer system feature (see Chapter 3 of *System Programming*).

- If the setting is less than 650 ms, change the setting to 650 ms or to 1 sec. Have someone place a call to the extension, answer it, and press the Recall button or the switchhook. If you do not disconnect the caller or you

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10 Troubleshooting the System
  Recall/Switchhook Does Not Work

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do get a dial tone, you have solved the problem. If you do disconnect the caller or you do not get dial tone, go to Possible Cause 2.

- If the setting is for 650 ms or for 1 sec, go to Possible Cause 2.

Possible Cause 2: The line may not have Custom Calling features.

What to do: Check with the central office.

- If there are Custom Calling features, obtain instructions on the use of the features and the Recall Timing.

- If there are no Custom Calling features, go to Possible Cause 3.

Possible Cause 3: The telephone may be defective.

What to do: Test the telephone by replacing it with a similar telephone that you know is working properly. Program the buttons as appropriate.

- If the problem is resolved on the replacement telephone, then replace it with the original telephone and check again. If the problem persists on the original telephone, then the original telephone may be defective. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

- If the problem persists on the replacement telephone, there may be a problem with the system wiring or the control unit. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
Calling Group Members Not Receiving Calls

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Calling Group Members Not Receiving Calls

NOTE *A Calling Group on a MERLIN MAGIX system can contain the non-local extension number of a Calling Group on another system in the private network. See the Network Reference for network-specific problems with Calling Groups.*

Possible Cause 1: The Calling Group member's telephone is not available.

> **What to do:** Log the member in by doing one of the following:
>
> • Using the operator's or Calling Group supervisor's DLC, enter supervisory mode by pressing the Feature button, dialing 32, and pressing the Hold button. Check the light next to the Auto Dial or DSS button for the member's extension; it is either off or flashing when the member is unavailable to take calls. Log the member in by pressing a programmed Available button, or by pressing the Feature button and dialing 762, before pressing the Auto Dial or DSS button for the extension. Finally, check to see whether calls to the Calling Group are received. If they are, you have solved the problem. If they are not, go to Possible Cause 2.
>
> • At the member's telephone, do either of the following:
>
>> — If the member's telephone has a programmed Available button and the light next to it is off, the member is logged out. Log the member in by pressing the button. Check whether calls to the Calling Group are now received. If they are, you have solved the problem. If they are not, go to Possible Cause 2.

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Calling Group Members Not Receiving Calls

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— If the member's telephone does not have a programmed button (including single-line telephones), log the member in by dialing #44 while off-hook on an SA or ICOM line. Check whether calls to the Calling Group are now received. If they are, you have solved the problem. If they are not, go to Possible Cause 2.

Possible Cause 2: The lines/trunks may not be assigned to the Calling Group.

What to do: Assign incoming lines to the Calling Group extension number (see Chapter 3 of *System Programming*). If calls on these lines still do not reach the Calling Group members, go to Possible Cause 3.

Possible Cause 3: The queue control setting may be too low, so that callers are receiving a busy signal.

What to do: Consult Chapter 3 of *System Programming* to set the queue control value to a higher number. The factory-set default is 99 calls allowed in the queue, but the value can be set to any number between 0 and 99. If the queue control value is properly set, go to Possible Cause 4.

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Calls Not Receiving Screen Pop

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Possible Cause 4: The telephone may be defective.

> **What to do:** Test the telephone by replacing it with a similar telephone that you know is working. Program the buttons as appropriate.
>
> - If Calling Group calls are received on the replacement telephone, then replace it with the original telephone and check again. If the problem persists on the original telephone, then the original telephone may be defective. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).
>
> - If Calling Group calls are not received on the replacement telephone, there may be a problem with the system wiring or the control unit. Call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

Calls Not Receiving Screen Pop

In systems with a CTI link (Hybrid/PBX mode only), screen pop of caller information occurs when a call arrives at an SA button. The call may be a Calling Group call, a transfer or conference call from a QCC or a DLC that does not use CTI applications, or a PRI call where routing is by dial plan. If the problem occurred at the extension of an overflow Calling Group member, see "Calling Group Overflow Calls Not Receiving Screen Pop" on page 115.

NOTE *Screen pop may or may not work across a private network. See the Network Reference for more details.*

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Possible Cause 1: The call may not have arrived on an SA button.

> **What to do:** The user at the extension may have a Personal
> Line for a call that also arrives on an SA button. If the user
> has not answered the call at a Personal Line button, go to
> Possible Cause 2.

Possible Cause 2: The receiving extension may not be using a CTI link
application.

> **What to do:** Check the system planning form for the
> extension. Then do one of the following:
>
> - If the extension includes an MLX telephone and is not
>   assigned as a PassageWay Telephony Services client
>   extension, this is most likely the cause of the problem.
>   Consult the PassageWay Telephony Services Network
>   Manager's Guide for information about changing the
>   extension's status.
>
> - If the extension is assigned to receive CTI treatment,
>   go to Possible Cause 3.

Possible Cause 3: The call may have been transferred from a monitored
Direct-Line Console (DLC) that is using a CTI link
application.

> **What to do:** Check the system planning form for the DLC
> that transferred the call or consult the DLC operator. Then
> do one of the following:
>
> - If the call was from another source, go to Possible
>   Cause 5.

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- If the DLC is monitored, this is the cause of the problem. If you wish the DLC to be unmonitored, consult the *PassageWay Telephony Services Network Manager's Guide* for information about changing the extension's status.

- If the DLC is unmonitored, the call arrived on an ISDN line routed by dial plan, or the call was transferred or conferenced by a QCC; go to Possible Cause 6.

Possible Cause 4: The loop-start ID delay timer on the 800 GS/LS-ID module is not turned On.

> **What to do:** Turn On the delay timer in system programming.

Possible Cause 5: The call may be an outside call transferred from another non-operator system extension.

> **What to do:** Screen pop shows only the caller information for the inside extension.

Possible Cause 6: The CTI link is not working.

> **What to do:** Check the CTI link.
>
> - Consult the *PassageWay Telephony Services Network Manager's Guide* for troubleshooting information.
>
> - If you cannot solve the problem yourself, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
Calling Group Overflow Calls Not Receiving Screen Pop

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Calling Group Overflow Calls Not Receiving Screen Pop

In systems with a CTI Link (Hybrid/PBX mode only), screen pop of caller information occurs when a call arrives at an SA button of a Calling Group member or overflow Calling Group member.

NOTE Screen pop may or may not work across a private network. See the Network Reference for more details.

Possible Cause 1: The call was not delivered to an SA button.

> **What to do:** In cases where a call is directed to an overflow Calling Group member who has a Personal Line for the call and that member's SA buttons are unavailable, the call can be delivered to the Personal Line and not initiate screen pop. To assure proper delivery, set all Personal Lines on overflow group members' telephones to No Ring. If this is not the problem, go to Possible Cause 2.

Possible Cause 2: The CTI link is not working.

> **What to do:** Check the CTI link.
>
> - Consult the *PassageWay Telephony Services Network Manager's Guide* for troubleshooting information.
> - If you cannot solve the problem yourself, call the Lucent Technologies Helpline at 1 800 628-2888 (consultation charges may apply).

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10 Troubleshooting the System
Secondary Announcements Not Playing as Programmed

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Secondary Announcements Not Playing as Programmed

As many as ten primary delay announcement devices and one secondary device can be assigned to play messages for callers waiting for Calling Group agents. When a delay announcement is first set up or is changed, it may be necessary to adjust the interval between announcements; this interval applies to the delay between the primary and secondary announcements as well as to the interval between repetitions of the secondary announcement (if the secondary announcement is programmed to repeat).

Problems occur when callers do not experience the Delay Interval programmed and they do not hear the secondary announcement when you planned it. The seriousness of the problem can be analyzed through the use of a programmed Calls-in-Queue Alarm button that responds to tiered alarm thresholds.

NOTE *The* Feature Reference *includes detailed information about setting up Group Calling delay announcements and other Calling Group options. Consult the* Feature Reference *and* System Programming *as you troubleshoot announcement delays.*

To analyze a problem with secondary announcements, follow these preliminary steps:

1 The Calls-In-Queue Alarm Threshold setting should determine when an alarm is signalled. Set the Overflow Threshold Time to 0.

2 Set up primary and secondary announcements of durations that seem appropriate for your needs.

3 Specify a reasonable announcement interval (for example, 30 seconds).

4 Refer to the following table and divide the announcement interval (Y) by the length of the secondary announcement (Z).

5 Round off the result, and use this value as an alarm threshold when a Calls-in-Queue Alarm button signals a problem.

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Secondary Announcements Not Playing as Programmed

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Checking the Effectiveness of Delay Announcements

Calls Waiting for Secondary Announcement (N)	Length of Secondary Announcement in Seconds (Z)	Announcement Interval in Seconds (Y)	N * Z	Is N * Z > Y?
3	10	30	30	No
3	20	30	60	Yes
5	15	90	75	No
10	15	90	150	Yes

When the number of calls waiting for a secondary announcement multiplied by the length of that announcement is greater than the announcement interval, an alarm is triggered. The preceding table illustrates situations where a programmed Calls-in-Queue Alarm button would or would not indicate a problem.

If problems arise, use the display at the Calling Group supervisor DLC console to monitor the situation while the problem is most severe. Try to adjust the announcement duration and the interval setting so that the announcement interval is greater than or equal to the length of the secondary announcement multiplied by the number of calls waiting for the secondary announcement ($Y >= N * Z$).

Possible Cause 1: The announcement interval may be too short or the secondary announcement may be too long.

> **What to do**: Check the number of callers waiting when the alarm goes off, as well as the Delay Interval and the length of the secondary announcement.
>
> • If only a few callers are waiting when an alarm is signalled, increase the announcement interval or shorten the secondary announcement to solve the problem (see the second example in the preceding table).

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Secondary Announcements Not Playing as Programmed

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- If more than a few callers are waiting, go to Possible Cause 2.

Possible Cause 2: The primary announcement or announcements require adjustment.

What to do: Depending upon your customer needs and current Group Calling options, do one of the following to decrease the queue for the secondary announcement:

- If you are using several primary announcements, decrease the number of primary announcements.

- If the primary announcement is very short, increase its length so that customers are not immediately sent to the secondary announcement queue.

- If neither of the above conditions applies, go to Possible Cause 3.

Possible Cause 3: The secondary announcement is set to repeat, and too many callers are waiting to hear the repeated announcement.

What to do: Set the Repeat option for the secondary announcement to Off. If the secondary announcement is not set to Repeat, go to Possible Cause 4.

Possible Cause 4: Because the secondary announcement is shared by more than one Calling Group, callers are waiting too long to hear it.

What to do: Make the secondary announcement exclusive to the group whose callers are experiencing the problem. If the announcement is not shared, go to Possible Cause 5.

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Secondary Announcements Not Playing as Programmed   119

Possible Cause 5: The secondary announcement device is also providing the primary announcement, so that too many callers are waiting for the secondary announcement.

> **What to do:** Set up a separate secondary announcement. If one announcement is not serving as both primary and secondary, go to Possible Cause 6.

Possible Cause 6: The Calling Group is set to use the Prompt-Based Overflow setting that allows callers to dial # in response to a delay announcement, so that they can be connected to a Voice Mail system or other overflow receiver. The system lacks sufficient Touch-Tone Receivers (TTRs), however, to handle the callers' requests. If you are not using this setting, go to Possible Cause 7.

> **What to do:** Depending upon your customer needs, do one of the following to make more TTRs available:
>
> - Shorten the length of the Primary Delay Announcement that includes the prompt to dial #.
>
> - Decrease the number of primary delay announcement devices.
>
> - Provide more TTRs for the Calling Group. For information about your options, consult your Lucent Technologies representative.
>
> - Stop using the Prompt-Based Overflow setting. Modify the recording on the delay announcement accordingly.
>
> - If none of these options cures the problem, or if the prompted requests do not seem to be the cause, go to Possible Cause 7.

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10 Troubleshooting the System
Other or Unresolved Problems

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Possible Cause 7: There are not enough agents to service the call volume.

> **What to do:** Log in additional agents or increase the number of agents in the group.

Other or Unresolved Problems

If you have a problem not listed in this chapter, or if after you complete the appropriate troubleshooting procedure, the problem persists, call the Lucent Technologies Helpline at 1 800 628-2888 for further assistance (consultation charges may apply). When you call the Helpline, use a copy of the System Information Sheet at the front of this guide to note a few details about your system, along with troubleshooting information.

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A System Information
Line/Trunk and Extension Modules
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A System Information

The tables in this appendix provide additional information about the system components described in Chapter 1.

Line/Trunk and Extension Modules

The system supports 16 different types of modules that vary in the types of lines/trunks that they support and the types of telephones or other equipment that can be connected to them. The following table describes the line/trunk extension modules in detail.

The names of the modules identify their capacities and capabilities. The first digit tells you the number of line/trunk jacks a module supports, while the last two digits describe the number of extension jacks it supports. Letters can follow to indicate the type of trunk it supports—that is, *LS* for *loop-start* and *GS* for *ground-start*; if the number indicates line/trunk support and no letters follow, the module supports trunks.

An example of a module name is the 408 GS/LS-ID MLX module. It provides four line/trunk jacks and eight MLX extension jacks, supports ground-start and loop-start trunks, and provides Caller ID.

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Line/Trunk and Extension Modules

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Line/Trunk and Extension Modules

Module	Line/Trunk	Description
008 MLX[1]	none	**Capacity**: 8 digital extension jacks; each extension jack is assigned two extension numbers. The second extension number is used for the device connected to the Multi-Function Module (MFM) installed in the MLX telephone. **Supports**: MLX extensions, including: — MLX voice only — MLX voice with Voice Announce to Busy — MLX voice and MFM with T/R adjunct — MLX voice and MFM with Supplemental Station Adapter (SSA) — ISDN terminal adapter only — Access device for data communications between a PC on the system and a high-speed Internet connection, connection to remote node LAN access server, or ISDN router — Computer Telephony Integration (CTI) link — Videoconferencing systems using one jack and 2B data feature or 2 jacks with ISDN terminal adapters (depending on video system)
008 OPT[2]	none	**Capacity**: 8 T/R extensions on 2-way voice transmission path with support for telephones with message-waiting lights, 2 TTRs **Supports**: On-premises or off-premises single-line telephones
016 (T/R)[1]	none	**Capacity**: 16 T/R extensions on 2-way voice transmission path with support for telephones with message-waiting lights, 4 TTRs **Supports**: Single-line telephones; Intuity AUDIX®; Octell 100; T/R adjuncts (such as answering or fax machine); analog data devices (such as modems)

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Line/Trunk and Extension Modules

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Line/Trunk and Extension Modules <BlueItalic9>Continued<BlueDingbat9>Ø

Module	Line/Trunk	Description
016 ETR[1]	none, TTR	**Capacity**: 16 ETR extension jacks including 6 with T/R functionality and 4 TTRs. First 10 jacks are ETR only; remaining 6 jacks can support either T/R or ETR, but not both simultaneously.
		Supports: MLS, ETR, Business Cordless 905, and TransTalk 9031 MDW telephones, and any T/R device.
016 MLX[1]	none	**Capacity**: 16 digital extension jacks; each extension jack is assigned two extension numbers. The second extension number is used for the device connected to the MFM installed in the MLX telephone.
		Supports: MLX extensions, including:
		— MLX voice only
		— MLX voice with Voice Announce to Busy
		— MLX voice and MFM with T/R adjunct
		— MLX voice and MFM with SSA
		— ISDN terminal adapter only
		— Access device for data communications between a PC on the system and a high-speed Internet connection, connection to remote node LAN access server, or ISDN router
		— CTI link
		— Videoconferencing systems using 1 jack and 2B data feature or 2 jacks with ISDN terminal adapters (depending on video system)

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Line/Trunk and Extension Modules

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Line/Trunk and Extension Modules <BlueItalic9>Continued<BlueDingbat9>Ø

Module	Line/Trunk	Description
024 TDL	none	**Capacity**: 24 digital extension jacks; each extension jack is assigned 2 extension numbers. The second extension number can be used as a "phantom" extension (for example, for voice mail configurations). **Supports**: 4400, 4400D, 4406D+, 4412D+, 4424D+, and 4424LD+ telephones
100D[1]	T1 or PRI	**Capacity**: 24 channels ("virtual" lines/trunks) for voice and analog data or for digital data only (T1); or 23 B-channels for voice and data, and 1 channel used for signaling (PRI). Supports private networking in Hybrid/PBX mode only. **Supports**: T1 emulates 24 lines/trunks: loop-start, ground-start, tie, and Direct Inward Dial (DID; Hybrid/PBX mode only); can also supply subscriber services. T1 can also provide high-speed (56K) data communications and digitally emulated tie trunks for data communications. PRI supports subscriber services, allows high-speed digital data communications, and includes special features. Common Channel Signaling (CCS) is not an option for T1.

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Line/Trunk and Extension Modules

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Line/Trunk and Extension Modules <BlueItalic9>Continued<BlueDingbat9>Ø

Module	Line/Trunk	Description
100R	T1 or PRI	**Capacity**: 24 channels ("virtual" lines/trunks) for voice and analog data or for digital data only (T1); or 23 B-channels for voice and data, and 1 channel used for signaling (PRI). Supports private networking in Hybrid/PBX mode only.
		This module provides the same functionality as the 100D module with the addition of an on-board data router and an on-board Channel Service Unit (CSU)/Data Service Unit (DSU) which provide fast access to the Internet without requiring an external CSU/DSU.
		➤**NOTE:** Common-channel signaling is not an option for T1 but is not blocked in system programming. If common-channel signaling is assigned to the 100R, the module will not operate.
		Supports: T1 emulates 24 lines/trunks: loop-start, ground-start, tie, and Direct Inward Dial (DID; Hybrid/PBX mode only); can also supply subscriber services. T1 can also provide high-speed (56K) data communications and digitally emulated tie trunks for data communications. PRI supports subscriber services, allows high-speed digital data communications, and includes special features. Common Channel Signaling (CCS) is not an option for T1.
400 EM	Tie trunk	**Capacity**: 4 analog tie trunks **Supports**: Networking in Hybrid/PBX mode only

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Line/Trunk and Extension Modules

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Line/Trunk and Extension Modules <BlueItalic9>Continued<BlueDingbat9>Ø

Module	Line/Trunk	Description
408 GS/LS-ID-MLX[1]	GS or LS	**Capacity**: 4 ground-start and/or loop-start lines/trunks, 8 digital extension jacks for MLX extensions, including:
		— MLX voice only
		— MLX voice with Voice Announce to Busy
		— MLX voice and MFM with T/R adjunct
		— MLX voice and MFM with SSA
		— ISDN terminal adapter only
		— Access device for data communications between a PC on the system and a high-speed Internet connection, connection to remote node LAN access server, or ISDN router
		— CTI link
		— Videoconferencing systems using 1 jack and 2B data feature or 2 jacks with ISDN terminal adapters (depending on video system)
		Supports: 1 PFT telephone; Caller ID
412 LS-ID-TDL	LS, TTR	**Capacity**: 4 LS trunks with Caller ID plus 12 digital extension jacks and 4 TTRs. Each extension jack is assigned two extension numbers. The second extension number can be used as a "phantom" ext. (for example, for voice mail configurations).
		Supports: 4400, 4400D, 4406D+, 4412D+, 4424D+, and 4424LD+ telephones
800 NI-BRI[1]	BRI	**Capacity**: 8 BRI facilities, each with 2 B-channels ("virtual" lines) for voice and data and 1 channel used for signaling
		Supports: Voice, data, video, and other services at 64 kbps over standard ISDN lines/trunks
800 DID	DID, TTR	**Capacity**: 8 lines/trunks, 2 TTRs

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Line/Trunk and Extension Modules

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Line/Trunk and Extension Modules <BlueItalic9>Continued<BlueDingbat9>Ø

Module	Line/Trunk	Description
800 GS/ LS-ID[1]	GS or LS	**Capacity**: 8 ground-start and/or loop-start lines/trunks; 2 TTRs
		Supports: 2 PFT telephones; Caller ID (loop-start trunks only), if you subscribe to caller identification from the local telephone company, displays the name and number of incoming callers on 4400-Series, MLX, MLS, and ETR display telephones
MERLIN Messaging[3]	none	**Capacity**: 7 internal, system-defined T/R jacks; 2 TTRs; internal remote maintenance device; serial port for PC connection
		Supports: MERLIN Messaging System resides on this module

1 For newer vintages of this module, firmware can be upgraded by using a PCMCIA card.

2 The system software recognizes the OPT module as having 12 jacks. Even though the OPT module has only 8 jacks, it uses 12 ports of capacity, thereby decreasing overall extension capacity by 4 extensions for every OPT module.

3 The system assigns 12 logical IDs and extensions to the MERLIN Messaging module. The first 6 are available for use as MERLIN Messaging ports and the 12th is used by the Remote Maintenance Device (RMD). The 7th –11th are not used and are not available for other tip/ring devices or applications.

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A System Information
  Auxiliary Equipment

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Auxiliary Equipment

The following table provides a list of other equipment that is available for use with the system. If you are interested in adding any of this equipment, contact your Lucent Technologies representative or authorized dealer.

Auxiliary Equipment

Equipment Type	Description
Alerts (AC)	Any audible or visual alert—such as an external ringer—that operates on 20–30 Hz ringing signals. These alerts are associated with a specific extension (MFM in T/R mode or connected to T/R extension jack).
Alerts (DC)	Any audible or visual alert—such as a bell, chime, or strobe—that operates on 48-VDC ringing signals. These alerts are associated with a specific extension (MFM in SSA mode) or work on a programmed trunk port (external alert).
Answer/record machine	An industry-standard answering machine or remote answering system telephone with the ability to recognize 600-ms disconnect signal or other means of automatic disconnect.
Cordless telephone	Must have Touch-Tone dialing capability when connected via a Multi-Function Module (MFM); rotary or Touch-Tone dialing can be used on a T/R port.
Credit card verification terminal	Must have Touch-Tone dialing capability when connected via an MFM; rotary or Touch-Tone dialing can be used on a T/R port.
Dial dictation	A device that requires contact closure can be used on an LS/GS line jack only with PagePAC®.

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A System Information
Auxiliary Equipment

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Auxiliary Equipment <BlueItalic9>Continued<BlueDingbat9>Ø

Equipment Type	Description
Direct Station Selector (DSS)	Connects to telephones to enhance call handling capabilities of operator and programming consoles. A maximum of 2 DSSs can be connected to an operator console.
	The DSS 4450—which is nearly identical to the DSS that works with the MLX telephones—is used with the 4424D+ and 4424LD+ telephones. An auxiliary power supply is required, and is ordered separately, when one or more DSSs is connected to a 4424D+ telephone. The 4424LD+ telephone requires an auxiliary power supply whether or not a DSS is connected; the auxiliary power supply automatically comes with the 4424LD+ telephone.
	If 2 DSSs are connected to an MLX-20L or MLX-28D telephone, an auxiliary power supply is also required.
Fax machine	Must have Touch-Tone dialing capability when connected via an MFM; rotary or Touch-Tone dialing can be used on a T/R port. Rotary must be enabled if rotary dialing is used.
Group Calling delay announcement	An industry-standard device which must provide automatic disconnect. Each of the 32 Calling Groups can have its own announcement (up to 10 primary and 1 secondary for each Calling Group). A device can provide delay announcement for more than one group.
Headset for Multiline 4400-Series, MLX, MLS, and ETR telephones	Connects to multiline 4400-Series, MLX, MLS, and ETR telephones via a modular base unit for hands-free telephone operation.
Loudspeaker Paging	External paging system using dual-tone multi-frequency (DTMF) signaling connected to an LS or GS line jack. CPE paging systems require an interface unit; if CPE has 2-wire input, the PagePal interface can be used.

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Auxiliary Equipment

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Auxiliary Equipment <BlueItalic9>Continued<BlueDingbat9>Ø

Equipment Type	Description
Message Waiting indicator unit	Connects directly to single-line telephones.
Modem	If the modem supports Touch-Tone dialing via the associated data terminal, the keyboard can be used for dialing. If the modem does not support Touch-Tone dialing, a single-line telephone can be used for dialing.
Music-On-Hold	Any FCC-registered 8-ohm music source or recorded announcement device. If you use equipment that re-broadcasts music or other copyrighted materials, you may be required to obtain a copyright license from and pay license fees to a third party such as the American Society of Composers, Artists, and Producers (ASCAP) or Broadcast Music Incorporated (BMI). Or you can purchase a Magic On Hold system, which does not require such a license, from Lucent Technologies or an authorized dealer.
SMDR printer	Connects to upper RS-232-C jack on the processor module. Must be located within 50 feet of the control unit, or an ADU and peripheral interface unit can be used to extend distance.
Speakerphone	Connects directly to single-line telephones.

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A System Information
Features and Programming Codes

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Features and Programming Codes

The versatility and power of the system are due, in large part, to the variety of feature settings and services it can provide. The system provides traditional features, such as Transfer and Call Waiting, as well as advanced features, such as Coverage and Park. The table below lists all system features and provides the programming codes used to program the feature. For a detailed description of each feature, see the *Feature Reference.*

NOTE *You cannot select features from the display of a 4400D or 4406D+ telephone.*

Features and Programming Codes

Feature	Programming Code
Account Code Entry	`*82`
Alarm[1]	`*759`
Authorization Code	`*80`
Auto Dial	
Multiline 4400-Series, MLX, ETR, and MLS telephones	
Inside (ext., group, zone)	`*22` + ext. no.
Outside	`*21` + tel. no.
4400, 4400D, single-line telephones (see Personal Speed Dial)	
Automatic Line Selection	
Begin Sequence	`*14`
End Sequence	`**14`
Barge-In[1,2]	`*58`
Call Waiting	
On	`*11`
Off	`**11`

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A System Information
Features and Programming Codes

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Features and Programming Codes <BlueItalic9>Continued<BlueDingbat9>Ø

Feature	Programming Code

Callback
  Automatic
    On
    Off
  Selective
	
	*12
	**12
	*55

Caller ID Number/Name Toggle Button[3]	*763
Camp-On	*57
Conference	*772

Coverage
  Receiver buttons
    Group
    Primary
    Secondary
  Sender buttons
    Cover inside and outside calls
    Cover outside calls only
    Coverage Off
  Coverage VMS Off
	
	*42 + ext. no.
	*40 + ext. no.
	*41 + ext. no.
	
	*48
	**48
	*49
	*46

Data Status	*83 + ext. no.
Direct Voice Mail	*56

Directories
  Extension Directory
  Personal Directory
  System Directory
	
	(display only)
	(display only)
	(sys. prog.)

Do Not Disturb[4]	*47

Drop
  MLX, ETR, and MLS telephones
    ETR Drop button
  Multiline 4400-Series telephones
    4400-Series Drop button
	
	*773
	*777
	*771
	*787

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Features and Programming Codes

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Features and Programming Codes <BlueItalic9>Continued<BlueDingbat9>Ø

Feature	Programming Code
Extension Status Direct-Line Console[1] Status Off Status 1 Status 2 Telephones (rooms or agents) Status 1 Status 2	 *760 *761 *762 *45 *44
Feature Button	*20
Forward Activate Forward (inside) Remote Call Forward (outside) Centrex Transfer via Remote Call Forward	 *33 *33 *33 + dial-out code or * + optional pauses + tel. no. + #
Group Calling In-Queue Alarm button Calling Group supervisor[1] Member available Member unavailable Calling Group members Sign in (Available)	 *22 + Calling Group ext. no. *762 *760 *44
Group Page Auto Dial Button	*22 + Paging Group ext. no.
Headset Options Auto Answer Hang Up[2] Mute (Headset/Handset) Status	 *780 *781 *783 *782
Inspect Button (Multiline 4400-Series telephones only)	*778

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Feature	Programming Code
Intercom buttons Assign buttons[2] ICOM (Default Ring) ICOM Originate Only Change button type Ring Voice	 *16 *18 **19 *19
Messaging	
Leave Message	*25
Message LED Off (for non-display telephones)	*54
Message operation mode (for 4406D+, ETR, and MLS display telephones)[5]	*54
Posted Message	*751
Send/Remove Msg[1]	*38
Receiving Messages Delete Message[6] Delete Message (for 4400, 4400D, single-line telephones) Next Message[6] Return Call[6] Scroll[6]	 *26 *25 within 15 seconds of entering extension no. *28 *27 *29
Night Service[1]	*39
Notify	
Send	*757 + ext. no.
Receive	*758 + ext. no.
Park	*86
Park Zone Auto Dial[1]	*22 + Park Zone
Personal Speed Dial	# + (01–24) +*21 + tel no. +##
Personalized Ringing	*32 + ring (1–8)

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Feature	Programming Code
Pickup	
General use	*9
Specific extension	*9 + ext. no.
Specific line	*9 + line no.
Group	*88
Privacy On	*31
Recall	*775
Redial (4400, ETR, and MLS telephones only)[7]	*84
Reminder Service	
Set[8]	*81
Cancel	**81
Missed[1]	*752
Ringing/Idle Line Preference	
On	*343
Off	*344

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Feature	Programming Code
Ringing Options	
Individual lines	
Immediate ring	*37
Delay ring	*36
No ring	*35
All lines	
Immediate ring	*347
Delay ring	*346
No ring	*345
Abbreviated ring	
On	*341
Off	*342
Send Ring (Shared SA)	
On	*15
Off	**15
Saved Number Dial	*85
Send/Remove Message[1]	*38
Service Observing[2]	*59 + ext. no.
Signal (manual)	*23 + ext. no.
System Access buttons	
Assign buttons[2]	
SA (Default Ring)	*16
SA Originate Only	*18
Shared SA	*17 + primary ext. no.
Change type (SA or Shared SA)	
Ring	**19
Voice	*19

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Feature	Programming Code
System Speed Dial	*24 + code (600–729)
Transfer	*774
Voice Announce	
On	*10
Off	**10
VA on Idle Only (MLX telephones only)	*130

1 System operator feature only.

2 Centralized telephone programming only.

3 You cannot program a button on a 4400D telephone, but you can use the feature by dialing #763.

4 Does not work for 4400/4400D telephones.

5 For the 4406D+, MLS, and ETR display telephone user, pressing *54 enters/exits Message operation mode. MLS telephones return to normal call handling after 15 seconds if the user has no messages. If MLS telephone users have messages, they must delete them or use the feature code or programmed button to exit Message operation mode. 4400-Series and ETR telephone users must use the feature code or programmed button to exit Message operation mode whether or not they have messages.

6 Display telephones only. Programming codes are used for ETR and MLS telephones. Feature codes are used for 4400, 4400D, ETR, and MLS telephones.

7 The 4400-Series telephones (excluding the 4400 telephone) have a fixed Redial button.

8 U.S. English only: time is 12-hour (0100-1259) + 2 (A) or 7 (P); Canadian French and Latin American Spanish: time is 24-hour (000-2359).

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Applications

Numerous add-on products, called applications, are available to enhance the system. Appendix I, "Applications," in the *Feature Reference* provides a description of all available applications. Brief descriptions of some of these applications are provided in the following table.

Applications

Application	Description
Automated Attendant	Answers incoming calls, provides callers with a menu of choices, such as people or departments, and then transfers the call as prompted by the caller using a Touch-Tone telephone.
Voice messaging systems	May include Automated Attendant, voice mail services, and/or fax messaging services. One or more MERLIN MAGIX systems can share the voice messaging system (VMS) of another system in a private network. See the *Network Reference* for details.
Voice mail services	Enable system users, for example, to send voice messages to other users, to forward voice messages with comments, and to return a call. Callers can record messages for system users.
Fax messaging services	Automate the sending, receiving, call handling, and storage of faxes, in much the same way voice messaging systems handle voice messaging.
Call accounting applications	Manage telephone usage by tracking and sorting telephone costs and producing reports on costs.

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Application	Description
Call management applications	Answer and distribute calls to members of specified groups—for example, ticketing agents.
PassageWay Direct Connection Solution	Provides an interface between an extension and a PC with Microsoft® Windows®, as well as provides utilities and allows the integration of Windows applications with telephone activities.
Group and desktop videoconferencing and data exchange applications	Allow multimedia interaction among people who work together but are geographically distant.
Computer Telephony Integration (CTI) link	For connection to Local Area Networks (LANs), the connection is made through a programmed MLX extension jack. The link allows calls on System Access buttons to be monitored and controlled from workstations connected on a LAN to a server running Novell® NetWare® software or Windows NT®. The link supports applications such as pop-up database information about a caller.

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System Capacities

The following table lists the hardware and software capacities of the system.
Some constraining factors appear with a checkmark (✔). These are discussed in
detail in the next table.

Hardware and Software Capacities

	Limit	**Constraining Factor**
100D/100R Module (maximum 2 per carrier)	3	✔
800 NI-BRI Module (maximum 3 per carrier)	5	
Account Codes		
Characters per code	16	
Allowed/Disallowed Lists		
Number of lists	8	
Entries per list	10	
Digits per entry	7	
Authorization Codes	400	
Digits per code	11	
Automatic Route Selection (ARS)		
Number of ARS tables	16	
Subpatterns per table	2	
Routes per subpattern	6	
Entries per table	100	
Entries across all tables	1600	
Default tables	4	
Callback Calls in Queue	64	

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Hardware and Software Capacities *<BlueItalic9>Continued<BlueDingbat9>Ø*

	Limit	**Constraining Factor**
Calling Groups		
Number of groups	32	
Members per group		✔
Local extensions only	20	
Non-local extensions only	1	
Total agents and supervisors	200	
Total supervisors	8	
Groups per member	1	
Primary delay announcements per system	200	
Secondary delay announcements per system	32	
Primary delay announcements per group	10	✔
Secondary delay announcements per group	1	✔
Groups per delay announcement	32	
External alerts per group	1	
Coverage groups per group	1	
Priority Queuing		
Support group	31 home	
Home group	1 support	
Carriers	3	
Line/trunk and extension module slots per basic carrier	5	✔
Line/trunk and extension module slots per expansion carrier	6	
Maximum slots available for line/trunk and extension modules	17	

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Hardware and Software Capacities <BlueItalic9>Continued<BlueDingbat9>Ø

	Limit	**Constraining Factor**
Coverage Groups		
Number of groups	30	
Senders per group	400	✔
Groups per sender	1	
Receiver buttons per group	8	
Groups per QCC receiver	30	
CTI Link	1	✔
Data Hunt Groups		
Number of groups	32	
Members per group	20	
Groups per member	1	
Direct Inward Dialing		
Number of blocks	2	
Number of trunks	80	
Directories		
System Directory	1	
Listings	130	
Extension Directory	1	
Listings	200	
Personal Directory	48	
(4424LD+ and		
MLX-20L telephones only) Listings	50	
Endpoints (devices)	400	
Extensions		
Total physical jacks	200	
Total endpoints	400	
Fax machines with Message Waiting	16	✔

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Hardware and Software Capacities <BlueItalic9>Continued<BlueDingbat9>Ø

	Limit	**Constraining Factor**
Lines/Trunks	80	
Message Waiting Lamp Messages	1499	
Night Service		
Groups	8	
Members per group	400	
Calling Groups per group	1	
Groups per member	8	
Emergency Allowed List entries	10	
Park codes (number of codes)	8	
Personal Lines	64	
Pool Buttons	64	
Ports (not simultaneously)		
Voice Announce to Busy extensions	200	
Voice Messaging Interface (VMI)	24	✔
ISDN Terminal Adapter	200	
Paging	3	
Primary delay announcements	200	✔
Secondary delay announcements	32	✔
Remote Access		
Number of barrier codes	16	
Digits per code, system-wide	4–11	
Service Observing Groups		
Number of groups	16	
Observers per group	1	✔
Members per group	400	✔

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	Limit	**Constraining Factor**
Shared System Access Buttons		
Number of buttons per principal extension	27	
Speed Dial		
Personal Speed Dial		✔
Entries per telephone	24	
Entries per system	1200	
Digits per entry	28	
System Speed Dial		
Entries per system	130	
Digits per entry	40	
System Operator Consoles		
Direct-line consoles (DLCs)		✔
4424D+ or 4424LD+	8	
MLX-20L or MLX-28D	8	
Queued Call Consoles (QCCs)		
4424LD+ or MLX-20L	4	
Combination of DLCs plus QCCs	8	✔
DSSs	16	
Number of consoles per module		
408 GS/LS-ID-MLX or 008 MLX	2	
016 MLX or 024 TDL	4	
System Programming Equipment		✔
4424LD+ or MLX-20L telephone	1	
RS-232 jack for PC with WinSPM	1	
Modem (built-in processor module)	1	

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Hardware and Software Capacities *Continued* Ø

	Limit	**Constraining Factor**
Telephones (not simultaneously)		
4424LD+ or MLX-20L	48	✔
All other MLX telephones (with/without ISDN terminal adapter/MFM)	200	✔
All other 4400-Series telephones	200	✔
Single-line	200	✔
MLS/ETR	200	✔
Power failure transfer	20	
Two-Party Conversations	108	
Voice Messaging Systems	24	

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Constraints Identified in Hardware and Software Capacities Table

	Constraints
100D/100R Module	The system recognizes the 100D and 100R modules as the same module. If the system contains both modules, the combination of both modules cannot exceed the limit of 2 per carrier and 3 per system.
Calling Groups	**Members of Groups**. QCCs cannot be members of Calling Groups because the QCC position is set up as a system operator and has its own queue that is different from the group's queue.
	Members per Group. The maximum number of local extensions in a Calling Group is 20. The maximum number of non-local extensions in a Calling Group is 1. A Calling Group cannot contain both local and non-local extensions.
	Primary and Secondary Delay Announcements. Up to 10 primary and 1 secondary announcement device can be designated for each Calling Group. Each announcement device decreases the 200 tip/ring station capacity.
Carriers	The first slot of the basic carrier is used for the processor module with a maximum of 5 port/board slots.
Coverage Groups	**Senders per Group**. QCCs cannot be senders because they do not have coverage available and use Position-Busy instead.
CTI Link	One CTI link is supported in Hybrid/PBX mode only.
Fax Machines with Message-Waiting	The system can support more than 16 fax machines, but those in excess of 16 cannot use fax message waiting indication.

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Constraints Identified in Hardware and Software Capacities Table

	Constraints
Ports (not simultaneously)	**Voice Messaging Interface**. Although the system software supports up to 24 VMI ports, all VMI ports must be in the same Calling Group, and the maximum number of extensions in a Calling Group is 20.
	Primary and Secondary Delay Announcements. Up to 10 primary and 1 secondary announcement devices can be designated for each Calling Group. Each announcement device decreases the 200 tip/ring station capacity.
Service Observing Groups	A Service Observer station must be an MLX telephone (except QCC or CTI link). A Service Observing group member station may be any telephone except a QCC or CTI link. Maximum number of members per Service Observing group is equal to the maximum number of extensions in the system.
	Service Observing may be subject to federal, state, or local laws, rules, or regulations or require the consent of one or both of the call parties. You must check in your jurisdiction and comply with all applicable laws, rules, and regulations before using this feature. Failure to comply may result in severe penalties.
Speed Dial	**Personal Speed Dial**. Single-line and 5- or 10-button telephones.

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Constraints Identified in Hardware and Software Capacities Table

	Constraints
System Operator Consoles	**DLCs**. Two consoles are allowed for each 008 MLX, 408 GS/LS-ID-MLX, or 412 LS-ID-TDL module. Up to 4 consoles may be connected to an 016 MLX or an 024 TDL module. A maximum of 8 consoles is allowed per system. Up to two DSSs can be attached to an operator console.
	QCCs. In Hybrid/PBX mode only. Two consoles are allowed for each 008 MLX, 408 GS/LS-ID-MLS, or 412 LS-ID-TDL module. Four consoles are allowed for each 016 MLX or 024 TDL module. Up to 4 consoles are permitted on a system.
System Programming Equipment	Remote Access overrides onsite programming except during backup or restore.
Telephones (not simultaneously)	**4424LD+ and MLX-20L**. RAM limit and the total includes the 4424LD+ or MLX-20L telephone used for system programming.
	All other 4400-Series and MLX Telephones. RAM limit. An MFM and an ISDN terminal adapter cannot be connected to the same MLX telephone (including the MLX-20L) at the same time.
	Single-Line. Software dial plan limit.
	Power Failure Transfer. One for each 4 LS/GS line/trunk jacks.
	MLS/ETR. RAM limit.
	Distance limitations. All telephones within 1000 feet of the control unit, except 4400-Series and MLX telephones. 4400-Series telephones with 26-gauge wire must be within 2000 feet; with 24-gauge wire within 3000 feet. MLX telephones must be within 3000 feet. IROBs if needed.

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Related Documents

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Related Documents

The documents listed in the following table are part of the MERLIN MAGIX documentation set. Within the continental United States, contact the Lucent Technologies BCS Publications Center by calling 1 800 457-1235.

MERLIN MAGIX Documentation Set

Document No.	Title
System Documents:	
555-710-100	*Customer Documentation Package:* Consists of paper versions of the *System Manager's Quick Reference*, the *Feature Reference*, and *System Programming*
555-710-110	*Feature Reference*
555-710-111	*System Programming*
555-670-112	*MERLIN LEGEND® Communications System, Release 7.0, System Planning*
555-710-112	*System Planning Supplement*
555-710-113	*System Planning Forms*
555-710-119	*System Manager's Quick Reference*
555-610-150	*MERLIN LEGEND® Communications System, Release 6.1, Network Reference*
555-710-800	*Customer Reference CD-ROM:* Consists of the *System Manager's Quick Reference*, the *Feature Reference*, *System Programming*, and the *Network Reference*

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Document No.	Title
Telephone User Support:	
555-710-123 (U.S. English)	*4400/4400D Telephone User's Guide*
555-710-123FRC (Canadian French)	*4400/4400D Telephone User's Guide*
555-710-127 (U.S. English)	*4406D+, 4412D+, 4424D+, and 4424LD+ Telephone User's Guide*
555-710-127FRC (Canadian French)	*4406D+, 4412D+, 4424D+, and 4424LD+ Telephone User's Guide*
555-660-122	*MLX Display Telephone User's Guide*
555-630-150	*MLX- 5D, MLX-10D and MLX-10DP Display Telephone Tray Cards* (5 cards)
555-630-152	*MLX-28D and MLX-20L Telephone Tray Cards* (5 cards)
555-660-124	*MLX-5® and MLX-10® Nondisplay Telephone User's Guide*
555-630-151	*MLX-5 and MLX-10 Nondisplay Telephone Tray Cards* (6 cards)
555-630-155	*MLX-16DP Display Telephone Tray Cards* (5 cards)
555-670-151	*MLS and ETR Telephone Tray Cards*
555-670-152	*MLS and ETR Telephone Tray Cards* (16 cards)
555-660-126	*Single-Line Telephones User's Guide*
555-660-138	*MDC and MDW Telephones User's Guide*
System Operator Support:	
555-710-134	*Digital Direct LIne Console Operator's Guide*
555-710-136	*Digital Queued Call Console Operator's Guide*

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Document No.	Title
Miscellaneous User Support:	
555-661-130	*Calling Group Supervisor and Service Observer User Guide*
555-650-105	*Data and Video Reference*
Documentation for Qualified Technicians:	
555-661-140	*MERLIN LEGEND® Communications System, Release 6.1, Installation, SPM, Maintenance and Troubleshooting*
555-710-142	*Installation, SPM, Maintenance and Troubleshooting Supplement*
555-710-116	*Pocket Reference*
Toll Fraud Security:	
555-025-600	*BCS Products Security Handbook*

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