Lucent Technologies
Bell Labs Innovations

DEFINITY® ProLogix™ Solutions

Release 3.0
(Software Release 8 and later)
Overview

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Comcode 108679036
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Issue 3

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Contents

About This Document

Purpose

This document provides an overview of the features, components, and capabilities of DEFINITY® ProLogix™ Solutions. This document provides high-level information about the system; it does not describe how to install, administer, or maintain DEFINITY ProLogix Solutions. For this information, see the ProLogix™ Main Menu on this CD.

You should read this document to understand

- the features of DEFINITY ProLogix Solutions,
- the components of DEFINITY ProLogix Solutions, and
- the additional capabilities that are available for you to further tailor DEFINITY ProLogix Solutions to your needs in the future.

Intended Audiences

This document is written for the person(s) who will administer and maintain DEFINITY ProLogix Solutions.

How to Use This Document

Since this document provides an overview of the features, components, and capabilities of DEFINITY ProLogix Solutions, you should read this document to get a basic understanding of DEFINITY ProLogix Solutions. This document describes all of the capabilities that you can add to your DEFINITY ProLogix Solutions, helping you to identify applications that increase the productivity and effectiveness of employees in your company.

This document consists of the following chapters:

- Chapter 1, “Introduction,” provides an overview of DEFINITY ProLogix Solutions, including the features and hardware and software components.
- Chapter 2, “Desktop/Console Solutions,” describes the telephones and consoles that are available with DEFINITY ProLogix Solutions.
- Chapter 3, “Adjuncts,” describes the adjuncts that are available with DEFINITY ProLogix Solutions.
- Chapter 4, “Messaging/Voice Response Solutions,” describes the voice messaging systems that are available with DEFINITY ProLogix Solutions.
- Chapter 5, “Call Center Solutions,” describes applications that provide advanced call-handling and call center management capabilities.
- Chapter 6, “Wireless Solutions,” describes applications that enable employees in your company to keep in touch with co-workers and clients while moving about freely inside and outside your building.

- Chapter 7, “Computer Telephony Integration Solutions,” describes the applications that merge computer and telephone functions, enabling employees in your company to control their telephones from their personal computers and to use caller ID to access client information.
- Chapter 8, “Telecommuting/Virtual Office Solutions,” describes applications that enable employees in your company to work effectively off-site.
- Chapter 9, “System Administration Solutions,” describes applications that can help you manage DEFINITY ProLogix Solutions.
- Chapter 10, “Trunking and Networking Solutions,” describes applications that provide connections to a variety of voice and data networks, helping you to network your equipment and solutions.
- Appendix A, “Features,” lists the features of DEFINITY ProLogix Solutions.

An index is also provided at the back of the book.

Conventions Used in This Document

The following conventions are used in this document:

- The term *system* is used in general to represent DEFINITY ProLogix Solutions.
- The term *switch* is used to represent other telecommunications switching products.

Security

The Security of your DEFINITY ProLogix Solutions is extremely important to Lucent Technologies. You must refer to the DEFINITY ECS section in the BCS Products Security Handbook (555-025-600) and the DEFINITY ECS documentation for the security measures you should implement for your DEFINITY ProLogix Solutions.

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1 Introduction

DEFINITY ProLogix Solutions Overview

DEFINITY® ProLogix™ Solutions is an extremely flexible, global communications system that you can design to get precisely the features and functionality your mid-sized business locations need. As your business grows and your needs change, you can select the tools you need to help manage your time and communications processes effectively, including an array of prepackaged advanced applications (known as "Application Starter Packages") and service and support options.

DEFINITY ProLogix Solutions is a member of the powerful DEFINITY family and provides many of the features found in the other DEFINITY ECS systems. As your company grows, DEFINITY ProLogix Solutions gives you the ability to migrate easily and cost-effectively to the larger DEFINITY ECS. If you move to the DEFINITY ECS, you will keep all of the DEFINITY ProLogix Solutions applications and almost all of your hardware, thereby protecting your initial investment.

Depending on your needs, DEFINITY ProLogix Solutions can cover a single site or network multiple locations (for example, a satellite office within a larger business or branch locations around the world). Multisite companies can centrally maintain their DEFINITY ProLogix Solutions via remote diagnostics and alarming and can centrally administer their system using one of our system administration tools.

Supported Applications

DEFINITY ProLogix Solutions Release 3 supports the following platforms:

- INTUITY™ AUDIX® Voice Messaging System, Release 4.4 or later
- DEFINITY AUDIX Voice Messaging System, Release 3.2 or later
- Octel® 100 Messaging
- BCMS and/or BCMS Vu software
- CentreVu Call Management System
- INTUITY CONVERSANT® Interactive Voice Response
- ASAI/TSAPI via MAPD
- ATM-CES
- IP-Trunks (voice and fax over IP)
- BRI Trunks and Stations
- Multimedia Call Handling (MMCH)
- C-LAN (TCP/IP connectivity for networking, INTUITY, and CentreVu Call Management System)
- DEFINITY IP Solutions
- DEFINITY Wireless Business System - PWT and DECT Adjunct

- TransTalk™ 9000 Digital Wireless System
- DEFINITY Site Administration (DSA)
- Data access products from Lucent, Paradyne™, and Hypercom®
- DEFINITY PC Console Release 2 or later
- DEFINITY Attendant Console
- Telephones including the globally-designed 6400 series as well as 8500, 8400, 9400, 9100, 8100, 7300/ATL, 6200, and 2500 series
- MasterDirectory and PhoneLine applications
- Access Security Gateway (ASG) Guard and other security devices
- Miscellaneous adjuncts including Uninterruptible Power Supply (UPS), Overhead Paging, and Call Accounting software
- Remote and local access products for LAN access, Internet access, and voice (DCP)

Application Starter Packages

DEFINITY ProLogix Solutions offers Application Starter Packages that enable you to implement advanced applications at your own pace, easily and cost effectively in small sizes. When you are ready, you can increase the capacity of the Starter Packages you purchase. Refer to the individual section for more details about each Starter Package.

The following Starter Packages are available:

- Virtual Office

  The Virtual Office Starter Package lets you provide voice and data access for off-site workers and telecommuters. Ideal for businesses with employees who often work at home or other remote locations, this package allows workers to access your business LAN or the Internet from a remote office or home. Off-site workers can even receive telephone calls using a single telephone number no matter where they are, enabling them to work where needed.

- Wireless

  The Wireless Starter Package enhances mobility within your business locations by enabling employees to receive important calls when they are away from their desks. Available in single-zone and multizone packages for anywhere from 1 to 25 users, the Wireless Starter Package gives workers convenient business calling features in compact handsets.

  Packages are available for DEFINITY Wireless Business Systems.

Differences between DEFINITY ProLogix Solutions and DEFINITY ECS

DEFINITY ProLogix Solutions is a member of the powerful DEFINITY family and provides most of the features found in other DEFINITY ECS systems. (Appendix A provides a list of the features supported by DEFINITY ProLogix Solutions.) However, there are some differences between DEFINITY ProLogix Solutions and the DEFINITY ECS as listed below:

- DEFINITY ProLogix Solutions uses a new cabinet, processor, and power supply (R8csi).
- DEFINITY ProLogix Solutions does not support DC power.
- DEFINITY ProLogix Solutions does not support Common Control duplication.
- DEFINITY ProLogix Solutions does not support an internal modem for the remote access port. Instead, an external modem is used.
- DEFINITY ProLogix Solutions supports a maximum of 600 total ports: a maximum of 400 trunks/500 stations.
- DEFINITY ProLogix Solutions does not support Expansion Port Networks (EPNs).

- DEFINITY ProLogix Solutions does not support BX.25 system links that are used for INTUITY/DEFINITY AUDIX DCIU Integration, R3 Call Management System (CMS), CentreVu CMS, or for signaling for DCS networks. However, C-LAN supports TCP/IP connectivity for DCS networking and adjuncts such as CentreVu CMS and AUDIX systems.

For more detailed information on the system's robust capabilities, see the DEFINITY ECS Release 8 System Description Pocket Reference, Issue 5, 555-230-211, and the DEFINITY ECS Release 8 Administrator's Guide, Issue 2, 555-233-502, which are available on your documentation library compact disk (CD).

Hardware

The main component of DEFINITY ProLogix Solutions is the new R8csi model, which uses the TN798B processor (a RISC-based central processing unit) and TN2182B Tone-Clock. The TN798B supervises system operation.

Cabinets

Cabinets are enclosed shelves composed of vertical slots that hold circuit packs. Circuit packs make up the logic, memory, and switching circuitry for the system. Port circuit packs connect to telephones, computers, and trunks. The cabinets are designed to accept any type of port circuit pack in each circuit pack position.

The circuit packs fit into connectors attached to the rear of the slots. Every connector is connected to signal buses and power supplies in the cabinet. The cabinets also house the equipment that supplies ringing signal voltage and mass storage for software translations. Each compact modular cabinet has its own power supply and supports 10 universal slots. The first cabinet uses two slots for the processor and the tone clock.

Compact Modular Cabinets

Figure 1-1 shows a compact modular cabinet.

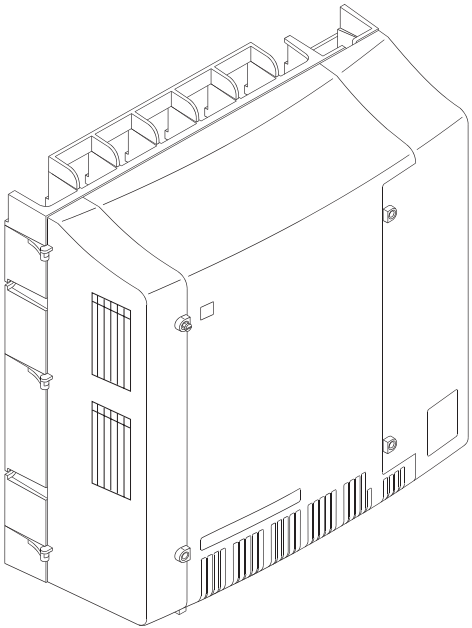

Figure 1-1. Compact Modular Cabinet

The compact modular cabinet weighs 50 to 60 lbs. and has the following dimensions:

- height: 24.5 inches (62.2 cm)
- width: 25.5 inches (64.8 cm)
- depth: 11.3 inches (28.7 cm)

The R8csi has the following characteristics:

- It uses the compact modular cabinet (CMC).
- Each CMC has its own power supply.
- Up to three cabinets can be connected together in a single-port network.
- It enables small organizations to expand while keeping the initial investment moderate.
- It is mounted on a wall. However, it can be mounted on a table or floor as long as only one cabinet is required. For approved mounting configurations, refer to the *Installation and Maintenance* guide on the Library CD.
- It contains 10 universal port slots.
- The first two universal port slots in the first cabinet are typically used for the TN798B processor and the TN2182B Tone-Clock. (However, these slots are not dedicated to the processor and Tone-Clock.)

Software

All DEFINITY ProLogix Solutions throughout the world use the same basic software. To provide this commonality while still accommodating wide variations in configurations and options, the system dynamically allocates internal memory storage. Memory is sized when the system is initialized, selecting the proper software parameters based on the hardware configuration.

In addition to the basic software, various optional packages can enhance the capabilities of the system. Some of the capabilities described in this document require optional software, for example, the INTUITY AUDIX Voice Messaging System. See your account representative for more information. The basic software is a prerequisite for all the optional packages.

Reliability

DEFINITY ProLogix Solutions provides the following capabilities:

- The system can survive minor power surges (including lightning-induced surges up to 2500 Volts peak) without service interruption. Surge protectors can be purchased for increased coverage.
- The system can be placed in less-than-ideal locations since it can handle above-average temperatures and humidity.
- In case of power outages, the system automatically restores the last saved version of user translations and runs them at system restart.
- The system supports the remote diagnostics capability, which enables quick troubleshooting and maintenance.
- The system conducts self-diagnostics and can self-correct a large portion of system errors. If further technical assistance is required, the ProLogix system will call the Lucent Technical Assistance Center for remote diagnostics support.
- The system conducts standard maintenance routines automatically.
- By default, the system backs up all user translations automatically every day at midnight.

2 Desktop/Console Solutions

The communications needs of the people in your company may vary widely. Some may need only basic telephone service. Others may need effective messaging services to save valuable time. Still others may require high-speed data communications and access to a variety of host and personal computers.

DEFINITY ProLogix Solutions brings voice communications, data communications, and messaging together on the desktop and enables you to customize the types of service for various individuals.

Note: Some applications and products are unavailable in some countries. Please check with your local distributor for further information about the features and applications that are available to you.

Telephones for the Global Marketplace

A wide variety of telephones ranging from basic single-line telephones to sophisticated digital telephones that integrate voice and data communications are available with DEFINITY ProLogix Solutions. You can incorporate a mixture of telephone types based on the job functions of the users. All of the telephones are easy to use and give you the ability to tap into the power of your DEFINITY ProLogix Solutions.

Telephones fall into two basic families — Digital Communications Protocol (DCP) and analog. These terms describe how each type of telephone communicates with your DEFINITY system. These families of telephones are designed to accommodate the types of communications various users require. All telephones have touch-tone dialing and the message-waiting lamp for notification of messages.

The following DEFINITY telephones are supported:

- 6400 Series digital telephones
- 7400 Series digital telephones
- 8400 Series digital telephones
- 9400 Series digital telephones (available in select European countries only)
- 7300/ATL Series hybrid telephones
- 6200 Series analog telephones
- 8100 Series analog telephones
- 9100 Series analog telephones
- 2500 Series analog telephones

Digital DCP Telephones

Digital telephones using the Digital Communications Protocol (DCP) employ digital transmission for integrated voice and data signals and control signals. Transmission is over a connection consisting of one or two pair of wires. Each connection supports one signalling channel and two information (voice and data) channels.

DCP telephones are used most effectively by those who have a high volume of calls, require access to multiple applications or databases, use switch features heavily, or require messaging services. They can be used with personal computers to expand their capabilities.

These telephones provide the full range of DEFINITY ECS features on your desktop. In addition to multiline and multifunction capabilities, they provide access to integrated voice and data applications and messaging services. Some models include displays. DCP telephones can actually save you money by reducing the number of lines, modems, and ports that would normally be needed for analog facilities.

The following DCP telephones are available for sale:

- 6400 Series digital telephones
- 8400 Series digital telephones

6400 Series Digital Telephones

The 6400 Series digital telephones are versatile 2-wire DCP telephones that support all of the key/hybrid features of DEFINITY ProLogix Solutions. These telephones have a new, global design and include the following additional features:

- date and time display
- a feature button that allows switchhook control of a headset

- Group Listen capability, which enables you to use your handset or headset normally while others in the room listen via a speakerphone. This 2-way handset, 1-way speaker mode allows you to serve as a spokesperson for a group
- Station User Administration capability, which allows you to program certain features on the telephone yourself
- Conference, Transfer, Hold, and Last Number Dialed fixed feature buttons
- Whisper Page, which enables an assistant to announce another call to the boss during an active call on the boss' telephone. This announcement is heard by the boss only.
- Auto Call Timer, which enables each call to be timed automatically upon answer. You can see the elapsed time on the telephone's display. The timer is stopped automatically when a call is ended or placed on hold.

The 6400 Tip/Ring Module enables 6400 Series telephones to allow an analog adjunct such as a fax machine or modem to operate independently on the I2 channel with its own extension.

There are several 6400 Series telephones available:

- 6402 telephone

  The 6402 telephone is a digital, single-line DCP telephone without a display that can be wall mounted. This cost-effective, entry-level telephone is designed for users with basic call handling requirements. The 6402 is ideal for areas where there is minimum use, such as reception areas, copy rooms, file rooms, or warehouse locations. This telephone has a Feature button for accessing up to 12 system features and a built-in, 1-way (listen-only) speakerphone that facilitates off-hook dialing and listening to voice mail or broadcast messages.

- 6402D telephone

  The 6402D telephone is a digital, single-line DCP telephone with a 2-line by 16-character display. This telephone has a Feature button for accessing up to 12 system features. The 6402D has a 1-way (listen-only) speakerphone and can be wall mounted. There are no soft keys associated with the display.

- 6408+ telephone

  The 6408+ telephone is a digital, multiline DCP telephone that has eight call appearance/feature buttons. This telephone has no display and can be wall mounted. The 6408+ is designed for users who need multiple line appearances and extensive features. The 6408+ has a built-in 2-way speakerphone and programmable keys so users can access more system features from the telephone.

- 6408D+ telephone

  The 6408D+ telephone is a digital, multiline DCP telephone that has eight call appearance/feature buttons and a 2-line by 24-character display. This telephone is designed for users who need multiple line appearances and extensive features. The 6408D+ has 12 additional features that are accessible via the 2-line by 24-character display and are selected by the four display-associated soft keys. The 6408D+ has a built-in 2-way speakerphone and can be wall mounted.

- 6416D+ telephone

  The 6416D+ telephone is a digital, multiline DCP telephone that has 16 call appearance/feature buttons and a 2-line by 24-character display. This telephone is designed for users with call coverage responsibilities who need multiple line appearances and extensive features. The 6416D+ has 12 additional features that are accessible via the 2-line by 24-character display and are selected by the four display-associated soft keys. A 24-button expansion module can be added to provide 24 additional auxiliary buttons. (The 24-button expansion module requires power from the station or the closet.) The 6416D+ has a built-in 2-way speakerphone and can be wall mounted when not used with the 24-button expansion module.

- 6416D+M telephone

  The 6416D+M telephone is a digital, multiline DCP telephone that has 16 call appearance/feature buttons and a 2-line by 24-character display. This telephone is designed for users with call coverage responsibilities who need multiple line appearances and extensive features. The 6416D+M has 12 additional features

that are accessible via the 2-line by 24-character display and are selected by the four display-associated soft keys. A 24-button expansion module can be added to provide 24 additional auxiliary buttons. (The 24-button expansion module requires power from the station or the closet.)

The 6416D+M allows you to install a 100A Tip/Ring module, providing a connection between the telephone and such analog adjuncts as modems, fax machines, analog conference-quality speakerphones, answering machines, and TDD machines commonly used by the hearing impaired. The 6416D+M has a built-in 2-way speakerphone and can be wall mounted. The 6416D+M also has a built-in headset jack.

- 6424D+ telephone

  The 6424D+ telephone is a digital, multiline DCP telephone that has 24 call appearance/feature buttons and a 2-line by 24-character display. This telephone is designed for the busy executive or executive assistant who requires extensive call handling and call coverage flexibility. The 6424D+ has 12 additional features that are accessible via the 2-line by 24-character display and are selected by the four display-associated soft keys. The 6424D+ has a built-in 2-way speakerphone and can be wall mounted. A 24-button expansion module can be added to provide 24 additional auxiliary buttons. (The 24-button expansion module requires power from the station or the closet.)

- 6424D+M telephone

  The 6424D+M telephone is a digital, multiline DCP telephone that has 24 call appearance/feature buttons and a 2-line by 24-character display. This telephone is designed for the busy executive or executive assistant who requires extensive call handling and call coverage flexibility. The 6424D+M has 12 additional features that are accessible via the 2-line by 24-character display and are selected by the four display-associated soft keys.

  The 6424D+M allows you to install a 100A Tip/Ring module, providing a connection between the telephone and such analog adjuncts as modems, fax machines, analog conference-quality speakerphones, answering machines, and TDD machines commonly used by the hearing impaired. The 6424D+M has a built-in 2-way speakerphone and can be wall mounted. A 24-button expansion module can be added to provide 24 additional auxiliary buttons. (The 24-button expansion module requires power from the station or the closet.) The 6424D+M also has a built-in headset jack.

Requirements

The 6400 Series telephones are compatible with the following 2-wire DCP circuit packs:

- TN 2181 (16-port circuit pack)
- TN 2224 (24-port circuit pack)
- TN 2214 (international 24-port circuit pack)

7400 Series Digital Telephones

The 7400 Series telephones are 4-wire, multiline, DCP telephones. Although these telephones are supported, they cannot take advantage of the latest set of DEFINITY features. These telephones are not currently sold as new.

8400 Series Digital Telephones

The 8400 Series telephones are versatile 2-wire/4-wire DCP telephones that offer flexibility and cost savings and support most of the key/hybrid features of DEFINITY ProLogix Solutions. (Table 2-1 shows the differences between the 8400 Series telephones and 6400 Series telephones.) These telephones detect automatically whether they are plugged into a 2-wire or 4-wire digital line circuit card.

Note: The 8400 Series telephones are not offered with new DEFINITY systems sales. However, you can still purchase these telephones from Lucent.

There are several models of 8400 Series telephones:

- 8403 telephone

  The 8403 is a 3-line telephone without a display that can be wall mounted. This telephone has a built-in, 1-way (listen-only) speakerphone and three programmable buttons.

- 8405B telephone

  The 8405B is a 5-line telephone without a display that can be wall mounted. The 8405B has a built-in 1-way speaker and programmable keys.

- 8405D+ telephone

  The 8405D+ is a 5-line telephone with a 2-line, 24-character display that can be wall mounted. This telephone has a built-in 2-way speaker and programmable keys.

- 8410B telephone

  The 8410B is a 10-line telephone without a display that can be wall mounted. The 8410B has a built-in 2-way speakerphone and programmable keys.

- 8410D telephone

  The 8410D is a 10-line telephone with a 2-line, 24-character display. The 8410D has 12 additional features that are accessible via the 2-line by 24-character display and are selected by the four display-associated soft keys. This telephone can be wall mounted.

- 8411D telephone

  The 8411D is a 10-line telephone with a 2-line, 24-character display. This telephone is an enhanced version of the 8410D telephone that has a built-in RJ11C jack, which provides an interface to analog telephone devices (such as a telecopier or a modem) and an RS232 data interface for PassageWay Direct Connection. The 8411D has a built-in 2-way speakerphone and programmable keys. The 8411D has 12 additional features that are accessible via the 2-line by 24-character display and are selected by the four display-associated soft keys. This telephone cannot be wall mounted.

- 8434DX telephone

  The 8434DX telephone is a 34-button telephone with a 2-line, 40-character display. The 8434DX has a built-in 2-way speakerphone and programmable keys. The 8434DX has 12 additional features that are accessible via the 2-line by 40-character display and are selected by the four display-associated soft keys. A 24-button expansion module can be added. (The 24-button expansion module requires power from the station or the closet.)

Table 2-1. Differences between the 6400 Series Telephones and 8400 Series Telephones

Feature	6400 Series Telephones	8400 Series Telephones
Whisper Page	Yes	Yes
Group Page	Yes	Yes
Bridged Appearance	Yes	Yes
Personal CO Line Appearance	Yes	Yes
Directed Call Pick-up	Yes	Yes
Group Listening	Yes	No

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Table 2-1. Differences between the 6400 Series Telephones and 8400 Series Telephones

Feature	6400 Series Telephones	8400 Series Telephones
Station User Administration	Yes	No
Time/Day Default	Yes	No
Adjustable Display	Yes	No
Pull-out Tray	Yes	No
Headset without handset offhook	Yes	No
Dual-Purpose NEXT button	Yes	No
Auxiliary Jack	No	Yes
Tip/Ring Interface	6416D+M and 6424D+M only	Yes (8411)
2 and 4 wire	2-wire only	Yes
RS-232 CTI Interface	No	Yes (8411)
AD Labeling	Yes	Yes

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Table 2-1. Differences between the 6400 Series Telephones and 8400 Series Telephones

Feature	6400 Series Telephones	8400 Series Telephones
Active Dialing	Yes	Yes
Context-Sensitive Help	Yes	Yes
Automatic Timer	Yes	No
		3 of 3

Requirements

The 8400 Series telephones are compatible with all 2-wire and 4-wire DCP circuit packs.

9400 Series Digital Telephones

The 9400 Series telephones (used only in selected European countries) are digital telephones. The 9403 and 9434 telephones operate in both 2-wire and 4-wire configurations. The 9410 telephone operates only in the 2-wire DCP configuration.

Note: These telephones are not currently sold as new.

DEFINITY ProLogix Solutions supports the following 9400 Series telephones:

- 9403 telephone

  The 9403 telephone is a 3-line digital telephone without a display and can be wall mounted. This telephone has a built-in, 1-way (listen-only) speakerphone and three programmable buttons. The 9403 operates in both 2-wire and 4-wire configurations.

- 9410 telephone

  The 9410 telephone is a digital, multiline telephone that has 10 call appearance/feature buttons and a 2-line by 24-character display. The 9410 has a built-in 2-way speakerphone and can be wall mounted. This telephone operates only in the 2-wire DCP configuration.

- 9434 telephone

  The 9434 telephone is a digital, multiline telephone that has 34 call appearance/feature buttons and a 2-line by 24-character display. The 9434 has a built-in 2-way speakerphone and can be wall mounted. The 9434 operates in both 2-wire and 4-wire configurations.

Requirements

The 9400 Series telephones are compatible with all 2-wire circuit packs. The connection is made via a 2-wire, 16-port or 24-port DCP interface card.

7300/ATL Series Hybrid Telephones

The 7300/ATL Series telephones are multiline, hybrid telephones. Although these telephones are supported, these telephones cannot take advantage of the latest set of DEFINITY features. These telephones are not currently sold as new.

Analog (Single-Line) Telephones

Single-line telephones are an economical choice for users who do not handle many calls and do not use modems and fax machines extensively.

All signals between analog telephones and the DEFINITY system are analog over a pair of wires. Only one incoming call can ring at a time, but the telephone can actually handle two calls — one active and one on hold. Depending on the particular telephone, you can alternate between two calls or set up a three-way conference using the switchhook or flash button. You can access DEFINITY voice features by either entering access codes from your touch-tone keypad or pressing feature buttons.

The following analog telephones are available:

- 6200 Series analog telephones
- 8100 Series analog telephones
- 9100 Series analog telephones
- 2500 Series analog telephones

6200 Series Analog Telephones

The 6200 Series telephones are single-line, analog telephones.

There are three 6200 telephones available:

- 6210 telephone

  The 6210 telephone is a single-line analog telephone that can be wall mounted. This telephone has a built-in Data jack that allows a user to bridge a fax machine, modem, or laptop computer onto the single analog line.

- 6218 telephone

  The 6218 telephone is a single-line analog telephone that can be wall mounted. This telephone has a built-in Data jack that allows a user to bridge a fax machine, modem, or laptop computer onto the single analog line. The 6218 also has 8 speed dial buttons and a 2-way speakerphone. The 6218 telephone is available in the U.S. only.

- 6220 telephone

  The 6220 telephone is a single-line analog telephone that can be wall mounted. This telephone has a built-in Data jack that allows a user to bridge a fax machine, modem, or laptop computer onto the single analog line. The 6220 also has 10 speed dial buttons and a 2-way speakerphone.

8100 Series Analog Telephones

The 8100 Series telephones are single-line analog telephones that require one tip-and-ring pair for operation. These telephones are not currently sold as new.

There are several models of 8100 Series telephones:

- 8101M telephone

  The 8101M telephone is a single-line analog telephone that contains a Message light, selectable personalized ringing pattern, and a Data jack. This telephone allows users to access system features with the Flash button.

- 8101 telephone

  The 8101 telephone is a single-line analog telephone that contains a Message light, selectable personalized ringing pattern, and a Data jack. This telephone allows users to access system features with the Flash button. The 8101 provides the added features of automatic redial, (with a Redial button) and a Hold button.

- 8102M telephone

  The 8102M telephone is a single-line analog telephone that contains 12 programmable dialing buttons, automatic redial, selectable personalized ringing pattern, a Message light, a Hold button, a Data jack, and an Adjunct jack. This telephone allows users to access system features with the Flash button.

- 8110M telephone

  The 8110M telephone is a single-line analog telephone that contains 12 programmable dialing buttons, automatic redial, selectable personalized ringing pattern, a Message light, and a Hold button. This telephone also has a built-in speakerphone. The 8110M allows users to access system features with the Flash button.

9100 Series Analog Telephones

The 9100 Series telephones are cost-effective analog telephones (sold outside North America only). These telephones are not currently sold as new.

There are three models of 9100 Series telephones:

- 9101 telephone

  The 9101 telephone has the following features:

  - standard alphanumeric dial pad
  - convenient pulse or push-button tone dialing
  - a fully modular connection that provides maximum ease of installation
  - telephone-line powered, unaffected by power interruption
  - easily installed on desk or table
  - user-selectable ringer volume and pitch control
  - flashing ringer light that indicates an incoming call
  - flashing Message light
  - Flash button for accessing system features such as Hold and Transfer

- 9103 telephone

  The 9103 telephone has the following features:

  - convenient pulse or push-button tone dialing
  - a fully modular connection that provides maximum ease of installation
  - battery backup in case of power interruption
  - easily installed on desk or table
  - user-selectable ringer volume and pitch control
  - flashing ringer light that indicates an incoming call
  - flashing Message light
  - Flash button for accessing system features such as Hold and Transfer
  - three memory-dialing buttons
  - ability for you to program ten memory-dialing numbers on the numeric dial pad keys (0 and 1 through 9)
  - on-hook dialing with 1-way speaker
  - Last Number Redial feature
  - Save feature, which enables you to save a number in memory for a temporary period of time

- 9110 telephone

  The 9110 telephone has the following features:

  - convenient pulse or push-button tone dialing
  - easily installed on desk or table
  - hands-free 2-way speakerphone
  - ten memory-dialing buttons to which you can program 20 memory-dialing numbers
  - flashing ringer light that indicates an incoming call
  - flashing Message light
  - Flash button for accessing system features such as Hold and Transfer
  - Last Number Redial feature
  - Save feature, which enables you to save a number in memory for a temporary period of time
  - Mute button
  - Speaker volume control
  - user-selectable ringer volume and pitch control
  - user-adjustable speakerphone volume control

2500 Series Analog Telephones

The 2500 Series telephones are single-line analog telephones. These telephones are not currently sold as new.

There are three models of 2500 Series telephones:

- 2500 MMGM telephone, which is a basic, desktop telephone.
- 2500 YMGM telephone, which is a desktop telephone that has a Hold button, a Mute button, a Flash button, and a Redial button.
- 2554 MMGM telephone, which is a basic, wall-mounted telephone.

Attendant Consoles

To increase the effectiveness of attendants handling calls, DEFINITY ProLogix Solutions offers the following tools:

- DEFINITY 302C Attendant Console (requires connectivity to a 2-wire circuit pack)

  The DEFINITY 302B Attendant Console requires connectivity to a 4-wire circuit pack. The DEFINITY 302B Attendant Console is not currently sold as new.

- DEFINITY PC Console Release 2.0 or later

DEFINITY Attendant Console

The DEFINITY Attendant Console is a digital call-handling station with push-button control that enables your call attendants to answer calls, to place calls, and to manage and monitor some system operations. The Attendant Display shows call-related information that helps the attendant to operate the console. Attendants may select one of several available display languages.

DEFINITY PC Console

The DEFINITY PC Console is a software application that enables your call attendants to handle incoming calls efficiently by personal computer. Using the familiar Microsoft® Windows® graphical interface, the attendants can easily keep track of how long callers have been on hold and for whom they are waiting. Attendants can monitor up to six calls at once. They need not fumble with pen and paper when handling calls, as they can make notes on their computers about what each caller needs. All this contributes to making a favorable first impression with your customers. Having the call processing software on the same computer with spreadsheet, word processing, or other software enables the attendants to stay productive between calls.

Your company directory is displayed on screen with busy extensions shaded. A variety of search functions are available, so attendants can find names and extensions easily. On-line telephone identification enables attendants to identify employees quickly. Calls are transferred with the press of a button. On-line help makes it easy for attendants to remind themselves how to use the system.

The PC Console is easily customized, so even if attendants from different shifts share the same computer, they can each preserve their preferences in the call processing environment. The PC Console is available in English, Dutch, Spanish, French, German, Italian, and Portuguese. If a Spanish-speaking attendant takes over for a French-speaking attendant, for example, a single press of a button converts all labels, error messages, and on-line help to Spanish.

Requirements

The following requirements must be met for PC Console to function properly:

- an IBM-compatible personal computer with:
  - a Pentium™-based, 100 Megahertz or higher processor
  - a minimum of 16 megabytes (MB) of RAM
  - a minimum of 4 MB of ROM
  - a 3.5-inch disk drive
  - an available COM port
  - sufficient hard disk space. The space required to support PC Console depends on the number of users you are supporting, the amount of information stored for each person, and whether you will include each person's photograph in PC Console.

- any of the following operating systems:
  - ~ Microsoft Windows 3.1 or later (R2.0 only)
  - ~ Microsoft Windows for Workgroups 3.11 or later (R2.0 only)
  - ~ Microsoft Windows 95
  - ~ Microsoft Windows NT
  - ~ Windows 98 (R3.0 only)
- a 2- or 4-wire DCP telephone with a PassageWay adapter, an 8411 telephone, a CALLMASTER IV, a CALLMASTER VI, a 6424D+M telephone, or a 6416D+M telephone.
- local adjunct power (depending on your telephone)
- PassageWay Direct Connection

3 Adjuncts

DEFINITY ProLogix Solutions provides the following equipment to supplement services and features of your system and telephones:

- power systems
- on hold and delayed announcement systems
- headsets
- audio, visual, and wireless paging
- alerts and sensors
- speakerphones
- security devices
- call accounting systems

Power Systems

Lucent Technologies offers the following solutions to help provide protection from power disturbances and disasters and to provide power for equipment:

- Uninterruptible Power Systems (UPS)

  A UPS helps safeguard your DEFINITY ProLogix Solutions and associated applications from utility power irregularities. During a power failure, the UPS battery activates, supplying power for a limited amount of time.

- Surge Protectors

  Surge protectors help protect your DEFINITY ProLogix Solutions, PCs, fax machines, and other equipment from electrical surge damage. AC Protectors prevent voltage surges from entering the system via the AC utility line. Line Protectors prevent voltage surges from entering the system via incoming central office (CO) lines or via wiring for telephones (tip and ring) that extend to or from another building (In-Range Out-of-Building).

- Terminal Power Supplies

  Terminal Power Supplies provide local power for telephones and adjuncts that require additional power (for example, DCP telephones with headset adapters and adjunct speakerphones).

On Hold and Delayed Announcement Systems

Lucent Technologies offers the following external announcement systems for DEFINITY ProLogix Solutions:

- Magic On Hold® Express Systems

  Magic On Hold Express systems provide businesses with fully customized, professionally produced announcements for customer-specific “on hold” environments. The professionally produced announcements are delivered remotely to your company directly from the production studio. Production options include legally licensed background music and/or customized information messages that play when a caller is placed on hold or in queue.

- Magic On Hold Systems

  Magic On Hold systems provide businesses with up to 3 minutes of continuous radio programming for customer specific on hold environments. Production options include legally licensed background music and/or customized information messages that play when a caller is placed on hold or in queue.

- Professional Announcement Recordings

  Professional announcement recordings (PARs) enhance Auto Attendant, Automatic Call Distribution (ACD), and Integrated Voice Response (IVR) applications. Professional announcement recordings greet and guide business callers using crisp, clear, and concise voice messages that help optimize the caller’s personal perception of automated communications. With professional announcement recordings, callers hear professional productions that deliver important information.

- Delay Announcement Systems

  Delay announcement systems provide announce only, information announcement, in-queue announcement, and broadcast messaging for businesses with automatic messaging applications. These systems enhance the image of your business by helping to prevent the callers from feeling abandoned during the call.

Headsets

Headsets help increase work productivity in telephone intensive applications and are proven to reduce neck strain and muscle tension for all workers who use a telephone at least 3 hours a day. Lucent Technologies provides a complete product line for use in Call Center applications, traditional business office applications, computer telephony applications, and mobility applications.

Audio, Visual, and Wireless Paging

Lucent Technologies provides overhead voice paging equipment that enables telephone users to make announcements by simply speaking into the handset of their telephone. Each paging system can be expanded to 99 zones or separate paging areas. One of these zones can be set up to activate all areas at the same time. (A zone is the location of the loudspeakers: for example, conference rooms, warehouses, or storerooms.)

Visual paging includes indoor LED message display signboards, a wireless keyboard for sign programming, a connector kit for integrating with the paging equipment, and optional software for “ad-hoc” visual message programming.

An APS (Automated Paging System) wireless, on-site paging system that can support up to 360 pagers is available. It features immediate, silent, one-way communications. The system consists of a controller/transmitter and a choice of numeric and/or alphanumeric pagers. The Custom model can be programmed to meet the needs of a specific business.

Alerts and Sensors

Lucent Technologies provides a complete product line of alerts and sensors for your business. With alert devices, you can select the type of sound for incoming calls (for example, bell, horn, or chime sounds) or use visual signals (such as flashing lights) to indicate the presence of a ringing call, a voice mailbox message, or a voice paging message.

Sensor devices detect and analyze central office ringing signals to determine if the signal is a standard voice, data, or fax call. Once it determines the type of signal, the sensor device routes the call to the appropriate end point.

Audioconference Speakerphones

Lucent Technologies provides full-duplex audioconferencing speakerphones designed specifically for large meeting areas and conference rooms. Full-duplex technology allows free flowing, 2-way transmission, which eliminates the clipping and hollow sounds of traditional speakerphones. Although a majority of Lucent telephones have built-in speakerphones, Lucent's audioconferencing speakerphones cover larger areas and provide the free flowing sound quality needed when three or more people are conferenced together.

Security Devices

To help secure your DEFINITY ProLogix Solutions, Lucent Technologies provides the following products:

- Access Security Gateway (ASG)

  The Access Security Gateway (ASG) is a built-in feature that offers a more secure alternative to static login password authentication when the DEFINITY ProLogix system is accessed remotely. Using an encryption algorithm, the Access Security Gateway provides session-based challenge and response technology to secure access to the DEFINITY ProLogix system's remote maintenance and administration port, system administration terminal, and NET CON channels. Refer to the DEFINITY ECS System Administration Guide for information on how to administer this feature.

- Access Security Gateway Guard

  The Access Security Gateway Guard connects to ports on the DEFINITY ProLogix system (such as the Remote Maintenance Port) and protects those ports from unauthorized access. (When users attempt to access the ProLogix system remotely, the Access Security Gateway Guard prompts the users to enter their login ID and then issues a challenge. Using the Access Security Gateway Key, authorized users are able to provide the correct response to the challenge issued by the DEFINITY ProLogix system. The challenge issued by the DEFINITY ProLogix system and the response that the system expects are constantly changed, helping to prevent unauthorized users from accessing the DEFINITY ProLogix system.

- Access Security Gateway Key

  The Access Security Gateway Key enables authorized users to access the DEFINITY ProLogix system remotely. When the Access Security Gateway feature or the ASG Guard issues a challenge, users must enter the challenge into the Access Security Gateway Key to receive the correct response to the challenge. The users then enter the response to the Access Security Gateway feature or ASG Guard to access the system.

  The DEFINITY Site Administration software application does not require ASG Key to perform downloads. (In this case, DEFINITY Site Administration acts like ASG Key.) However, you will need ASG Key if you use DEFINITY Site Administration as a terminal emulator.

- Remote Port Security Device

  The Remote Port Security Device is a single-line dial-up port protection system that prevents unauthorized access to a host resource. Host resource dial-up ports are protected by the installation of the Remote Port Security Device Lock on the analog telephone line leading to the port. Access is provided only when the calling party uses the Remote Port Security Device Key, a unit that is installed on the analog telephone line at the calling party end.

  The Remote Port Security Device works with all data communications protocols and can be used in the following applications:

  - protecting organizations with remote and home offices that communicate over the public telephone network via dial-up lines
  - safeguarding companies that administer their communication and voice processing systems remotely from their office headquarters, helping to ensure that critical network routing information, traffic data, and PBX feature translations are not compromised
  - controlling dial-up access by suppliers that provide remote maintenance services ensuring that only the service provider has access to the maintenance ports

Call Accounting Systems

Lucent Technologies provides the following products to help you reduce telephone expenses, optimize resources, assign costs, identify abuse, and clearly understand your telephone expenses and convey that understanding to others:

- DEFINITY Network Telemanagement (DNT)

  DEFINITY Network Telemanagement is a state-of-the-art, multi-user telemanagement system. Designed in the industrial-strength, on-line, dynamic server-based Informix NT, this application is unmatched in its performance and speed.

  DEFINITY Network Telemanagement provides a full 32-bit seamless application that targets client/server environments that use local area networks (LANs) and wide area networks (WANs). DEFINITY Network Telemanagement is ODBC compliant and uses MAPI/TAPI conventions. DEFINITY Network Telemanagement is a fully distributed network-based product.

  DEFINITY Network Telemanagement can support as many simultaneous users as you require and is offered in various modules that include call management (call accounting), asset management (inventory control), and service management (work/service orders).

- Call Accounting System for Windows (CFW)

  The Call Accounting System for Windows (CFW) allows you to generate comprehensive and accurate accounting reports using the Microsoft Windows 98 or 95 environment. Detailed or summary reports can be expressed in two or three dimensional, color charts and graphs, or in text files suitable for downloading to other applications.The optional toll-fraud detection module enables you to detect fraudulent use of your long-distance services.

  You can generate reports that identify:

  ~ most frequently dialed numbers

  ~ most expensive calls

  ~ longest duration calls

  In addition, you can search the accounting data for a great variety of information, including dialed numbers, partial numbers, dates, times, call types, departments, and calling extensions.

  You can define up to five levels of reporting hierarchy to which you can assign costs. The system archives your data for one accounting period. A flexible markup capability allows service businesses to adjust call pricing for each client.

  Call Accounting System for Windows can generate twenty standard historical or real-time reports from as many as 100 locations and 10,000 stations. An individual system is capable of polling different types of call detail storage units or other Call Accounting System for Windows systems. The remote systems forward call records and alarms as they are generated.

A traffic engineering option allows you to monitor trunk usage, calling patterns, incoming traffic, and outgoing calls by area code. This allows you to analyze trends summarizing how your equipment is being used.

Call Accounting System for Windows is widely compatible and requires little maintenance, even while collecting data, generating reports, and managing remote data collection sites.

- Call Accounting System XP

  Call Accounting System XP has equivalent functionality as DEFINITY Network Telemanagement, but only offers call accounting. Call Accounting System XP is a LAN/WAN-based application that supports customers with multi-user requirements. It is offered at a base size of 50 stations, but can be upgraded to 10,000 stations. As an optional module, you can purchase an Internet module option that provides employee Internet usage reports.

  CAS XP is supported with a mandatory professional service offer for on-site installation, initialization, and training provided by the vendor. CAS XP supports up to 100 sites, 10,000 stations, and 5 simultaneous users. Hacker Tracker is also an available option. CAS XP runs on Windows 98, Windows NT 4.0, and Windows 2000.

- INTUITY Call Accounting System

  If you are using any of the INTUITY voice messaging products, the INTUITY Call Accounting System is probably the best call accounting solution for you. The system works exclusively with INTUITY products, which reside on MAP5P, MAP/40, or MAP/100 computers. (For more information on INTUITY products, see Chapter 4, “Messaging/Voice Response Solutions.”) Offering many of same features as the Call Accounting System for Windows, the system also serves to help integrate your INTUITY applications.

  You can use the INTUITY Call Accounting System to optimize DEFINITY ProLogix Solutions’ resources, detect toll fraud, and allocate costs. More creative applications of the system’s reporting capabilities include:

  ~ measuring response of advertising campaigns by assigning an account number for the media (radio, television, etc.) that prompted incoming calls.

  ~ increasing productivity by tracking the costs of telemarketing and customer service calls

  ~ detecting and finding the cause of abandoned calls

  The system can handle up to 500 extensions.

  INTUITY Call Accounting System also supports an optional Hacker Tracker module.

4 Messaging/Voice Response Solutions

With less than 30 percent of person-to-person business calls reaching the intended party on the first attempt, day-to-day business can be frustrating. Integration with Lucent Technologies' multimedia messaging products can help ensure that important calls are not lost.

Lucent Technologies' multimedia messaging and voice response systems provide businesses with the voice processing tools to communicate more efficiently and make time spent on the job more productive. Whether your company has ten employees or thousands, Lucent Technologies can provide you with an innovative voice processing solution.

DEFINITY ProLogix Solutions supports the following multimedia messaging and voice response solutions:

- INTUITY AUDIX Multimedia Messaging System (Release 4.4 or higher)
- INTUITY Message Manager
- DEFINITY AUDIX Voice Messaging System
- INTUITY Conversant Voice Information System
- Octel 100

Integrating each of these products with your DEFINITY ProLogix Solutions measurably reduces overhead costs and improves efficiency — while ensuring that important calls are not lost.

Note: Some applications and products are unavailable in some countries. Please check with your local distributor for further information about which features and applications are available to you.

Messaging Systems and Call Coverage

The INTUITY AUDIX system and DEFINITY AUDIX system can be set up as the last points on a coverage path. Calls are then redirected to AUDIX if they are not answered by a previous station on the path. In addition, a secretary or messaging agent who answers a call can transfer a caller to the AUDIX system "mailbox" of the original called party upon request. The caller may prefer to leave a voice mail message if the message is personal, lengthy, or highly technical.

Many other options are available for maximum flexibility. For example, a caller can choose to transfer from the system to an attendant or operator. Or the caller can transfer to another extension instead of leaving a message. Your company can choose to have an automated attendant answer calls to the company and direct these calls to the right department quickly, so callers do not have to wait on hold. With an automated attendant, callers can be instructed to enter keypad commands to direct the call to the appropriate point. This feature gives customers choice and control. It also enables you to make the most effective use of your personnel, while still providing your customers with the service they expect.

Integrating each of these products with your DEFINITY ProLogix Solutions measurably reduces overhead costs and improves efficiency — while ensuring that important calls are not lost.

Messaging Integration

INTUITY AUDIX

DEFINITY ProLogix Solutions supports the following integration methods for use with the Lucent INTUITY systems:

- C-LAN
- Mode Code (in band) communications

Note: C-LAN integration provides better performance and is the preferred method of integration.

C-LAN

C-LAN allows the DEFINITY ProLogix Solutions system and the Lucent INTUITY system to communicate over a private, dedicated LAN or using a customer's LAN. The DEFINITY ProLogix Solutions system is a server, and the Lucent INTUITY system is a client that always initiates the communications session. C-LAN uses a LAN circuit card installed in the Lucent INTUITY system and a C-LAN circuit pack (TN799B) installed in the DEFINITY ProLogix Solutions system. The two systems use TCP/IP and a specialized DEFINITY protocol to communicate. C-LAN provides the same functionality as a DCIU link.

Note: The DEFINITY ProLogix Solutions system must have Release 7 or later software and must be equipped with a C-LAN circuit pack (TN799B). The Lucent INTUITY system must be Release 4.4 or later and must be equipped with a LAN interface card.

The DEFINITY Prologix Solutions system with Release 7 or later software can support two C-LAN circuit packs. Each C-LAN circuit pack (TN799B) can support 17 LAN ports per circuit pack. Of these ports, only one port supports an Ethernet connection required for use with the Lucent INTUITY system. The Lucent INTUITY system C-LAN does not operate with the synchronous point-to-point protocol (PPP) provided by the other ports. The other ports can be used for other DEFINITY systems for PPP connections as part of a DCS network. (See Chapter 10 for further details about DCS using C-LAN.)

Mode Code

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

Table 4-1 summarizes the features available with the different types of integrations for DEFINITY systems.

Table 4-1. Comparison of Integration Types

Function	C-LAN	Mode Code	Mode Code Notes
Connection Information:			
Calling Party ID: External Calls - ANI	Yes	No	
Calling Party ID: Internal Calls - Extension Number	Yes	Yes	
Internal vs. External Call	Yes	Yes	Can provide internal and external personal greetings
Direct vs. Redirected Call	Yes	Yes	
Busy vs. No Answer	Yes	No	Cannot provide personal greeting for busy/no answer.
Call Disconnect Message	Yes	No	Mode Code uses “wink” on line.

1 of 3

Table 4-1. Comparison of Integration Types

Function	C-LAN	Mode Code	Mode Code Notes
Distributed Communications Networking	Yes	No	
MWI Control			
Message Waiting Indicator (MWI) On/Off	Yes	Yes	
Message Waiting Indicator (MWI) Audit	Yes	No	Can refresh one at a time.
Transfer Type			
Transfer Out of AUDIX	Enhanced	Basic	Basic transfer via switch-hook flash. Possibility of toll fraud.*
Transfer Into AUDIX	NA	NA	Functionality is provided by switch.
Maintenance Features:			

2 of 3

Table 4-1. Comparison of Integration Types

Function	C-LAN	Mode Code	Mode Code Notes
Call Screening/ Bridging	No	No	
*R for Call Answer	Yes	Yes	
Busy Out Voice Ports	Yes	No	
“Link Alive” Messages	Yes	No	
Time of Day Clock Sync	Yes	No	
DCS Transparency	Yes	No	Future work for Mode Code switches.
Digital Networking	NA	NA	Not dependent on switch integration.
			3 of 3

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

DEFINITY AUDIX

The DEFINITY ProLogix Solutions system also supports the DEFINITY AUDIX Release 4.0 system, which is integrated with the DEFINITY ProLogix Solutions system using Displays Set Integration. DEFINITY AUDIX Release 4.0 requires only one slot when slot 6 is used; otherwise it is a two-slot board.

Centralized Messaging vs. Networked Messaging

If your company has multiple DEFINITY ProLogix Solutions and/or other DEFINITY ECS systems, you can implement a multimedia messaging system (such as the INTUITY AUDIX system) in a centralized and/or a networked environment. DEFINITY ProLogix Solutions can be a hub in a shared voice mail environment.

In a networked environment, two or more multimedia messaging systems can share information to allow messages to be shared across several DEFINITY ProLogix Solutions or other DEFINITY ECS systems. This networking can be performed using digital line connections to the systems or via Internet TCP/IP networking. If the DTMF Mode Code interface is used to the INTUITY AUDIX system, the amount of information that can be exchanged with the message is limited. For full functionality, C-LAN integration using the C-LAN TN799B board with the multimedia messaging system is recommended.

The Centralized Voice Mail via Interswitch Mode Code feature enables all DEFINITY ECS/DEFINIY ProLogix Solutions/DEFINITY BCS or MERLIN LEGEND®/MERLIN MAGIX™ Release 1 networks to share a voice mail system. The Centralized Voice Mail via Interswitch Mode Code feature offers the following benefits:

- Message Waiting Indications (MWI) at remote sites
- Station name and number display transparency
- Reduced administration time (since there is only one voice mail system to administer)
- Easier communication among locations with broadcast messages

INTUITY AUDIX Messaging Solutions

Lucent Technologies INTUITY Messaging Solutions is a powerful messaging system that enables you to record, distribute, and receive messages in various media (for example, voice, fax, and email). The system runs on a MAP5P, MAP/40, MAP/40s, or MAP/100 computer connected to the switch and can accommodate up to 64 voice ports and 1255 hours of stored messages.

INTUITY AUDIX Release 5 supports the Mode Code analog interface connectivity and TCP/IP connectivity. (Some INTUITY features may behave differently when you use the Mode Code interface. See the INTUITY documentation for more information.) TCP/IP connectivity requires using the C-LAN board.

INTUITY AUDIX Features

INTUITY Messaging Solutions offers the following features:

- *Fax Messaging* enables you to handle faxes as easily as you handle voice mail. You can send, receive, store, scan, delete, skip, or forward faxes. This feature is fully integrated with voice messaging, so you can attach faxes to voice messages, for example. You can also create special mailboxes for each of your fax machines. These mailboxes accept fax telephone calls when the fax machine is busy and then deliver the fax to the fax machine when the fax machine is available.
- *Integrated Messaging* enables you access and manage incoming voice, fax, and e-mail messages and file attachments from your personal computer or your telephone. A voice message will thus appear in your e-mail mailbox, for example, and vice versa. You can also set options to have just the message headers appear in the alternate mailbox. You can also create a voice or fax message by telephone and send it to an e-mail recipient.
- *Text-to-Speech* allows you listen to a voice rendering of text messages sent from a supported e-mail system and/or INTUITY Message Manager.
- *Print Text* enables you to print messages sent from a supported e-mail system and/or INTUITY Message Manager.
- *Pre-Addressing* enables you to address a message before recording it.
- *Enhanced Lists* enables you to send a message to up to 1500 recipients.

- *Call Answer Disable* enables you to turn off call answering to conserve system resources. For example, you can create a message that tells callers they cannot leave a message and gives them another number to call.
- *Transfer Restrictions* enable you to control toll fraud by restricting transfers going through the multimedia messaging system.
- *Shared Extensions* provide personal mailboxes for each person sharing a telephone.
- *Multiple Personal Greetings* enable you to prepare a pool of up to nine personal greetings to save time and provide more personal customer service. Separate messages can indicate you are on the telephone, away from the desk, on vacation, etc. You can assign different messages to internal, external, or after-hours calls.

Note: This feature only works in a centralized environment. (With the Mode Codes interface, you cannot set up separate internal and external greetings.)

- *Priority Messaging* places important messages ahead of others.
- *Outcalling* automatically dials a prearranged telephone number or pager when you have messages in your voice mailbox.
- *Priority Outcalling* automatically dials a prearranged telephone number or pager when you have priority messages in your voice mailbox.
- *Broadcasting* enables you to send a single message to multiple recipients or to all users on the system.

- *System Broadcast* enables you to send broadcast messages as regular voice messages or as messages that recipients hear as they log in.
- *AUDIX Directory* enables you to look up the extension number of any other user by simply entering the user's name on the telephone keypad.
- *Personal Directory* enables you to create a list of nicknames for quick access to telephone numbers.
- *Call Answering for Nonresident Subscribers* provides voice mailboxes for users who do not have an extension number on DEFINITY ProLogix Solutions.
- *Full Mailbox Answer Mode* informs callers whenever messages cannot be left because there is no room in a subscriber's mailbox.
- *Name Record by Subscriber* lets you record your own name on the system.
- *Automatic Message Scan* can play all new messages in part or in their entirety without requiring you to press additional buttons, which is particularly useful when you are getting messages from your mobile telephone.
- *Sending Restrictions by Community* enables you to limit the communities of callers who can communicate via AUDIX Multimedia Messaging.
- *Group Lists* enables you to create mailing lists of up to 250 people to use for broadcasting messages.
- *Message Forwarding* enables you to forward messages with or without attached comments.

- *Name Addressing* enables you to address messages by name if you do not know the extension.
- *Private Messaging* is a special coding feature that prevents recipients from forwarding messages.
- *Leave Word Calling* enables you to simply press a button on your telephone in order to leave a standard call me message on any extension.
- *On-Line Help* provides you with instant access to voiced instructions at any time when you are using the system.
- *Internet Messaging* enables you to send or receive messages to anyone via the Internet.

INTUITY Message Manager

The INTUITY Message Manager provides access to INTUITY AUDIX multimedia messaging processing features on a personal computer connected to a local area network (LAN). It also works with the DEFINITY AUDIX system. This feature requires three distinct components to operate.

- The AUDIX server software can be purchased with the INTUITY AUDIX system as an INTUITY Message Manager Right-to-Use. Also, this feature has INTUITY AUDIX hardware requirements.
- The Message Manager software diskettes can be purchased separately and are installed either on each user's PC or on a LAN server.
- The local area network is wholly owned and maintained by the customer and must meet certain requirements for the INTUITY Message Manager feature to work.

Message processing features available at a subscriber's PC with INTUITY Message Manager include:

- looking at up to sixteen message headers at a time and listening to messages in the order you choose. For subscribers who get many messages, this provides an easy way to view and prioritize messages.
- ability to send and receive fax-only or voice-fax messages, to view faxes on your PC, and optionally print faxes, text, email, and binary attachments
- recording, addressing, and scheduling messages
- replying to messages and forwarding messages
- annotating messages with a short subject line
- setting up AUDIX mailing lists on-line with easy text entry and editing. You can see the lists on-line and print lists on any local or network printer.
- setting up personal greetings, multiple personal greetings, or multilingual greetings on-line makes it easier for you to manage and maintain your greetings, and annotating your greetings helps jog your memory
- browsing the subscriber directory
- administering Outcalling notification on-line with easy text entry and editing
- storing (archiving) voice messages on your PC for a permanent record of voice mail when needed

DEFINITY AUDIX Voice Messaging System

The DEFINITY AUDIX system is a powerful voice mail system that enables you to create, store, send, and receive spoken messages electronically. Spoken prompts guide you as you enter simple one- or two-key commands at a touch-tone telephone. Subscribers can use the system 24 hours a day, sending and retrieving messages from any touch-tone telephone. And the AUDIX system helps to protect sensitive information by requiring users to enter a combination of subscriber login codes and passwords to access the system.

Whenever you call the DEFINITY AUDIX system, you interact with it by entering commands through your telephone's touch-tone keypad. You simply specify the activity, and follow the voice prompts for the specific task.

The DEFINITY AUDIX system gives small- to medium-sized businesses full voice messaging performance in a streamlined, cost-effective package. The result is high-performance voice messaging no matter what your business size.

Each DEFINITY AUDIX system supports up to 2000 mailboxes and stores up to 100 hours of recorded messages. It can be configured with 2 to12 ports (in 2-port increments) with no digital networking, or 2 to 8 ports (in 2-port increments) with digital networking.

The system includes such features as multiple personal greetings, full-functioned automated attendants, outcalling for message notification, and multiple language support. The DEFINITY AUDIX system includes both analog and proprietary digital networking software, which allows it to exchange voice messages, subscriber profiles, and message status information with other voice messaging systems.

By embedding the voice messaging system within DEFINITY ProLogix Solutions, the DEFINITY AUDIX system provides the following advantages.

- Because it is integrated within the switch, separate review and approval by government agencies for compliance with electrical requirements and other technical specifications often are not required.
- Connecting to the DEFINITY Communications System backplane provides direct access to switch interfaces such as time slots, signalling mechanisms, and power feeds.
- Bypassing analog ports and digital conversions provides a more efficient, higher quality call storage process.
- Using the same terminal with look-alike screens to administer both the switch and the DEFINITY AUDIX system allows faster training and better performance.
- You can use the DEFINITY ProLogix Solutions maintenance strategy with the DEFINITY AUDIX system to allow remote maintenance by the same team that maintains the switch.

While many voice messaging systems require separate equipment and connections, the DEFINITY AUDIX system easily installs directly into your DEFINITY ProLogix Solutions cabinet to support advanced voice messaging capabilities without the need for an adjunct processor.

The entire system is contained on circuit cards, occupying two consecutive slots in a compact modular cabinet (unless the system is in slot 6, where it will only take up one slot). All the major components are economically mounted onto the multifunction board using the latest technology in large-scale integration circuit chips and in surface-mount fabrication. The components mounted on the board include the central processing unit, the small computer system interface unit that supports the magneto-optical disk and hard disk, the digital signal processor complex that does speech processing, and the time-slot interfaces for the switch.

An external modem is required for remote maintenance. The DEFINITY AUDIX system operates by emulating a switch digital port board.

DEFINITY AUDIX Features

Special voice-processing features include Voice Mail, Call Answering, Outcalling, Multi-Level Automated Attendant, and Bulletin Board. The following is a summary of DEFINITY AUDIX capabilities.

- *Shared Extensions* provides personal mailboxes for each person sharing a telephone.
- *Multiple Personal Greetings* enables you to prepare a pool of up to nine personal greetings to save time and provide more personal customer service. Separate messages can indicate you are on the telephone, away from the desk, on vacation, etc. You can assign different messages to internal, external, or after-hours calls.
- *Priority Messaging* places important messages ahead of others.

- *Outcalling* automatically dials a prearranged telephone number or pager when you have messages in your voice mailbox.
- *Priority Outcalling* automatically dials a prearranged telephone number or pager when you have priority messages in your voice mailbox.
- *Broadcasting* enables you to send a single message to multiple recipients or to all users on the system.
- *System Broadcast* enables you to send broadcast messages as regular voice messages or as messages that recipients hear as they log in.
- *AUDIX Directory* enables you to look up the extension number of any other user by simply entering the user's name on the telephone keypad.
- *Personal Directory* enables you to create a list of nicknames for quick access to telephone numbers.
- *Call Answering for Nonresident Subscribers* provides voice mailboxes for users who do not have an extension number on DEFINITY ProLogix Solutions.
- *Full Mailbox Answer Mode* informs callers whenever messages cannot be left because there is no room in a subscriber's mailbox.
- *Name Record by Subscriber* lets you record your own name on the system.
- *Automatic Message Scan* can play all new messages in part or in their entirety without requiring you to press additional buttons, which is particularly useful when you are getting messages from your mobile telephone.

- *Sending Restrictions by Community* enables you to limit the communities of callers who can communicate via the AUDIX Voice Messaging System.
- *Group Lists* enables you to create mailing lists of up to 250 people to use for broadcasting messages.
- *Message Forwarding* enables you to forward messages with or without attached comments.
- *Name Addressing* enables you to address messages by name if you do not know the extension.
- *Private Messaging* is a special coding feature that prevents recipients from forwarding messages.
- *Leave Word Calling* enables you to simply press a button on your telephone in order to leave a standard “call me” message on any extension.
- *On-Line Help* provides you with instant access to voiced instructions at any time when you are using the system.

INTUITY CONVERSANT

The INTUITY CONVERSANT Voice Information System is an interactive voice-response system that automates telephone-call transactions from simple tasks like routing calls to the right department to complex tasks such as registering college students or providing bank balances. It communicates with customers in natural-sounding, digitally recorded speech. And it performs — 24 hours a day and without the services of an operator.

The system can handle single or multiple voice-response applications simultaneously, and can serve up to 48 callers at once. It can operate by itself to dispense information or collect data, or it can work with a host computer to access a large database such as bank account records. With its speech-recognition capability, even rotary telephone users can have access to sophisticated telephone-based services. Advanced telephone features provide intelligent call-transfer capabilities and allow you to use the system in your existing telephone environment.

The system's speech-recognition feature offers speaker-independent recognition of strings of digits and a standard vocabulary consisting of the digits 0 through 9, "oh," "yes," and "no." With speaker-independent speech recognition, the system understands virtually any caller speaking American English. This differs from speaker-dependent recognition, which understands only one particular speaker.

INTUITY CONVERSANT Voice Information System also supports a text-to-speech option, a leading-edge technology developed by AT&T and Lucent Technologies. Text-to-speech uses computer-generated synthesized speech to help you automate applications that were previously impractical to implement with prerecorded digitized speech. It is particularly useful for applications that require access to large-volume databases or for applications that access information that frequently changes. The feature has built-in intelligence that enables it to

- read abbreviations accurately. For example, “Dr.” is spoken as “doctor” or “drive,” depending on the context in which it occurs, and
- read numbers accurately. For example, the ZIP code, “11423,” would be read, “One-one-four-two-three,” and not as, “Eleven thousand four hundred twenty three.”

You can also create new applications for the system by using the optional, easy-to-use CONVERSANT Script Builder, a menu-driven application development software package that gives you the tools to create a custom voice-response application.

INTUITY CONVERSANT Voice Information System is installed on the MAP/100 platform, which provides support for many advanced features, such as speech recognition, text-to-speech, and ISDN capability.

Octel 100

Octel 100 is a highly integrated multimedia voice and fax messaging system designed specifically for small and mid-size businesses. By improving voice and fax communication, Octel 100 reduces wasted employee time and thereby cuts customer costs.

Octel 100 helps you:

- improve customer service by being more accessible and responsive to customer calls and messages
- enhance productivity by enabling employees to handle voice and fax messaging in a single mailbox
- lower operations costs through networked messaging
- simplify messaging system management
- keep messages secure
- protect the messaging system investment through scalability to 16 ports

Octel 100 Features

Here are some of the features of the Octel 100 system:

- *Call Routing V-Trees* enable callers to route their own calls via touch-tone keypad.
- *Information-on-Demand V-Trees* provide multilevel menus of information in a mailbox. These menus can give callers 24-hour-a-day access to spoken (audiotext) and written (fax retrieval) information.

- *Interview V-Trees* enable you to conduct simple surveys by requesting and collecting information from callers. All responses to an interview V-Tree are grouped in a single voice message for playback by the mailbox owner.
- *Call Screening* asks for and announces the caller's name to the called party who can accept or reject the call or redirect it to another extension. If the called party rejects the call, the system informs the caller there was no answer at the extension and offers the caller the option of leaving a message, transferring to another extension, speaking with an operator, or disconnecting. This feature requires supervised transfers.
- *Fax Mail* allows users to retrieve faxes in their mailboxes at their convenience—just like voice mail. When they're in the office, users need just a single key press to direct the fax messages to the default fax machine. Faxes retrieved through Visual Mailbox can also be directed to print on a printer attached to the user's PC. When they're out of the office, users can enter the telephone number of the nearest fax machine and receive fax messages immediately.
- *Global Group Lists* allow users to send messages to all members of that user's division or company. These lists are created automatically when users are added or modified through system administration.

- *Cascaded Outcalling (Message Notification)* enables Octel 100 Messaging to dial up to eight different telephone or beeper numbers when messages arrive in a user's mailbox. Users can select the days and time frames when they want to be notified (for example, Monday through Friday, 10:00 am to 8:00 pm), the number where they want to be called, and whether they want to be notified for all messages or for urgent messages only.
- *Visual Mailbox* gives users a Microsoft Windows-based graphical view of their mailboxes so they can use PCs to perform many of the same tasks they now perform on their telephones.
- *Visual Architect*™ gives system managers a graphical interface for creating V-Trees in system and user mailboxes using tools such as pull-down menus, toolbars, and point-and-click mouse operations. System managers record prompts to accompany the V-Trees using V-Edit™, Octel 100 Messaging's powerful integrated voice editor.

5 Call Center Solutions

DEFINITY ProLogix Solutions Call Center applications are designed to connect each caller efficiently to the representative best suited to serve that caller. DEFINITY ProLogix Solutions begins the process by capturing information about the caller even before the call is routed. That information is integrated with existing databases (see Chapter 7, “Computer Telephony Integration Solutions”), and the combined data is used to match the caller to the agent. Additional DEFINITY features politely keep callers waiting in queue (a holding place for incoming calls) informed about how long it will probably take to process the call. Detailed call statistics are constantly available to the agents and their supervisors.

Calls coming into your DEFINITY ProLogix Solutions call center are queued up and routed based on information that the system continually acquires. Each of your customers can be presented with a variety of options for leaving a voice message, leaving a fax, or monitoring the status of his or her call. Using CONVERSANT voice response software, the system can even respond appropriately to spoken information.

This section describes DEFINITY ProLogix Solutions call-center capabilities:

- CentreVu Call Management System (CMS)
- Dual CMS Links for High Availability
- CentreVu Supervisor
- CentreVu Explorer II
- CentreVu Visual Vectors

- Attendant Vectoring
- Automatic Call Distribution, which manages call traffic and work flow
- Basic Call Management System, which provides call management reporting for smaller call center operations
- BCMS Vu, which enhances the capabilities of the Basic Call Management System
- Call Center Basic, Call Center Deluxe, and Call Center Elite, which enable you to set up a call center
- CentreVu Virtual Routing
- CentreVu Advocate
- CentreVu Compact Call Center Solutions packages

DEFINITY ProLogix Solutions provides an applications platform that consists of several elements. When these elements are integrated to meet your business requirements, you will have the advanced call distribution and management capabilities that will deliver the performance and growth necessary for your business success.

Note: Some applications and products are unavailable in some countries. Please check with your local distributor for further information about which features and applications are available to you.

CentreVu Call Management System (CMS)

The performance of the CentreVu Call Center is critical to your business success. The CentreVu Call Management System (CMS) supplies the tools needed to use the knowledge of the present as well as the past to improve performance in the future. Call center supervisors and managers can answer questions about call handling, agent workload, and traffic capacities to create a call center that delivers maximum productivity while controlling expenses.

CentreVu CMS offers you one of the most comprehensive and advanced call center management systems in the industry. CentreVu CMS has sophisticated control mechanisms and reporting capabilities for effective management of call centers of all sizes, including multi-location operations. CentreVu CMS provides a comprehensive array of real-time and historical reports on virtually every aspect of call center operations. Managers can get real-time reports, updated as often as every three seconds, and historical reports that summarize call data into daily, weekly, or monthly totals. Enhanced features built into the standard software include customization of real-time and historical reports, exception notification, and the ability to design, test, change, and store call vectors in real-time. These features allow your call center managers to fine tune the call center on the fly to maintain peak performance levels. You will be able to quickly:

- Analyze trends
- Establish performance benchmarks
- Plan new marketing or customer service campaigns
- Match personnel resources to caller volumes and skill needs
- Identify areas for productivity gains and cost savings
- Identify training needs by agent and application

Optional features include Multiple ACD reports and “what if” forecasting. CentreVu CMS provides the information needed to manage the people, traffic load, and equipment in an ACD environment.

CentreVu CMS operates on a Sun SPARCserver or Ultra enterprise 3500 platform with a high performance RISC processor in conjunction with the ACD features of CentreVu Call Center. Status information is sent to CentreVu CMS from the DEFINITY ECS while ACD activities are in progress. This information includes specific event data on calls by agent, agent group, station, queued calls, trunks, trunk groups, and agent actions. With optional Call Vectoring, vector and Vector Directory Number (VDN) data is also tracked and stored. CentreVu CMS provides the information needed to manage the people, traffic load, and equipment in an ACD environment.

Dual CMS Links for High Availability

In response to customer requests for a CMS system that supports no data loss, Lucent now offers a CMS High Availability solution. The CMS High Availability (HA) offer provides dual ACD links to two independent, fully functional CMS servers when connected to a DEFINITY R8.1 or later communication server(s). The ACD link, CMS server, and disks will all be duplicated. If any of the duplicated components fail, access to any real time, historical, or call record data would not be lost.

This solution improves serviceability since one CMS is collecting data while the other CMS is being upgraded or serviced.

CentreVu Supervisor

Now you can view your call center through a user-friendly, Graphical User Interface (GUI). With CentreVu Supervisor, the powerful capabilities of CentreVu Call Management System (CMS) are expanded to provide a variety of administrative tools and reports to maximize your call center performance. CentreVu Supervisor enables you to:

- generate status reports in full customizable color graphical formats that are easy to interpret at a glance
- perform administration tasks easily with the use of a mouse versus a series of commands
- run other PC applications while actively monitoring call center conditions
- create thresholds for each individual supervisor or manager
- connect to a LAN. This also allows a CentreVu Supervisor users to print reports on any network printer for which the user has permissions.
- view reports on the Web, which saves time and distribution costs
- schedule reports, printing and other administrative operations at a later time
- access multi-site, real-time reporting for optimal call center management

CentreVu Supervisor gives call centers access to these capabilities from the convenience of desktop PC supported by Windows 95, Windows 98, or Windows NT 4.0.

The **recommended** PC configuration to support Call Center client applications in a Windows environment is:

- Processor: Pentium 133 MHz or faster
- RAM: 48 megabytes
- Resolution: SVGA with a graphics adapter supporting 16-bit color (64K colors) or higher, with 800x600 resolution or higher
- Available free disk space: 30 megabytes or more before installation of CentreVu Supervisor (English)
- Communications: TCP/IP protocol stack

CentreVu Explorer II

Transform valuable call center information into timely and useful knowledge. It's possible with Lucent Technologies CentreVu™ Explorer II - a powerful management tool to help you take your call center reporting capabilities a step further, providing a level of detail that's more specific than ever before.

CentreVu Explorer II will give your call center with the following advantages:

- Cradle-to-Grave Reporting

  All queries result in the return of accurate information produced by your call center. With CentreVu Explorer II, you have a complete view of all touch points for the caller, including the number of times a caller was transferred or placed on hold plus total hold and call handling time for the caller for months and even years after the actual call was received!

- Continuous Query Engine
  CentreVu Explorer II delivers a tool that enables thousands of query combinations to transform your current call center information into strategic knowledge.
- Reporting Engine
  Common queries can be created and shared with all system users for efficient and consistent reporting.
- Efficient ANI Analysis
  CentreVu Explorer II implements powerful analysis and queries of calling party number (ANI).
- Customer Classification

  With the use of Information Indicator (II) digits, available with ISDN, CentreVu Explorer II allows the analysis of a call's origin, identifying customers who call from pay phones, prisons, hotels, coin, and cellular phones (to mention a few).
- Abandon Caller Analysis

  CentreVu Explorer II provides details not only for callers who abandon in queue, but also those callers who abandon while placed on hold by the agent. Without expensive custom software, information is rarely available regarding callers who abandon in the call center.
- Special Call Treatment Analysis

  Unique call events such as calls marked as malicious, having audio problems, or those which were service observed, are tracked and stored.

Detailed call information, along with the CentreVu Explorer II software, is stored on a Microsoft Windows NT server with SQL 7.0 connected to the call center's Local Area Network (LAN). Call center personnel simply use their desktop PCs, equipped with standard Web browsers, to access the server and retrieve, sort, and analyze call data stored in the CentreVu Explorer II's local database. CentreVu Explorer II enables you to track how each and every incoming call was handled. You can use your Windows-based workstations with an industry-standard Web browser to connect to the LAN and use the CentreVu Explorer II Graphical User Interface (GUI) to access the local data base and access details such as how many times the call has been put on hold, or transferred, and by whom. With CentreVu Explorer II, your call center managers can select and analyze a comprehensive array of detailed call criteria, produce a variety of reports, and perform database administration, all from the convenience of their desktop PCs.

CentreVu Explorer II transforms valuable CentreVu Call Center information into powerful knowledge. With CentreVu Explorer II you can feel confident you're making informed decisions and evaluating your business armed with all the knowledge available to you.

CentreVu Visual Vectors

CentreVu Visual Vectors is a Java application that provides a graphical user interface for creating and editing vector and administering VDN assignments. Icons are provided for vector steps, with the capability to display actual vector contents in text format. Customers will be able to use "drag and drop" operations to construct or edit vectors. Additional information can be associated with the vector steps. For example, comments can be attached with descriptions of announcements or route to destinations. The vector editor can be used in a stand-alone mode to create or edit vectors and store them in a local scratchpad on the client for later installation on an ACD.

Attendant Vectoring

This is a new feature for calls seeking the attendant. It provides a low price solution for those customers who want to use vectoring for calls that go to an attendant without having to purchase vectoring software. This provides powerful features, such as announcement in queue, time of day routing, and route with coverage. Some of the vector steps include:

- announcement
- busy
- disconnect after announcement
- go to step/vector
  - ~ time-of-day
  - ~ unconditionally
  - ~ queue-fail
- queue-to
  - ~ attendant group
  - ~ attendant
  - ~ hunt-group
- route-to number with coverage y/n
- wait-time hearing silence/ring back/music
- stop

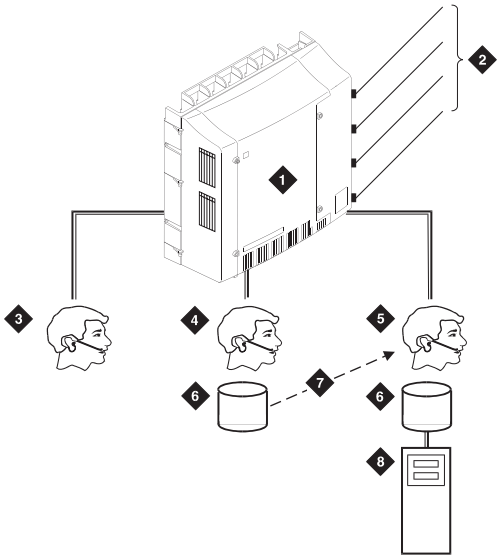
Automatic Call Distribution (ACD)

If your company has departments (such as sales, billing, or customer service) that handle large volumes of incoming calls, you can benefit by using DEFINITY ProLogix Solutions' powerful ACD capabilities. ACD is the basic building block for call center applications.

ACD offers you a method for distributing incoming calls efficiently and equitably among available employees or agents. ACD offers a number of ways to connect the agent to a call. With most idle agent distribution, an incoming call is routed to the agent who has been available for the longest time, resulting in balanced workloads for agents.

Agents in an ACD environment are assigned to a hunt group, a group of agents handling the same types of calls. DEFINITY ProLogix Solutions supports up to 99 different hunt groups. Each hunt group has associated trunks, stations, recordings, and queues. You can assign many ACD features on a per-hunt group basis to meet the different needs of diverse agent groups. You can link a telephone number to an ACD hunt group by associating a published number (often an 800 number) with the hunt group extension number of the hunt group.

In the Figure 5-1 example of a travel agency, Hunt Group A receives calls only when agents are available since it has no queue. Calls to Hunt Group B can be queued while agents are unavailable, and redirected to Hunt Group C if not answered within an administrable time. Calls to Hunt Group C are redirected to voice mail if not answered within an administrable time.



1) DEFINITY ProLogix Solutions
2) Incoming Lines
3) Group A: Business Travel
4) Group B: Personal Travel
5) Group C: General Information
6) Queues
7) Call Coverage to Group C
8) Voice Mail

Figure 5-1. A Basic Example of Automatic Call Distribution

DEFINITY ProLogix Solutions places all Automatic Call Distribution calls into a queue. Each call stays in the queue until an agent becomes available, until an optional timed interval expires, or until the caller hangs up. If the call has not been answered after an administrable period of time, an announcement can be played for queued callers. The call can then be connected to music to let the caller know that the call has not been dropped; it can be sent to a coverage path; or it can be connected to another announcement.

You can set a maximum queue length in a group to anywhere from 0 to 999 calls, and you can establish a queue warning level. If the preset maximum queue length is reached, additional incoming calls are redirected to a call-coverage path (if administered), ensuring that calls are routed to an extension that will answer or are given a busy signal. A priority-queuing feature allows you to designate which calls should receive priority; these calls override the standard first-in-first-out queuing pattern.

Two features provide for redirection of ACD hunt group calls.

- Intraflow allows an ACD call to be redirected from one hunt group to another through coverage paths that are assigned to determine call redirection criteria.
- Interflow allows new calls in a hunt group's queue to overflow and be sent to another ACD hunt group on another system using the Call Forwarding All Calls feature. Interflow can be useful during the evening, during peak operation times, or at other times when agents are unavailable.

ACD agents can use any DEFINITY ProLogix Solutions telephone. The CALLMASTER digital telephone is particularly recommended to meet the needs of ACD agents. A number of special ACD agent features can be assigned to these agents' telephones to enable them to perform their jobs effectively. In addition, special features are available to assist supervisors in observing and monitoring the performance of these agents.

Additional features give your company even more options when using ACD.

- Queue-Status uses button lamps and telephone displays to indicate call status for calls waiting in an ACD queue on telephones with a digital display. It can also display how long the oldest call has been waiting.
- Dialed-Number Identification Service allows agents to identify (via display telephones) the purpose of each incoming call and greet the caller appropriately.
- Automatic Available hunt group allows the CONVERSANT Voice Information System or other "nonhuman" agent positions to be staffed automatically and made available.
- Each agent can be logged into as many as four hunt groups at a time.

- Malicious Call Trace allows you to designate stations that can trace emergency or threatening calls. When an agent receives a malicious call, the agent presses the Malicious Call Trace button. The system gathers trace information and connects a voice recorder to the call. All equipment used to complete the call is held up (the call cannot be disconnected) until the feature is deactivated.
- Redirection on No Answer allows an unanswered, ringing call to be redirected to an ACD queue or to a Vector Directory Number after an administered interval. The agent position will also be taken out of service.
- Station Hunting allows calls to be routed first to the called extension, then according to a linear, circular, or modified circular sequence of extensions. The circular sequences work to distribute calls equitably, ensuring that there are no overworked “first” extensions in a hunt group.

Basic Call Management System

The Basic Call Management System, an integrated, internal capability, is a cost-effective solution for small start-up Call Centers or for existing companies with minimum system-measuring/reporting requirements. The Basic Call Management System helps you fine tune your Call-Center’s operation by providing reports with the data necessary to measure your Call Center agents’ performances.

This feature offers call management control and reporting at a low cost for Call Centers of up to 200 agents. The Basic Call Management System is ideal for companies that need call management features.

The Basic Call Management System collects and processes DEFINITY ProLogix Solutions ACD call data (up to 7 days) within the system; an adjunct processor is not required to produce call management reports.

The Basic Call Management System provides various measurements for monitoring the operations of an ACD application. Basic Call Management System software organizes ACD calls and call-center measurements into functionally different reports that supply information useful for managing ACD facilities and personnel. The reports can be displayed on the system administration terminal in real time, printed immediately, or scheduled for printing at a later time via the Report Scheduler feature.

The following are the types of reports that can be generated:

- Real-time reports
  - Agent Status
  - System Status
  - Vector Directory Number Status
- Historical reports
  - Agent
  - Agent Summary
  - Split
  - Split Summary
  - Trunk Group
  - Vector Directory Number report

BCMS Vu

BCMS Vu Release 2 is a 32-bit client/server software application that works with the Basic Call Management (BCMS) software. The BCMS Vu client runs on Windows 95 and Windows NT 4.0 or later. (BCMS Vu client does not support Windows 3.1 or later or Windows for Workgroup 3.11 or later.) The BCMS Vu server runs on Windows NT only.

Using BCMS Vu, Call Center managers can:

- capture BCMS historical data and store the data on the PC for 1 year (depending on the amount of information being stored)
- report on the historical data
- monitor the BCMS real-time data in graphical and tabular form
- display BCMS real-time data on a wallboard
- display text messages on a wallboard

BCMS Vu comes with pcANYWHERE™ software, which enables Lucent Technologies' maintenance engineers to perform remote diagnostics and remote maintenance on BCMS Vu.

Requirements

The following system requirements must be met for BCMS Vu to function properly:

- an IBM-compatible PC with:
  - a 486DX/66 or higher processor
  - a minimum of 16 megabytes (MB) of RAM
  - a minimum of 500 MB of hard disk space is recommended. The requirements for disk space on the user's PC depends on the size of the Call Center configuration and on the requirements for storing the historical data.
  - a double-speed or higher CD-ROM drive
  - an available serial port. A second serial port is required for remote maintenance using pcANYWHERE if connecting to an external modem. A third serial port is required if you are connected to a wallboard.
  - a sound board and speakers are required for CD-ROM training
- Microsoft Windows 95 or Windows NT 4.0 or later
- BCMS software installed on DEFINITY ProLogix Solutions
- an 8400B Plus data module to connect the PC to DEFINITY ProLogix Solutions

Call Center Basic

The Call Center Basic package enhances your Call Center by providing the following features:

- Automatic Call Distribution (ACD)
- Auto Available Split
- MIA Across Splits/Skills Option
- MIA Treatment for ACW
- Multiple Call Handling on Request
- Forced Multiple Call Handling
- Move Agent/Change Skills while Staffed
- Multiple Announcement Boards
- Redirect on no Answer (RONA)
- Service Observing by Class of Restriction
- Service Observing Remote
- Timed After Call Work/Agent Pause Between Calls
- VuStats (including the Service Level and Login IDs enhancements)

Note: 12 Agent Call Center Basic is provided free of charge with DEFINITY ProLogix Release 3 software.

Call Center Deluxe

The Call Center Deluxe package enhances your Call Center by including sophisticated Call Center capabilities such as advanced routing and vectoring and expected wait-time announcements. The Call Center Deluxe package includes all the capabilities of the Call Center Basic package in addition to the following features:

- Call Work Codes (CWC)
- Call Vectoring
- Call Prompting (Administrable Inter-digit Timeout and Administrable Converse Data Passing Rate)
- Redirect on no Answer to Vector Directory Number
- Support Network Provided Digits (Caller Information Forwarding)
- Service Observing on Vector Directory Numbers
- Vector Directory Number of Origin Announcement
- Vector Directory Number Return Destination
- Vector Administration (Route to with/without Coverage and Multiple Audio/Music Sources)
- Vector Initiated Service Observing
- Vectoring Advanced Routing

- ANI/II Digits Routing
- ASA Routing
- Best Service Routing Single Site
- EWT Routing
- Vector Directory Number Calls Routing
- Wildcard Matching

Call Center Elite

The Call Center Elite package enhances your Call Center by including all the capabilities of the Call Center Deluxe package in addition to the following features:

- Expert Agent Selection
- Reason Codes for Login, Logout, and ACW

CentreVu Virtual Routing

CentreVu Virtual Routing is designed to help you provide the best possible service to your customers and use all your call center resources wisely and cost-effectively. CentreVu Virtual Routing allows multiple locations to work together as a single virtual call center. Its smart routing capabilities monitor and anticipate changing conditions across your virtual call center network to find the best place to deliver each call, every time.

CentreVu Virtual Routing can help you:

- save on network costs
- optimize existing resources
- balance agent workloads
- ensure consistent, reliable customer call handling and service
- equalize enterprise-wide call volume across sites or across multiple splits/skills at a single site

CentreVu Virtual Routing provides Best Service Routing - the ability to automatically deliver each call to the best place based on a combination of criteria. You can use Best Service Routing with CentreVu Advocate to make your multisite routing even more precise and effective. Once Best Service Routing delivers a call to the "right" call center or split/skill, CentreVu Advocate determines the best agent to handle the call based on your caller's needs and the caller's value to your business.

In addition to Best Service Routing, CentreVu Virtual Routing offers Enhanced Look-Ahead Interflow (LAI) multisite routing. Look-Ahead Interflow can help improve customer service and satisfaction by speeding the distribution of calls among locations or skills/splits with low call volumes and long hold times.

CentreVu Virtual Routing also supports enhanced information forwarding to provide valuable details along with each routed call. The information "attached" to each call may include:

- Vector Directory Number (VDN)
- Caller-supplied collected digits
- Dialed Number Identification Service (DNIS)
- Accumulated time waiting

CentreVu Virtual Routing also passes along a Universal Call ID (UCID), a unique identification “tag” that is attached to each call and remains with the call as it is routed throughout your network. By passing Universal Call ID, CentreVu Virtual Routing enables lifetime tracking of calls routed among call centers, DEFINITY systems, or adjuncts such as INTUITY CONVERSANT for interactive voice response.

CentreVu Advocate

You can leverage your call center as a strategic business asset with Lucent Technologies’ innovative CentreVu® Advocate software solution. CentreVu Advocate eliminates the chaos and randomness associated with call handling and provides directed routing with customer-pleasing results. This breakthrough software offers new methodology for aligning your enterprise objectives with agent and management performance and customer needs. With CentreVu Advocate, you can drive call center performance according to your business plan. This software application features expert routing algorithm software from Bell Labs that lets you implement complex customer service, agent resource, and enterprise planning strategies as a critical formula in call center operations. With CentreVu Advocate, you can transform your call center into a powerful strategic advantage for your enterprise. CentreVu Advocate works in conjunction with and requires Expert Agent Selection (EAS).

Advocate will provide your call center with the most innovative methods and enhanced flexibility in selecting the optimum agent for a call or the best call for an agent. With CentreVu Advocate, you determine which call to select the moment an agent becomes available.

CentreVu Advocate provides the following features:

- Service Objective

  This capability enables you to establish a unique service objective for each skill in your call center. Service Objective can be used to establish different levels of service for multiple types of calls with various media and priority handling needs. You can match the service levels your customers expect by combining the power of your service level plan with the power of Service Objective.

- Predicted Wait Time

  Predicted Wait Time will enable your call center to predict service-affecting events while minimizing the impact on your key call center metrics. By balancing the average speed of call answering across skills, this feature provides more uniform customer service levels. By matching the needs of your caller to the skills of your agent, Predicted Wait Time ensures that all calls are given the best possible service. Predicted Wait Time will help your call center build stronger customer relationships and will improve your overall call center efficiency.

- Least Occupied Agent

  This capability distributes calls evenly across all available agents in order to balance the workload among those with few skills and those with several skills. When one or more agents are available, Least Occupied Agent uses agent occupancy rather than position in an idle agent queue to determine which agent to select when a call arrives. Least Occupied Agent can help you maintain your staff by promoting agent fairness and eliminating hot seats.

- Service Level Supervisor with Reserve Agents

  Service Level Supervisor gives you the ability to set Estimated Wait Time (EWT) thresholds for skills and to assign agents as reserve, in the event a skill overruns its threshold. Service Level Supervisor will override your agents normal call handling preference to assist calls from a skill whose threshold has been exceeded. This feature allows your call center to rapidly adjust to high traffic conditions with the flexibility of automatically activating predefined Reserve Agents when a skill is in an over-threshold condition. This feature will improve your overall efficiency by eliminating the need for your supervisors to manually intervene when traffic conditions change and by effectively scheduling workloads for agents with multiple skills.

- Percent Allocation

  Percent Allocation allows you to designate the percentage of time your agents spend in each skill. Incoming calls are matched to those agents with the “best fit” based on their allocated skill percentage. By scheduling an agent’s time among multiple skills, you can better utilize and schedule your agents. Percent Allocation can also improve agent performance and satisfaction by “guaranteeing” them a certain amount of time in each skill.

CentreVu Compact Call Center Solutions

The CentreVu Compact Call Center Solutions are an easy and cost-effective way for businesses to implement small call centers. Two packages are available:

- Basic Package

  The Basic Package offers the following features:

  - support for 6, 12, 25, or 50 agents
  - DEFINITY Release 6.3 and Release 8 Deluxe Call Center software RTU license
  - Basic Call Management System RTU license
  - BCMS Vu Release 2 single-user license
  - 8400B+ data module
  - CD-ROM-based ACD/Vectoring training
  - CD-ROM based Basic Call Management System administrative training

- Deluxe Package

  The Deluxe Package offers the following features:

  - support for 6, 12, 25, or 50 agents
  - DEFINITY Release 6.3 and Release 8 Deluxe Call Center software RTU license
  - Basic Call Management System RTU license

- BCMS Vu Release 2 single-user license
- 8400B+ data module
- CD-ROM-based ACD/Vectoring training
- CD-ROM based Basic Call Management System administrative training
- DEFINITY Integrated Announcement circuit pack, which is the hardware that connects into the DEFINITY ProLogix Solutions system to enable delayed announcements.
- DEFINITY Call Classifier circuit pack, which enables calls centers to offer callers simplified call prompting capabilities for basic menu selections and routing options without needing an INTUITY CONVERSANT system.

6 Wireless Solutions

Most businesses today struggle to improve customer service and increase profits while they control costs and staff size. That means employees have to be more productive, more responsive, and often more mobile. Wireless solutions allow you to control costs by reducing time and resources spent on paging employees, interrupting work to find a telephone, rushing to answer calls, or being tethered to the desk waiting for an important call. Reliable wireless tools remove the fear of losing customers who could not wait to reach you directly.

Lucent Technologies' cordless telephones give you complete freedom to make and receive calls around your office. Lucent Technologies is the top U. S. provider of wireless solutions for business. Lucent Technologies' Mobility Solutions offer a range of options from cordless telephones to integrated cellular business systems that greatly enhance the flexibility of wireless telephones.

Note: Some applications and products are unavailable in some countries. Please check with your local distributor for further information about which features and applications are available to you.

Medium Range Mobility Solution

The TransTalk 9000 (Figure 6-1) is a multiline, single zone or dual zone solution that allows you to roam up to 700 feet (213 meters) from the base station in each zone. It effectively covers up to 500,000 square feet (45,000 square meters) in most business environments in each zone.

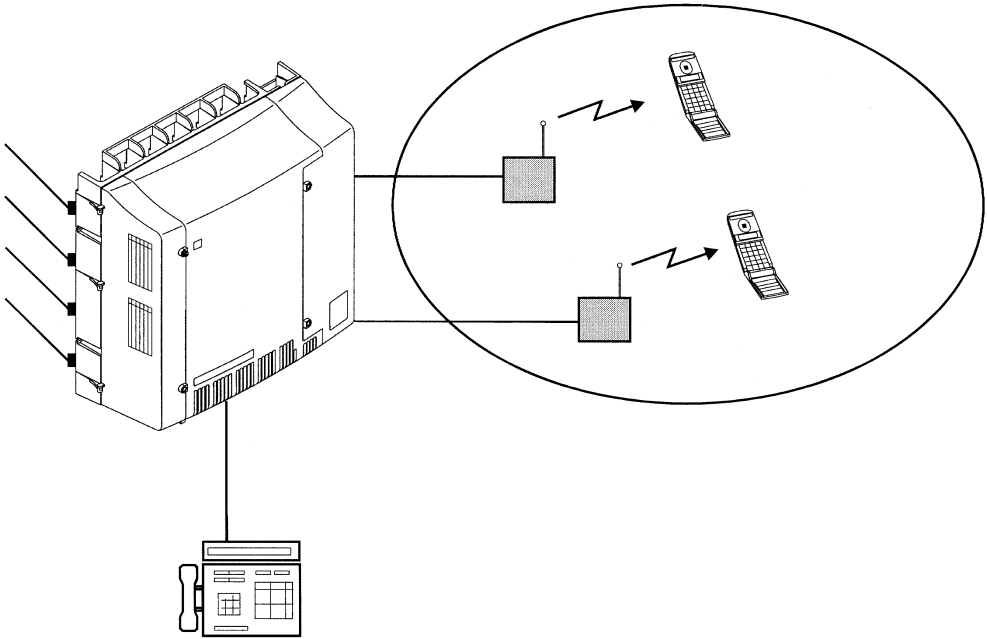


Figure 6-1. TransTalk 9000

TransTalk 9000 is available in two configurations:

- single zone
  - ~ Single user consists of handset, radio, charger, and power supply for radio.
  - ~ Multiple user consists of handset, radio, and charger. In this configuration, power is provided by a carrier.
- dual zone
  - ~ Single user consists of handset, two radios, charger, and power supply for two radios.
  - ~ Multiple user consists of handset, radios, and charger. In this configuration, power is provided by carriers.

The wireless telephones have the following features:

- crystal clear voice quality
- consistent privacy and secure operation
- Intercom feature
- Conference and Transfer capabilities
- programmable feature buttons
- automatic registration
- extended battery life option
- battery pack

- rapid battery charger (2 1/2 hours)
- dynamic power adjustment
- Mute button
- mobility range test capabilities

Long Range Mobility Solutions

Lucent Technologies offers two robust systems that will keep you in touch with customers, coworkers, and suppliers wherever you go in your office complex—desk-to-desk, office-to-office, or office-to-warehouse. In both systems, overlapping zones enable you to move about freely without changing telephones (Figure 6-2). The telephone connection is “handed off” from one transmitter to another as necessary (within the influence of a single radio controller).

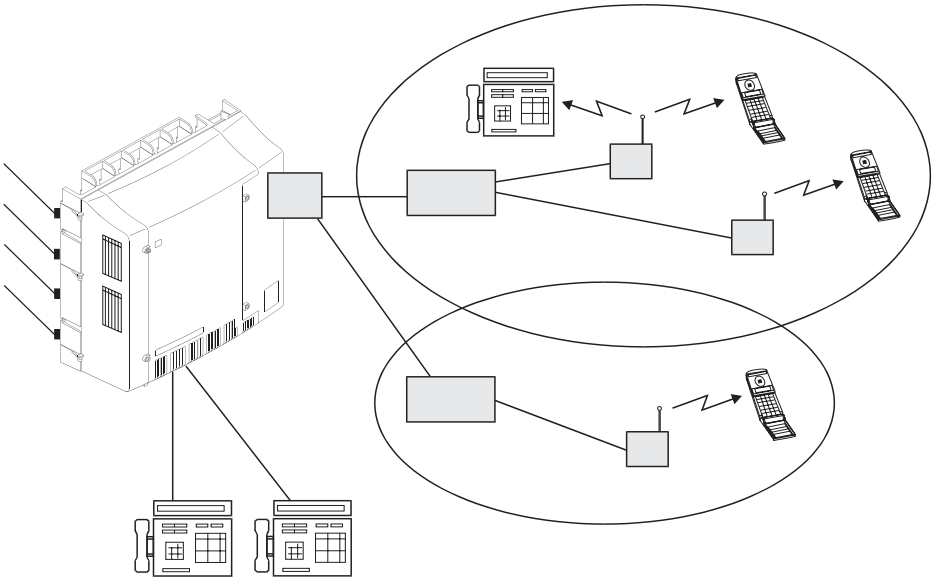


Figure 6-2. Long Range Mobility Solutions

The DEFINITY Wireless Business System - PWT (for the U.S. and Canada) and the DEFINITY Wireless Business System - DECT Adjunct Solutions (for international) are similar in many respects. The DEFINITY Wireless Business Systems can be integrated with DEFINITY ProLogix Solutions, and thus have some inherent efficiencies. The DECT system uses an adjunct device. It also uses an international industry standard that is more common in some parts of the world.

Both systems feature Lucent Technologies' Wireless System Engineering Expert Design System. This patented software, which is unique in the wireless industry, analyzes the building or campus space and determines how the wireless system should be configured. It precisely locates base stations within the structure or structures. The software effectively eliminates the most difficult aspect of wireless implementation and ensures maximum efficiency and lower lifecycle costs.

DEFINITY Wireless Business System - PWT

The DEFINITY Wireless Business System - PWT relies on DEFINITY ProLogix Solutions to manage mobility. It uses Personal Wireless Telecommunications technology. This standard, which has the primary advantage of permitting up to 12 simultaneous conversations per base station, defines the radio interface between the portable telephones and the base stations in the system.

The DEFINITY Wireless Business System - PWT is fully integrated with DEFINITY ProLogix Solutions and offers users full access to DEFINITY ProLogix Solutions features. The system has the following maximum capacities:

- 1500 wireless telephones
- 240 base stations
- 7,000 to 40,000 calls per busy hour (depending on DEFINITY Prologix Solutions configuration)
- 6 million square foot coverage area

DEFINITY Wireless Business System - DECT Adjunct

The DEFINITY Wireless Business System - DECT Adjunct is an adjunct connected to DEFINITY ProLogix Solutions and provides on-site, 2-way voice mobility within a building or business campus. The DEFINITY Wireless Business System - DECT Adjunct uses the Digital Enhanced Cordless Telecommunications (DECT) technology to provide wireless communications for European countries. Users carry a Pocket phone to make and receive calls. The Pocket phone is a small, light weight, digital, cordless handset that provides the same features as an analog telephone.

The DEFINITY Wireless Business System - DECT Adjunct has the following maximum capacities:

- 360 Pocket phones
- 24 base stations
- 1 million square meters coverage area

The DEFINITY Wireless Business System - DECT Adjunct provides the following software to manage the system:

- System Manager, which provides management capabilities over the wireless system. The System Manager is used to load and back up system files, upgrade circuit packs, and display system alarms.
- DECT Manager, which manages all of the DECT radio components of the system.

Starter Application Package

The Wireless Starter Package enhances mobility within your business locations by enabling employees to receive important calls when they are away from their desks. Available in single-zone and multizone packages for anywhere from 1 to 25 users, the Wireless Starter Package gives workers convenient business calling features in compact handsets.

The Wireless Starter Package consists of the DEFINITY Wireless Business System - PWT 6 and 10 handset packages. Availability may vary by location or country. Call your Sales Representative for details.

7 Computer Telephony Integration Solutions

Computer Telephony Integration (CTI) is the linking of telephone communication systems to personal computers, which can increase productivity and customer satisfaction through the exchange of information between the PC and the telephone. CTI applications integrate data processing, data communications, and voice communications.

DEFINITY ProLogix Solutions supports the following types of CTI applications.

- Server-Based Solutions, which require the Lucent CTI server and the MAP-D (Multi-application Processor for DEFINITY) board (TN801B).
- DEFINITY IP Softphone, enables users to control telephone calls (both incoming and outgoing) directly from a personal computer.

Server-Based Solutions

DEFINITY ProLogix Solutions supports third-party CTI applications via ASAI and TCP/IP links. These CTI links are supported on DEFINITY ProLogix Solutions using the MAP-D (Multi-application Processor for DEFINITY) processor complex. The MAP-D processor complex consists of a Pentium based processor running Unixware operating system software and special driver software. The MAP-D is integrated with the DEFINITY ProLogix Solutions system, allowing Lucent CTI server software to run as part of the DEFINITY system. DEFINITY LAN Gateway and CallVisor PC/LAN are supported on the MAP-D.

The MAP-D board (TN801B) requires three slots in the CMC cabinet. However, if placed in slots 6 and 7, the MAP-D will only require two slots.

MAP-D on ProLogix supports eight ASAI links. The maximum MAP-D message rate is 120 full duplex messages per second. With Release 8 software and the use of the C-LAN board, ASAI bandwidth increases to 240 messages per second. If the C-LAN board is not installed, the message rate remains at 120 messages per second.

Third-Party Applications

All of the third-party CTI applications currently supported by DEFINITY ECS are also supported by DEFINITY ProLogix Solutions. The following is a list of some CTI applications that are currently available. Availability of these applications varies by country.

- SmartRoute

  SmartRoute is a sophisticated routing system for call center environments. It enables users to define custom sets of rules for real-time call routing by associating scripts with PBX facilities receiving calls. SmartRoute enhances the ability of a call center's PBX/ACD to make decisions about call routing by enabling customer-oriented decisions. Scripts may be set up to access various sets of customer-specific data via an ODBC interface, enabling users to route callers intelligently to the best-fit agent for the particular situation.

- Sixth Sense

  Sixth Sense enables call centers to perform screen-pops and a variety of subsequent call wrap-up functions such as completing forms, updating databases, faxing information, sending E-mail, etc. Sixth Sense is a 32-bit Microsoft Windows application that runs on Windows NT and Windows 95 and waits for certain events to occur, such as:

  ~ telephony events (call ring, answer, or hang up)
  ~ keyboard or mouse events (hotkey)
  ~ Dynamic Data Exchange (DDE) events
  ~ timers

  When Sixth Sense detects a particular event, it triggers a script to take a particular action such as opening or closing applications, querying or updating databases, popping screens, generating documents, faxing information, or pre-filling forms. By automating these activities, Sixth Sense saves call center agents a significant amount of time.

- Intuition ™

  Intuition is a scaled down version of Sixth Sense that was designed to be a cost-effective software application to provide easier entry into CTI applications for small Call Center customers. Intuition automates the business process by using sophisticated rules-based intelligence. It “listens” for events such as inbound and outbound calls, DDE, hot key and time based events, then applies the Rules you define. For example, the you can define an Intuition Rule that runs a script or opens a spreadsheet when you get a call from a stockbroker.

  While Intuition is similar to Sixth Sense, Intuition integrates tightly with SoftPhone Agent v.5 and includes the following new features:

  ~ Script Recorder for creating script by recording user keystrokes
  ~ simulation for telephony events
  ~ auto-attendant support for scriptless call handling
  ~ enhanced User Interface

- Fast Call® Agent 3.0

  FastCall Agent is the next generation of Lucent's most popular CTI middleware product known as FastCall. This new release is newly designed and now offers an even easier installation and usability than ever before. FastCall Agent provides a broad range of CTI functionality without requiring changes to applications or development of custom software programs.

  FastCall Agent resides between the telephone system and computer applications – thus the term "middleware." This approach allows the agent to enable these applications with inbound and outbound CTI capabilities without computer code changes within the application itself. This provides tremendous flexibility for companies with multiple departments that can benefit from CTI capabilities, particularly when each department has a different application. In addition, changes to the application do not affect FastCall Agent. Rather, FastCall Agent can be reconfigured to adapt to a new application quickly and easily. FastCall Agent "screen pops" populate a call center agent's Windows-based application screen based on the calling number (ANI), called number (DID, DNIS, ACD group, or other telephone system identifier), or the caller's touch tone input as the incoming call is received. These applications could include databases, help desk packages, sales force automation programs, personal information managers (PIMs), contact managers, word processors, spreadsheets, customized inquiry systems, or a combination.

DEFINITY IP Softphone

DEFINITY IP Softphone enables the end user to control telephone calls (both incoming and outgoing) directly from a personal computer. DEFINTY IP Softphone enables the end user to log into your company's DEFINITY server remotely and make and receive telephone calls from the telephone extension.

With DEFINITY IP Softphone, end users can

- use LAN-based H.323 multimedia endpoints to make and receive calls
- access the DEFINITY ProLogix Solutions system as a "local" station user or as an "outside" trunk user from across a local area network or the Internet
- use the Internet as a pathway for audio calls between switches (that is, IP trunking)

DEFINITY IP Softphone operates on the DEFINITY IP Solutions platform, which brings together the flexibility of IP networks with the richness of voice communication, providing investment protection and optimization in IP, ATM, and PSTN networks. With DEFNITY IP Solutions, full applications, features, and management capabilities are carried into the IP environment. Remote workers have full access to communication system features from their PCs. (See Chapter 10 for more information about DEFINITY IP Solutions.)

8 Telecommuting/Virtual Office Solutions

Lucent Technologies' research, supported by industry studies, shows that telecommuters are generally 15 to 30 percent more productive when they work at home. They convert travel time into productive work time, are less likely to be distracted by normal office routines, and frequently end up working longer hours with greater output. During severe weather, they can continue working when others cannot.

Special DEFINITY system modules are available for telecommuting. In addition, many standard DEFINITY ProLogix Solutions and voice messaging features work well for telecommuters.

DEFINITY ProLogix Features for Telecommuting

The DEFINITY ProLogix Solutions includes several features that make telecommuting even more convenient.

Remote Call Coverage/ Call Forwarding Off-Net/Coverage of Calls Redirected Off-Net

Remote Call Coverage and Call Forwarding Off-Net allow calls to be redirected to a remote location. This allows you to have calls placed to your office telephone number redirected to your home office. You can administer the system to either monitor calls and bring them back for additional processing if not answered (for example, voice mail) or to leave calls at the remote (off-net) location. (There is a one-second delay before the caller connects to the remote telephone.)

In Release 3, the Coverage of Call Redirected Off-net (CCRON) feature provides administrable parameters that allows you to select the CCRON options you want. You can now administer the following general coverage and forwarding features (which are not CCRON specific):

- Feature access codes for Remote Send All Calls Activation and Remote Send All Calls Deactivation
- Threshold Activated Call Forward Timer
- Coverage After Forwarding (per station)
- An option to maintain or end a simulated bridged appearance on the principal's telephone whenever a call is redirected to coverage

Extended User Administration of Redirected Calls (Telecommuting Access)

Extended User Administration of Redirected Calls (also called Telecommuting Access) allows you to change the active call coverage path or forwarding extension from any on-site or off-site location. Thus you can change the path or extension from your home office, for example.

Personal Station Access

Personal Station Access allows you to transfer your telephone station preferences and permissions to any other compatible telephone. This includes the definition of terminal buttons, abbreviated dial lists, and Class of Service and Class of Restrictions permissions. It can be used on-site or off-site (with DEFINITY Extender). This feature has several telecommuting applications. For example, several telecommuting employees can share the same office on different days of the week. The employees can easily and remotely make the shared telephone “theirs” for the day.

Station Security Codes

Station Security Codes protect access to telephone stations. Now these codes can be changed by the telephone users. This feature enables you to easily ensure protection of your console features.

All of these features are described in detail in the DEFINITY ECS Release 8 Administrator's Guide (555-230-502) under the following feature names:

- Call Coverage
- Call Forwarding
- Extended User Administration of Redirected Calls
- Personal Station Access
- Station Security Codes

Pipeline 15

The Lucent Pipeline® 15 is an easy-to-use ISDN-BRI terminal adapter that provides a single user access to remote services (such as a corporate headquarters, intranet, or the Internet) over an ISDN-BRI line. The Pipeline 15 supports high-speed digital connections while simultaneously offering two analog ports for sharing the ISDN-BRI line with analog devices such as a telephone, fax machine, answering machine, and/or modem. By combining separate transmission services over a single line, the Pipeline 15 allows users to consolidate billing and achieve superior consolidated performance.

Installing and configuring the Pipeline 15 is easy. The Pipeline 15 connects to an IBM-compatible PC, Macintosh®, or UNIX® workstation via an RS-232 serial cable and has a powerful graphical user interface that enables users to set up and configure their unit in less than 15 minutes.

The Pipeline 15 supports integrated Multilink PPP, Multilink Protocol Plus, and Bandwidth Allocation Control Protocol, which will save users money each year by dynamically adding and subtracting bandwidth based on need. The Pipeline 15 also supports caller line ID devices on its two analog ports and advanced analog calling features such as hold, drop, conference, and transfer.

Additionally, there is a comprehensive series of Pipeline and SuperPipe access routers available.

DEFINITY Extender

DEFINITY Extender is a single-box remote voice and data solution for telecommuters, remote agents, and branch offices using the DEFINITY ProLogix Solutions. DEFINITY Extender helps increase the productivity and performance of remote workers by allowing them to access the features of the DEFINITY ProLogix system and their corporate LAN. With the DEFINITY Extender, remote voice access is just as simple as remote data access for off-premises employees.

The DEFINITY Extender product family provides off-site employees with all of the features of their ProLogix system, no matter where they are located, over analog or ISDN-BRI connections. A switch module located at the DEFINITY ProLogix Solutions location and a remote module located at the off-premises location are all you need to provide an off-premises employee with full voice and data communications functionality.

AUDIX Features for Telecommuting

The following INTUITY AUDIX and DEFINITY AUDIX features are useful for telecommuting:

- *Multiple Personal Greetings* allow subscribers to prepare a pool of up to nine personal greetings to save time and provide more personal customer service. Separate messages can indicate the subscriber is on the telephone, away from the desk, on vacation, etc.

Note: This feature only works in a centralized environment. (With the Mode Codes interface, you cannot set up separate internal and external greetings.)

- *Outcalling* automatically dials a prearranged telephone number or pager when messages are received in a user's mailbox. The system tells whoever answers that messages have been received.
- *Priority Outcalling* provides outcalling notification of priority messages only. This allows the telecommuter to be relatively undisturbed by notifications of messages that do not require immediate attention.
- *Call Answering for Nonresident Subscribers* provides AUDIX System mailboxes for remote users who do not have a telephone but do have an extension number on the DEFINITY ProLogix Solutions.

For example, when working at home, you set up Priority Outcalling so the system will call you when you have messages marked "priority" by the caller. Then you activate a personal greeting that says something like, "Thanks for calling. I'm working away from the office today. I'll be checking voice mail periodically, so please leave a message. If your message is urgent, press 2 after recording it. This will give your message priority status. The system will notify me of your priority message almost immediately."

Starter Application Package

The Virtual Office Starter Package lets you provide voice and data access for off-site workers and telecommuters. Ideal for businesses with employees who often work at home or other remote locations, this package allows workers to access your business LAN or the Internet from a remote office or home. Off-site workers can even receive telephone calls using a single telephone number no matter where they are, enabling them to work where they need to.

Call your Sales Representative for details.

9 System Administration Solutions

Managing a powerful communications system like DEFINITY ProLogix Solutions was once a formidable task, requiring specially trained administrators who could operate complex programming tools. But, as the capabilities of systems become more sophisticated, so too have the tools that administer them.

DEFINITY ProLogix Solutions offers a variety of easy-to-use modular tools for managing your system. Whether your system is small or large, stand-alone or networked, DEFINITY ProLogix Solutions has the tools to manage your system efficiently.

Terminal and facility administration features enable you to administer telephones, computers, facilities, and features throughout your system or network. Traffic management features enable you to measure, manage, and report on the voice and data communications traffic throughout your system or network. Maintenance features enable you to view the health of your system and perform maintenance procedures on your own system, if you choose to do so.

This broad system management philosophy extends DEFINITY ProLogix Solutions' power and flexibility into the tools for managing the system. These tools are based on the user-friendly architecture that is the hallmark of DEFINITY products. The system management capabilities of DEFINITY ProLogix Solutions have been enhanced to accommodate all configurations.

Note: Some applications and products are unavailable in some countries. Please check with your local distributor for further information about which features and applications are available to you.

System Management Terminal and Applications

DEFINITY ProLogix Management Terminal and Enterprise Management Applications are two fundamental options for managing different systems based on size and requirements. They have been designed with similar user interfaces. Screen layouts and the use of commands and keys are much the same. This means that you can migrate from one option to another smoothly and with minimal training.

DEFINITY ProLogix Management Terminal

The Management Terminal interface is the integrated management tool built into DEFINITY ProLogix Solutions. It provides an intuitive interface with forms-based selections, help keys, and a language-based interface (several languages are available).

The system administrator uses a DEFINITY ProLogix Management Terminal or PC with communications software (such as DEFINITY Site Administration Release 1.5) to access the system to perform “task-oriented” administration and maintenance procedures.

Using the Management Terminal, the system manager can

- manage system, voice-terminal, and data-terminal features on a day-to-day basis
- perform system backups
- monitor system performance
- perform selected maintenance procedures
- maintain system security

DEFINITY Site Administration Release 1.5

DEFINITY Site Administration is a general-purpose DEFINITY System Management tool that makes basic administration of the DEFINITY system more convenient. With this application, users can navigate, display, add, modify, and/or remove the DEFINITY system and related object more easily than they could using an SAT terminal.

DEFINITY Site Administration streamlines common system administration tasks by providing:

- short cuts to command administration commands
- the ability to schedule tasks to run at a later date
- the ability to print button labels
- the ability to create AUDIX subscribers easily with either a default mailbox or a custom mailbox

DEFINITY Site Administration, which provides an easy-to-use, 32-bit, Windows-compliant, graphical user interface, runs on Windows 95, Windows 98, and Windows NT 4.0 or later. Designed to support DEFINITY AUDIX and INTUITY AUDIX systems, DEFINITY Site Administration requires an active DEFINITY system or AUDIX connection for proper operation. One licensed copy of DEFINITY Site Administration is shipped with every DEFINITY ProLogix system, and additional copies can be purchased.

DEFINITY Site Administration provides the following functionality:

- Browser

  The Browser provides navigation and access to features and services. The user creates hosts and their related data objects and accesses their DEFINITY and/or AUDIX hosts from the Browser. The Browser is based on a standard tree view and forms the central user interface component in DEFINITY Site Administration.

- Emulation

  The Emulation support in DEFINITY Site Administration includes AT&T 4410, 513, VT100, VT220, 615, and 4425 and provides the most basic form of System Administration.

- Graphically Enhanced DEFINITY Interface (GEDI)

  The Graphically Enhanced DEFINITY Interface feature provides users with a Windows-like interface to:

  - add DEFINITY objects
  - remove DEFINITY objects
  - change DEFINITY objects
  - view the status of DEFINITY objects
  - duplicate DEFINITY objects
  - test DEFINITY objects
  - generate tasks that may be scheduled to run at a later date and time

- Task bar support for all devices (such as AUDIX)
- Scheduler

  The Scheduler enables users to specify a task to run at a specific date and time. A task is a collection of one or more operations that users can specify to run at a predetermined time. Tasks can be generated from either the Graphically Enhanced DEFINITY Interface, or any of the DSA Wizards.

- History Log

  The History Log enables users to view the results of running and completed tasks.

- Scheduler Viewer

  The Scheduler Viewer enables users to view the task or job status while it is being executed. The Scheduler Viewer also shows the queue of jobs yet to run.

- Button Label Printing

  The Button Label Printing feature enables users to print button labels for the handsets using a standard Windows laser printer. Users can print any text from a template and can also print label rectangles onto blank paper. This feature provides a graphical print preview and also supports printing multiple labels of the same type.

- Add User Wizard

  The Add User Wizard assists in the creation of station and subscriber details by automatically providing help such as available extensions and ports and allowing users to base the creation on an existing template.

- Call Accounting Data Export

  The Call Accounting Data Export feature enables users to export information on stations, trunks, agent login identification, Authorization Codes, and trunk circuits from the DEFINITY ProLogix system to share with any third party call accounting program that can work with DEFINITY Site Administration.

- Import/Export Capability

  DEFINITY Site Administration provides easy graphical exporting and importing of agent login, coverage paths, hunt groups, data modules, stations, trunk groups, vectors, and VDNs. Users can export data fields to databases such as Microsoft Excel. Users can then change the data, import the data back into DEFINITY Site Administration, and then resend the data to the DEFINITY ProLogix system. The import/export capability can also assist users in creating corporate directories and custom reports.

- AUDIX subscriber import, export, and find/replace wizard
- Direct data export from AUDIX and DEFINITY to LDAP directories
- Vector object support in templates, export, import, and find/replace
- Support for generic devices such as emulation on CMS, Octel, and general UNIX

- Capacity Display

  The Capacity Display feature enables users to be notified when the DEFINITY ProLogix system is reaching capacity (for example, coverage paths)

- Switch/PC Time Synchronization

- Trunk Analyzer

  The Trunk Analyzer feature enables users to poll trunk data and then view the data in Erlang B, C, or CCS. The ability is also available to dynamically change the GOS and have the data recalculate the number of trunks to add or delete.

- Alarm Monitor

  The Alarm Monitor feature enables users to receive alerts from the DEFINITY ProLogix system (when the users are connected to the system) when there is an alarm. These alerts describe the alarm.

- Reporting

  The Reporting feature enables users to print/export any switch command. The output from the switch command can be emailed.

- Hardware Manager

  The Hardware Manager feature enables users to view a graphical circuit configuration and alarms/errors.

- Global Change Capability

  The global change capability enables users to select and change field values in one or more of the following objects that match a search filter:

  - agent login ID
  - coverage path
  - data module
  - hunt group
  - station
  - trunk group
  - VDN
  - vectors

- Create Station Templates Wizard

  The Create Station Templates wizard steps users through easy-to-follow instructions on how to create station templates.

- Add Bridged Appearances Wizard

  The Add Bridged Appearances wizard steps users through easy-to-follow instructions on how to add bridged appearances to telephones.

- Out of Service Trunks

  The Out-of-Service Trunks feature creates a task that checks periodically for out-of-service trunks. If an out-of-service trunk is found, the users are notified either in the DSA message box or by email.

- Reports

  DEFINITY Site Administration provides the following reports:

  - Browse Dial Ranges, which enables users to view the complete dial ranges in the DEFINITY ProLogix Solutions system quickly and easily.
  - Browse Stations, which enables users to view all assigned stations in the DEFINITY ProLogix Solutions system quickly.
  - Browse Unused Ports, which enables users to view the available ports in the system.
  - Find Unused Extension, which enables users to view unused and available extensions.
  - Monitor Alarms
  - Monitor Trunks
  - Trunk Analyzer
  - Processor Occupancy Report, which enables users to poll for the processor occupancy and view the data in text or graphical format.

- Call Traffic Reports, which enable users to view call traffic data in text or graphical format.
- System Capacity Reports
- Audit reports on unused site data entries, unused and missing coverage paths, invalid coverage paths, and duplicated coverage paths.

Terminal Administration

DEFINITY ProLogix Solutions includes features that ease, simplify, and accelerate the administration process from a terminal.

Portless Administration/Administration Without Hardware

The Administration Without Hardware feature gives you the ability to administer station forms without specifying a port location. Administered stations will not cause alarms or errors to be generated when the station is translated but not yet installed. These station types are referred to as “phantom” stations. Phantom extensions can be used for Automatic Call Distribution Dialled-Number Identification Service. This feature allows a phantom extension to be administered on the switch for each call type that needs to be identified to agents. The phantom Automatic Call Distribution extension either is “call forwarded” (via an attendant console) to an Automatic Call Distribution split or has its coverage path defined to include the Automatic Call Distribution split. The name field administered for the phantom extension will identify to the Automatic Call Distribution agent the service that the caller is attempting to reach, allowing the agent to properly address the caller. (Automatic station relocation/terminal translation initialization, which is described in the next section, is part of the Portless Administration/Administration Without Hardware feature.)

The Administration Without Hardware feature also supports the ability to store station templates (models). These can later be used with the duplicate station command to implement many station forms of the same type in the switch.

The Administration Without Hardware feature can be used to streamline system initializations, major additions, and rearrangement/changes by allowing telephone translations to be entered before the actual ports are assigned.

The Administration Without Hardware feature can be used on the following terminal types:

- analog telephones
- Digital Communications Protocol telephones
- hybrid telephones

DEFINITY ProLogix Solutions' configurations support terminal types in addition to those listed above. These include:

- attendant consoles
- voice/computers (such as Digital Communications Protocol terminals with voice and data capabilities)
- data modules
- analog queue warning ports
- announcement circuit packs

Automatic Station Relocation/Terminal Translation Initialization

DEFINITY ProLogix Solutions provides terminal translation initialization, a feature that works with the Administration Without Hardware feature. (Terminal translation initialization is part of the Portless Administration/Administration Without Hardware feature, but it can also be a stand-alone feature.) Terminal translation initialization associates the terminal translation data with a specific port location through the entry of a special feature-access code, a terminal translation initialization security code, and an extension number from a terminal that is connected to a wired — but untranslated — jack.

After a terminal is connected to an appropriate jack, the terminal user can dial the appropriate codes followed by a pretranslated extension number of an Administration Without Hardware terminal. The system will complete the administration of the terminal by associating the translation data with the port location and performing appropriate checks.

Terminal translation initialization reduces the labor associated with system initializations, major additions, rearrangement and changes, and building wiring. Translation data entry can be performed without knowledge of the physical layout of circuit packs. End-users can move their own station equipment if a building is wired to support it, reducing costs for station moves. Individual lines need only be wired to the correct type of port, rather than to a specific port.

System administrators maintain control over the use of terminal translation initialization through security codes. By activating and deactivating security codes, administrators can control who uses terminal translation initialization — and when.

Scheduling

DEFINITY ProLogix Solutions' functional scheduling enables you to specify the time at which a command will be executed or to specify that it should be executed on a periodic basis. Only commands that do not require user interaction after being entered on the command line (such as list, display, test) can be scheduled.

DEFINITY ProLogix Solutions also supports scheduling of "one shot" requests — commands that are executed only once and then removed from the scheduling queue automatically by the feature, such as save translation commands.

Functional scheduling enhances administration. For example, scheduling of save translations is particularly important when large numbers of translation changes are made during the day, ensuring that they will be saved to tape at the specified time. The "one shot" report is particularly useful for scheduling large print jobs at night that are normally run only once.

Basic Reporting

DEFINITY ProLogix Solutions has built-in capabilities for generating reports. These reports are available without special hardware or software.

System Measurements reports supply information on the status of all communication facilities. These reports help determine the efficiency of resources, including but not limited to trunk groups, hunt groups, and the attendant group.

System Status reports supply information associated with the attendant group, major and minor alarms, and traffic measurements.

- The Recent Change History feature reports on the most recent administration and maintenance commands entered. DEFINITY ProLogix Solutions also supplies:
  - ~ new site data on the station form. New fields include the set color, building, floor, and headset. In addition, user-defined validation checks are provided for a subset of the site data items.
  - ~ scaling enhancements, as well as a ranging and filtering capability, for large switches. These enhancements enable your system administrator to restrict data reporting to only the specified number of switch parameters.

DEFINITY ProLogix Solutions also includes the following reports:

- The Class-of-Restriction report lists the extensions that have a particular Class of Restriction value or that fall within a range of Class of Restriction values.
- The Class-of-Service report lists the extensions that have a particular Class of Service value or that fall within a range of Class of Service values.
- The Site Data report lists, by extension, the site data associated with stations in the system. Ranging and filtering capabilities are provided for selected site fields.

Performance Measurements

A number of performance measurements are available on DEFINITY ProLogix Solutions. These measurements are available in the form of switch-based reports for local or remote access; they can be collected for subsequent analysis and reporting by adjuncts and operation support systems using the operation support system interface protocol. These reports include:

- Call Coverage reports
- Coverage Points

  These measurements can be used to engineer group sizes at coverage points and to detect station user abuse of the call-coverage feature.

- Processor Occupancy report

  These measurements are listed for the last hour, today's peak hour, and yesterday's peak hour.

The Traffic Summary report offers additional measurements that help configure the switch, determine the switch's capacity for growth, and report unauthorized switch-access attempts.

These measurements can be used to verify that your system and its users are not experiencing performance degradation due to overloaded switch resources.

- Attendant Position report
- Security Violations report
- Tandem Traffic report

The following measurements are useful in helping you evaluate the network engineering design for possible reconfiguration. They can help you decide how to reconfigure networks for lower-cost operation.

- Hunt Group Measurements
- Automatic Route Selection Pattern Measurements
- Trunk Group Detailed Measurements

The following measurements and reports are needed for engineering and load balancing a large switch. These measurements include:

- Blockage Study report
- Port Network and Link Usage

All of these measurements are accessible to an external host via the operation support system interface.

Call Charge Information

DEFINITY ProLogix Solutions provides two ways to know the approximate charge for outgoing calls:

- Advice of Charge — For ISDN trunks

  Advice of Charge collects charge information from the public network for each outgoing call. Charge advice is a number representing the cost of a call; it is recorded as either a charging or currency unit.

- Periodic Pulse Metering — For non-ISDN trunks

  Periodic Pulse Metering accumulates pulses transmitted from the public network at periodic intervals during an outgoing call. At the end of the call, the number of pulses collected is the basis for determining charges.

Call-charge information helps you to account for the cost of outgoing calls without waiting for the next bill from your network provider. This information is especially important in countries where telephone bills are not itemized. You can also use this information to let employees know the cost of their telephone calls, encouraging them to save money on toll calls.

Note: This is unavailable in some countries. Please check with your Account Executive or local distributor for availability in your country.

Call Detail Recording

Also included in the timely and efficient management of your communications system is the management and control of call costs. The Call Detail Recording capability enables you to monitor and analyze call patterns and usage in your system. DEFINITY ProLogix Solutions has enhanced the Call Detail Recording capabilities available to you.

Call Detail Recording Features

DEFINITY ProLogix Solutions enhances Call Detail Recording with the following capabilities:

- distinguish voice from data on trunk calls
- determine if a data call used a conversion resource, such as a modem pool
- choose whether to record the vector directory number in the “Dialed Number” field of the Call Detail Recording record, or record either the split or the agent extension in the same field
- allow Call Detail Recording records to be generated for internal calls (calls to and from a set of extensions, including data endpoints) so administered (a maximum of 500 extensions in large configurations)
- with Call Privacy, allow up to seven digits of the dialed number to be blanked from the Call Detail Recording record
- use a second Call Detail Recording port for sending Call Detail Recording data to a second source
- provide Call Detail Recording call splitting, which allows incoming and outgoing calls to be split into separate call records in order to track calls that transferred to other internal parties

DEFINITY ProLogix Solutions includes the Variable Format Records feature, which provides a flexible means of incorporating new fields in the call detail record as new switch features and new Call Detail Recording devices become available. The variable format allows you to define a record in terms of its content (from a set of available data elements), the position of its fields, and the spacing between the fields. This method can be used to construct the 15-, 18-, and 24-word standard formats and custom formats.

If calls come in while the Call Detail Recording link is down and the buffer is filled to maximum, DEFINITY ProLogix Solutions gives you the following administrable call-record handling options:

1. block the calls with reorder
2. allow the calls to overwrite records
3. route the calls to an attendant with the option to proceed as a non-Call Detail Recording call

As you can see, DEFINITY ProLogix Solutions call-record handling capabilities are designed to be flexible, adapting to meet your present and future business needs.

Call Detail Recording Devices

The following output devices are supported by DEFINITY ProLogix Solutions:

- local storage devices such as the Call Detail Recording Unit and any customer-provided storage device with an RS-232C interface
- processing devices — such as the Lucent Technologies Call Accounting System Plus, Cost Allocator, or host processors — that are supported over an RS-232C interface with XON/XOFF flow control
- asynchronous ASCII printers with RS-232C interface

The enhanced variable format records feature capability in DEFINITY ProLogix Solutions supports any customer-defined data presentation, and therefore can support any devices over an RS-232C interface.

Call Accounting Systems

Several options are available to you for call accounting, depending on the type of system administration tools you are using.

DEFINITY Network Telemanagement (DNT)

DEFINITY Network Telemanagement (DNT) is a state-of-the-art multiuser telemanagement system. See “Call Accounting Systems” in Chapter 3 for more information.

Call Accounting System for Windows (CFW)

The Call Accounting System for Windows (CFW) enables you to generate comprehensive and accurate accounting reports using the familiar Microsoft Windows environment, which can run several tasks at once. See “Call Accounting Systems” in Chapter 3 for more information.

Call Accounting System XP

The Call Accounting System XP has equivalent functionality as DEFINITY Network Telemanagement, but only offers call accounting. Call Accounting System XP is a LAN/WAN-based application that supports customers with multi-user requirements. See “Call Accounting Systems” in Chapter 3 for more information.

Call Accounting System Terminal

Lucent Technologies’ Call Accounting System Terminal is an easy-to-install hardware and software package that enables you to assign expenses to as many as three organizational levels. For example, you might assign costs at the department, cost center, or extension level.

The system makes it easy for you to generate a wide variety of accounting and system reports. For example, the Facility Grade of Service Report helps identify the number of trunk lines needed to respond efficiently to incoming calls. You can also generate toll fraud reports and alarms that identify excessive personal calls, unauthorized calls, and calls to expensive dial-up recordings.

INTUITY Call Accounting System

If you are using any of the INTUITY voice messaging products, the INTUITY Call Accounting System is probably the best call accounting solution for you. See “Call Accounting Systems” in Chapter 3 for more information.

Security

Besides the toll-fraud detection options available with the DEFINITY Call Accounting Systems (described in the previous section), DEFINITY ProLogix Solutions includes many other security features, some of which are an integral part of the system design.

Security Violation Notification

Security violation notification identifies potential hackers' attempts to access DEFINITY ProLogix Solutions. It notifies you when the number of invalid barrier-code attempts or invalid login attempts is greater than the administered threshold.

A monitor report displays the last 16 invalid barrier-code attempts and the last 16 invalid login attempts. This report is automatically updated every 30 seconds.

Call Restrictions

By dialing an access code, administrators, and attendants have the ability to restrict users from making or receiving certain types of calls. There are five restrictions:

- Outward — Users cannot place external calls.
- Station-to-station — Users cannot place or receive internal calls.
- Termination — Users cannot receive any calls (except priority calls).
- Toll — Users cannot place toll calls.
- Total — Users can neither place nor receive any calls.

10 Trunking and Networking Solutions

DEFINITY ProLogix Solutions provides not only powerful voice and data capabilities, but connections to a variety of voice and data networks as well. Lucent Technologies has long been a leader in networking. DEFINITY ProLogix Solutions continues to build on those established networking strengths to offer you network management features, network interfaces, a variety of private network configurations, and end-to-end ISDN capabilities. Lucent Technologies' leadership in developing and supporting open international networking standards is also apparent in DEFINITY ProLogix Solutions' compliance with the QSIG global standards.

Note: Some applications and products are unavailable in some countries. Please check with your local distributor for further information about which features and applications are available to you.

Uniform Dial Plan

Uniform Dial Plan provides a common 4- or 5-digit dial plan that can be shared among a group of switches. Interswitch and intraswitch dialing both require 4- or 5-digit dialing. UDP can be used with any DEFINITY ECS configuration and can provide uniform 4- or 5-digit dialing between two or more private-switching systems in ETN or main/satellite/tributary configurations.

With Uniform Dial Plan, a unique 4- or 5-digit number is assigned to each station on the network. This unique number (location code plus extension) can be used at any location in the Electronic Tandem Network to access that station. DEFINITY ProLogix Solutions enhances the standard uniform dial plan with the unrestricted 5-digit uniform dial plan, which allows up to five digits to be parsed for call routing.

Uniform Dial Plan is a standard feature of DEFINITY ProLogix Solutions.

Distributed Communication System

For a multilocation company that requires several systems, Distributed Communications System (DCS) may be the answer. DCS is a network arrangement of private switches, referred to as nodes. The maximum number of nodes that can be in a DCS varies from 2 to 63, depending on the particular configuration of switches. DCS nodes can be physically located in the same building, spread across a campus, or scattered across the country or around the world. Digital trunks interconnect the switches that serve the DCS complex. The links connecting a Distributed Communication System may also be provided across a Virtual Private Network (VPN).

The functions and features of Distributed Communication System are made possible by the use of an advanced interprocessor data link connecting each switch, allowing call-processing to be passed from one switch to another. The data link supplies transparency of selected features and efficient utilization of facilities that can be shared.

Feature transparency means that features work the same from the user’s perspective, whether the telephones involved are assigned to the same switch or different switches. Users in a DCS can dial each other with four or five digits as if they were all on the same switch.

Here are just a few examples of feature transparency in a Distributed Communication System:

- Leave Word Calling — Allows you to touch a button on your voice-terminal and leave a standard “call me” message with your name and phone number. When your DEFINITY ProLogix Solutions is linked with other switches in a DCS, you can call any employee in your company and press the Leave Word Calling button to automatically leave a message requesting a call back.
- Calling-Party Name Display — If your telephone is equipped with a digital display, information about the person calling you is displayed before you pick up the receiver. You can know who is calling if that person is in a nearby building or even across the country.
- Centralized Messaging — Messaging services for the entire Distributed Communication System network may be coordinated by one system, depending on volume and the version of the main and remote switches. This means that switches with smaller messaging requirements may share a voice messaging system with another switch.

Distributed Communication System nodes are connected by digital trunks (using DS1/E1 or ISDN-Primary Rate Interface facilities, for example). The signaling can be configured to use either TCP/IP or an ISDN-PRI D-channel.

DEFINITY ProLogix Solutions’ Distributed Communication System features DCS over ISDN-PRI with path replacement for optimizing trunks. Thus when you transfer out of your AUDIX voice messaging system, for example, DEFINITY ProLogix Solutions Release 3 sets up a new path that optimizes system resources.

To support DCS customers, DEFINITY ProLogix Solutions can transport DCS messages over ISDN-Primary Rate Interface D channels. As a result, you are not limited to private-line connections between your various locations. You can also use the Virtual Private Network (VPN) services.

The Virtual Private Network supports all DCS features except the following:

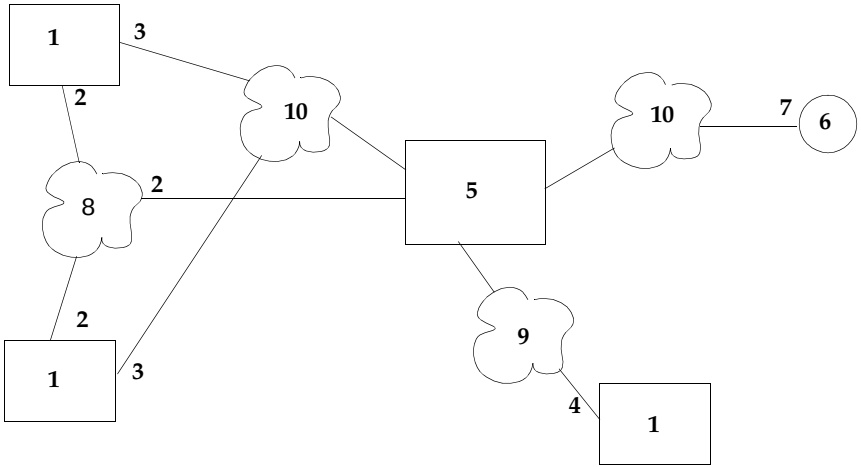
- DCS attendant control of trunk group access
- DCS attendant direct trunk group selection
- DCS busy verification of terminals

All other capabilities and limitations associated with the DCS still apply.

Messaging systems networked via DCS can also be supported over ISDN-Primary Rate Interface. (See Chapter 4 for more information.)

Adding DEFINITY ProLogix Solutions to Existing DCS Networks

If your company has an existing DCS network of multiple systems, DEFINITY ProLogix Solutions can be added to this network using either TCP/IP or ISDN-PRI D-channel signaling. If all the nodes in the DCS network use the same type of connectivity — either all TCP/IP or all ISDN-PRI — then the new sites can be added directly. If you wish to mix ISDN-PRI and TCP/IP connections in the network, then the new DEFINITY ProLogix Solutions must connect to the network via a gateway system, which provides conversion between TCP/IP and ISDN-PRI signaling. If there are nodes in the network using BX.25 signaling, the gateway system must be a DEFINITY ECS si or r model. If only ISDN-PRI and TCP/IP signaling is used in the network, a DEFINITY ProLogix Solutions could be used as the gateway. Figure 10-1 shows a DCS network with a system using all three types of signaling connected via gateways.



1) DEFINITY ProLogix Solutions or another DEFINITY ECS
2) Signaling via TCP/IP
3) Voice data
4) Signaling via ISDN-PRI
5) DEFINITY ECS gateway with DCS using TCP/IP, BX.25, and ISDN-PRI
6) Existing DCS BX.25 Network
7) Signaling via BX.25
8) LAN, WAN, Internet
9) In-house wiring, or Public (VPN) or Private Network (point to point)
10) In-house wiring or Private Network (point to point)

Figure 10-1. DCS Network with TCP/IP, ISDN-PRI, and BX.25 Signaling

QSIG Global Networking

DEFINITY ProLogix Solutions is a pioneer in providing compliance with the QSIG global networking protocol. This means you can connect DEFINITY ProLogix Solutions with other switches throughout the world. Lucent Technologies developed the QSIG Global Networking feature to comply with the QSIG standards developed by the European Computer Manufacturer's Association and the International Standardization Organization. It supports the ISDN-Primary Rate Interface connection from switch to switch as long as both switches support the same protocol.

Note: QSIG is an open standards-based protocol for interoperability among multivendor PBXs in an enterprise. DCS is a proprietary protocol.

The Lucent Technologies' implementation of QSIG features the Name Identification supplementary service and the Call Forwarding and Call Transfer features. QSIG enables the system to move calls from their original paths to new paths that cost less or use resources more efficiently. New paths can be set up as the call is established, while it is being forwarded, or while it is being transferred. DEFINITY ProLogix Solutions' implementation of QSIG also supports the ISO QSIG private network diversion supplementary service, as described in the QSIG standard.

The following QSIG features have been added for DEFINITY ProLogix Solutions Release 3.0:

- QSIG Call Completion
- QSIG Call Independent Signaling Connections (similar to Temporary Signaling Connections [TSCs])
- QSIG DCS Interworking - Called Number ID
- QSIG Message Waiting Indication (MWI)
- QSIG Value - Called Number ID
- Centralized Attendant Service Display
- Centralized Attendant Service Attendant Display of COR
- Centralized Attendant Service Attendant Return Call
- Centralized Attendant Service Priority Queue
- Centralized Attendant Service RLT Emulation via PRI
- DEFINITY/OMD QSIG Integration: QSIG Transfer to QSIG Voicemail

- VALU: Distinctive Alerting
- VALU: Call Coverage
- VALU: Call Coverage and Centralized Attendant Service

World Class Routing

DEFINITY ProLogix Solutions has been designed to be a world-class system that meets the needs of global customers. One capability essential in meeting those needs is the ability to flexibly dial any location in the world, regardless of the dial plan used at that location. In recognition of this requirement, DEFINITY ProLogix Solutions has been designed with World Class Routing.

World Class Routing is a powerful enhancement to DEFINITY ProLogix Solutions' call-routing capabilities, linking several call-routing features to build a communications network capable of providing flexible call routing for any type of dialing plan while accommodating changes in both international and North American dialing plans.

The following are key components of World Class Routing:

- Digit Conversion converts a dialed number for a public network number to a private network number and vice versa. Dialed numbers matching entries in the digit conversion tables are treated and converted. Converted calls can be routed via the optimal route, resulting in reduced network charges and appropriate use of the private network.
- Toll Analysis compares a dialed number to entries in the system's list. Based on the results, calls may be restricted from completion.
- Automatic Route Selection digit analysis compares a dialed public network number with entries in the system's tables, mapping the number to a selected private or public network routing pattern.
- Automatic Alternate Routing digit analysis compares a dialed private network number with entries in the system's tables, mapping the number to a selected private network routing pattern.

World Class Routing supports the Automatic Route Selection and Automatic Alternate Routing as separate features, but through generalized administration applicable to both features, provides both the same routing abilities. In addition, there are a number of capabilities that enhance the flexibility of routing in supporting your global calling requirements.

For example, 18-digit routing allows DEFINITY ProLogix Solutions to determine call routing by analyzing up to 18 digits with no restriction on the grouping or format of the digits, eliminating any assumptions about the use of a particular dialing plan.

International Direct Distance Dialed calls generally consist of an international access code, a country code, and a national number. These codes may vary in length. DEFINITY ProLogix Solutions' support for International Direct Distance Dialed calls eliminates any restriction on the grouping and format of digits on Automatic Route Selection numbers. Call routing is determined by the digits and the length of the dialed number.

Multinational World Class Automatic Alternate Routing allows the Automatic Alternate Routing number (Electronic Tandem Network number) to be any number of digits in length.

Digit conversion can be used to reroute numbers, initially dialed to use Automatic Route Selection, to be converted to use Automatic Alternate Routing and vice versa. This utility can analyze a maximum of 18 digits. In this way, destinations in a customer's network can be called using the public network number. This feature can also be used to reroute certain Direct Distance Dialed destinations to specified alternate destinations (such as intercept, attendant, or another Direct Distance Dialed number).

DEFINITY IP Solutions

DEFINITY IP Solutions brings together the flexibility of IP networks with the richness of voice communication, providing investment protection and optimization in IP, ATM, and PSTN networks. With DEFINITY IP Solutions, full applications, features, and management capabilities are carried into the IP environment. Remote workers have full access to communication system features from their PCs.

DEFINITY IP Solutions is implemented using the TN802/TN802B IP interface assembly, which is a Windows NT server that resides on the IP-interface circuit pack inside DEFINITY ProLogix Solutions. The TN802B IP interface operates in either the IP Trunk mode (for IP trunk connections) or in the MedPro mode (for H.323 trunk connections). The TN802 IP interface operates only in the IP Trunk mode. The MedPro mode requires the new TN799B C-LAN pack.

DEFINITY IP Solutions provides the ability to

- allow users to use LAN-based H.323 multimedia endpoints to make and receive calls
- allow users to access the DEFINITY ProLogix Solutions system as a “local” station user or as an “outside” trunk user from across a local area network or the Internet
- use the Internet as a pathway for audio calls between switches (that is, IP trunking)

Network Management Features

DEFINITY ProLogix Solutions has a variety of features that enable you to manage your network resources effectively. Here are just a few examples of the DEFINITY ProLogix Solutions’ features that can be used to manage your network: Time of Day Routing, Automatic Route Selection, Automatic Alternate Routing, Additional Network Feature Path Replacement, Subnetwork Trunking, Generalized Route Selection, Facility Restriction Level, Bearer Capacity Class, Remote Network Access, Public Network Call Priority, and Authorization Codes.

Time of Day Routing

Time of Day Routing allows you to select the most economical routing of Automatic Route Selection and Automatic Alternate Routing calls based on the time of day and week a call is made.

With Time of Day Routing, your company can take advantage of lower calling rates during specific times. If your company has locations in different time zones, you can maximize the use of your public or private network facilities by utilizing those in the location that has the lowest calling rates at the particular time a call is made. You can also use this feature to change the routing patterns when an office is closed and to eliminate unauthorized calls. You can set up eight separate time of day charts to control routing at different times of the day.

Automatic Route Selection

Automatic Route Selection routes public network calls on the most desirable (usually the most economical) trunking facilities available on your DEFINITY ProLogix Solutions when the call destinations are accessible through your public network.

DEFINITY ProLogix Solutions supports up to 254 routing patterns. Each routing pattern consists of up to 6 routing preferences (types of facilities) set up in the order you want them checked when a call is placed. Typically, the least expensive facility will be first on the list; the most expensive will be last.

If Generalized Route Selection is not being used when a call is made, the system selects a routing pattern based on the digits dialed. The routing preferences in that pattern are checked in the order they were listed, and the first available facility is used to place the call. If a facility is not available, the call can be queued until a facility becomes available.

Automatic Alternate Routing

Automatic Alternate Routing enables you to ensure that private network calls will be routed over the various trunking facilities available in your private network in the most effective manner possible. As with Automatic Route Selection, you set up various patterns for routing calls — in this case, with the private network. Depending on your DEFINITY ProLogix Solutions' configuration, you can have up to 254 routing patterns. Each pattern includes a primary preference — the most preferred and direct route — and 5 alternate preferences. If the primary preference in a pattern is unavailable, the system searches the alternate preferences in the specified order until it finds one available.

Generalized Route Selection

Generalized Route Selection gives you the capability to select not only the optimal call routing based on the dialed number, but also select the appropriate facility based on the type of call. Generalized Route Selection enhances Automatic Route Selection and Automatic Alternate Routing by incorporating additional parameters such as the type of call to be used in the decision of how a call is routed.

Different types of calls require the use of different types of facilities. For example, high-speed data calls must use digital facilities, whereas voice and voice-grade data calls can use either analog or digital facilities. DEFINITY ProLogix Solutions uses Generalized Route Selection to differentiate between these and other types of calls and route them on the appropriate trunks. Based on the call types and available trunk facilities, voice and data calls may be routed over different trunk types or integrated on the same trunk group. DEFINITY ProLogix Solutions also provides the capability to route calls based on the data format and the need for restricted or unrestricted facilities.

In order to select the appropriate trunking facility for a call, DEFINITY ProLogix Solutions must know the type of call being made. In order to do this, each originating facility such as a telephone or data module has a bearer-capability class assigned. Some originating facilities, such as data modules, may have multiple bearer- capability classes. Each trunk group in the routing pattern is assigned a list of allowed bearer-capability classes. When a user makes a call, the system queries the originating facility for its bearer-capability class and then tries to route the call on a trunk group with a bearer-capability class that matches the bearer-capability class of the originating facility. If an exact match is not found, the system then tries to find a trunk group with a compatible bearer-capability class.

Since the system automatically chooses the right trunk based on the system administration, DEFINITY ProLogix Solutions' dial plan can be independent of the type of call being dialed. This flexibility makes life easier for your system users, who do not have to worry about dialing a different access number for different call types.

Facility Restriction Level

Facility Restriction Levels are used to limit user calling privileges for incoming and outgoing calls. The Facility Restriction Level determines if a call attempt is permitted and which routes can be used or denied in the routing process. Eight levels of Facility Restriction Levels can be assigned to telephones, computers, and system management tools. DEFINITY ProLogix Solutions does not require the Facility Restriction Level to be in an ascending order when administered in the patterns or preferences through system management.

When a call is attempted, the system compares the Facility Restriction Level of the telephone with the Facility Restriction Level of the trunk routes available to complete the call. If the Facility Restriction Level of the telephone is equal to or higher than the Facility Restriction Level of trunks, the call is completed; if it is lower, the call is blocked on that preference and compared to the Facility Restriction Level of the next route available. If the call fails to match the Facility Restriction Level on the available preferences, the call may queue for the first available and compatible trunk group (equal to or higher).

DEFINITY ProLogix Solutions also provides a feature called Alternate Facility Restriction Levels that allows the attendant to change the Facility Restriction Levels on originating facilities temporarily to a different set of Facility Restriction Levels. It is used to grant users greater access to trunking facilities than is normally provided, such as when charges are lower during evening hours.

Authorization Codes

Authorization codes are used on particular calls to raise a telephone's Facility Restriction Level temporarily. This feature is useful for those who make calls from telephones other than their own or from outside the network. If a call you dial is blocked because the telephone's Facility Restriction Level is too low, you can enter your authorization code. If the Facility Restriction Level associated with the authorization code is equal to or higher than the Facility Restriction Level of the trunk facilities required to place the call, the call is then completed. Up to 5,000 different authorization codes will be in effect for your system at any one time. Using DEFINITY ProLogix Solutions' system management tools, you can assign authorization codes and change their associated Facility Restriction Level and network access permissions.

Network Interfaces and Equipment

DEFINITY ProLogix Solutions supports a variety of interfaces to voice and data networks. Trunks supply links between DEFINITY ProLogix Solutions, the public network, and other switches. DS1 interfaces offer high-speed digital connectivity between switches.

Trunk Group Circuits

Trunks provide the communications links between DEFINITY ProLogix Solutions and other switches, including central office switches and other premises switches. Trunks that perform the same function are grouped together and administered as trunk groups. Trunks interface with DEFINITY ProLogix Solutions via port circuit packs. DEFINITY ProLogix Solutions' trunk group circuit types include the following.

Local Exchange/PTT Trunks

Local exchange/PTT trunks connect DEFINITY ProLogix Solutions to a central office. The following are some of the types available:

- central office trunks, which connect DEFINITY ProLogix Solutions to the local central office for incoming and outgoing calls
- foreign exchange trunks, which connect DEFINITY ProLogix Solutions to a central office other than the local one
- Wide Area Telecommunications Service trunks, which allow you to place long-distance outgoing voice-grade calls to telephones in defined service areas, priced according to distance in the service area, length of the call, time of day, and the day of the week
- 800-service trunks, which let your business pay the charges for inbound long-distance calls so that callers can reach you toll-free
- Direct Inward Dialing trunks, which connect DEFINITY ProLogix Solutions to the local central office for incoming calls dialed directly to stations without attendant assistance
- Digital Service 1 trunks, which can be used to provide T1/E1 or ISDN Primary Rate Interface service

Tie Trunks

Tie trunks carry communications between DEFINITY ProLogix Solutions and other switches in a private network. Several types of trunks can be used, depending on the type of private network you establish.

Auxiliary Trunks

Auxiliary trunks connect devices with the switch. Some of the features that are supported with this type of trunk are recorded announcements, telephone dictation service, malicious call trace, and loudspeaker paging.

Centralized Automatic Message Accounting (CAMA) and Enhanced 911 Trunks

The Enhanced 911/Centralized Automatic Message Accounting (CAMA) trunk interface circuit pack enables DEFINITY ProLogix Solutions to interface with Centralized Automatic Message Accounting trunks to provide Caller's Emergency Service Identification (CESID) information to the local community's Enhanced 911 system through the local central office. With this feature, Enhanced 911 systems can see the extension number on the DEFINITY ProLogix Solutions system. This is required by some legislative and regulatory laws in certain states in the United States.

Incoming Call Identification (ICLID) on Analog Trunks

DEFINITY ProLogix Solutions supports incoming calling party information on analog trunks in the United States and Japan. In these countries, the user's terminal displays calling party information. Name and calling number are available from central offices in the United States; only the calling number is available from central offices in Japan. This feature may be used in countries that comply with Bellcore/Telcordia specifications. The display name and number will work with all DEFINITY digital voice terminals (Digital Communication Protocol and Basic Rate Interface) equipped with a 40-character or a 32-character alphanumeric display.

Miscellaneous Trunks

Miscellaneous trunks perform functions that do not fit neatly into any of those already described:

- release-link trunks are used between switch locations to provide Centralized Attendant Service.
- remote-access trunks provide off-premises users with access to DEFINITY ProLogix Solutions' features and networking.

Digital Interfaces

Lucent Technologies supports both T1 and E1 facilities. As industry standards around the world, T1 and E1 facilities provide the latest alternative to analog trunking.

E1 Interface

DEFINITY ProLogix Solutions also supports E1 connections. T1/E1 access and conversion allows simultaneous connection to both T1 (1.544 Mbps) and E1 (2.048 Mbps) facilities (using separate circuit packs).

T1 Interfaces

When planning your networking requirements, one of the options you should consider is multiplexing over Digital Services 1 (DS1) facilities. As the industry standard for interconnecting digital systems, DS1 is an economical alternative to analog trunking arrangements. Multiplexing up to 24 digitized voice/data communications paths onto a single T1 carrier or other high-speed digital facility (such as fibre or microwave) can reduce your network trunking and equipment costs.

Used to connect switches to the public network or to other switches in a private network, DS1 also delivers high-speed, end-to-end digital connectivity. Voice and data calls are completed at transmission speeds of up to 64 Kbps or NxDS0.

DEFINITY ProLogix Solutions offers several options in supporting the DS1 interface. The options include support for voice-grade DS1, alternate voice/data, and Digital Multiplexed Interface. The voice-grade DS1 interface is a T1 D4 channel-bank-compatible interface.

TCP/IP Interfaces

C-LAN

DEFINITY ProLogix Solutions supports the C-LAN port circuit pack, which provides TCP/IP connectivity over 10BaseT Ethernet to adjuncts such as CMS (Call Management System) and INTUITY AUDIX. C-LAN also provides either 10BaseT or PPP (point to point protocol) signaling for DCS.

Internet Protocol (IP) Trunk

DEFINITY ProLogix Solutions supports the Internet Protocol (IP) Trunk interface, which provides the capability to send voice and fax over the Internet between two DEFINITY systems that are equipped with the IP Trunk hardware and software. The IP Trunk hardware consists of a 3-slot MAPD circuit pack assembly (TN802B). A DEFINITY ProLogix Solutions with IP Trunk can also connect to a system — either DEFINITY or non-DEFINITY — that is equipped with the Internet Telephony Server (ITS).

ATM-CES Trunks

ATM-CES (Circuit-Emulation Service) trunks enable DEFINITY ProLogix Solutions to emulate an ISDN-PRI trunk on an ATM facility.

ATM Trunks

ATM trunks enable DEFINITY ProLogix Solutions to support telephony and wide-area network (WAN) connectivity over ATM networks.

Integrated Services Digital Network (ISDN)

DEFINITY ProLogix Solutions provides complete ISDN support for up to 500 stations (600 ports). Demonstrating its role as a leader in making ISDN a universal reality, Lucent Technologies makes it possible for anyone connected to DEFINITY ProLogix Solutions to benefit from ISDN capabilities and features.

ISDN eliminates the need for multiple, separate access arrangements for voice, data, facsimile, and video services and networks. Using the same pair of wires that now carry simple telephone calls, ISDN can deliver voice, data, and video services in digital format.

ISDN is a global access standard established by the Consultative Committee for International Telephone and Telegraph designed to help you move and manage information with unprecedented ease and productivity — anywhere in the world. ISDN uses a layered protocol that conforms to layers one, two, and three (physical, link, and network layers) of the 7-layer Open Systems Interconnect Reference Model of the International Standards Organization.

DEFINITY ProLogix Solutions supports the ISDN Primary Rate Interface, which is used for connecting premises equipment, such as switches, to the network and acts as a powerful interface between intelligent equipment, such as switches and computers. In the U.S., DEFINITY ProLogix Solutions supports line-side or trunk-side ISDN-BRI.

Integrated Services Digital Network - Basic Rate Interface (ISDN-BRI)

DEFINITY ProLogix Solutions can connect to equipment or endpoints that support an Integrated Services Digital Network (ISDN) by using the Basic Rate Interface (BRI). This feature is a 192-Kbps interface that carries two 64-Kbps B-channels and one 16-Kbps D-channel.

The ISDN-BRI Trunk circuit pack enables DEFINITY ProLogix Solutions to support the T interface and the S/T interface as defined by ISDN standards (ITU-T recommendation I.411). The circuit pack provides eight ports to the network and supports two B channels and one D channel. ISDN-BRI Trunk provides the following advantages:

- Provides an inexpensive way to connect to ISDN services provided by the network provider
- Meets almost all ETSI Country protocol requirements
- Supports essential (not supplementary) ISDN services

DEFINITY ProLogix Solutions Release 3.0 supports the NT (network) side of the T interface using the TN556C circuit pack. This gives DEFINITY ProLogix Solutions full tie trunk capability using BRI trunks. DEFINITY ProLogix Solutions Release 3.0 supports leased BRI connections through the public network, with a TN2185 on each end of the leased connection. However, DEFINITY ProLogix Solutions Release 3.0 does not allow you to administer both telephones and trunks on the same TN556C circuit pack.

Centralized Attendant Service

DEFINITY ProLogix Solutions owners who have more than one switch location can benefit greatly by using the Centralized Attendant Service feature. Centralized Attendant Service reduces the number of required attendants, and, in most cases, all those attendants can be located at one of the switch locations, called “main.” Switches at the other locations, called “branches,” redirect their calls to the Centralized Attendant Service main. Thus, a company can have a centralized attendant group at the headquarters office and can handle calls from there for the branch offices.

All locations in a Centralized Attendant Service arrangement have a listed directory number. Calls to a branch listed directory number terminate at the main location, even if the branch location has an attendant. These listed directory number calls are routed to the centralized attendant group over trunk circuits called release-link trunks. These release-link trunks are used only for centralized attendant calls and signaling.

After a call is processed by the centralized attendant, it is extended back to the branch location. The release-link trunk is then dropped and made available for other calls to the centralized attendant.

If a DEFINITY ProLogix Solutions is a node within a Distributed Communication System and Centralized Attendant Service is provided, a centralized attendant can do the following:

- control access to specific trunks at other nodes
- directly access specific trunks at another location
- place test calls to telephones and trunk groups at other nodes
- receive a visual warning that all trunks in a remote trunk group are busy or that the number of busy trunks in a remote group has reached a specified level

This feature ensures that all calls directed to an attendant at your company are handled efficiently.

Main/Satellite/Tributary

If you have modest network requirements, a main/satellite/tributary configuration is an attractive possibility for private networking. In this configuration, one DEFINITY ProLogix Solutions location is the main, and remote switches are satellites or tributaries. Attendant positions and public network facilities are usually concentrated at the main.

All calls to or from a satellite pass through the switch at the main. The system appears to be a single switch with one listed directory number. A uniform dial plan provides a common 4-digit or 5-digit dial plan for a main/satellite configuration.

A tributary is similar to a satellite, but it has one or more attendant positions and its own listed directory number. Calls to its listed directory number go directly to the tributary.

The switches in a main/satellite/tributary network are connected by tie trunks. Trunks and switching facilities can be added as requirements grow.

An important DEFINITY ProLogix Solutions' networking feature is Main/Satellite Extended Trunk Access. Extended Trunk Access allows dialed digits that are undefined at a satellite or tributary switch to be routed over a trunk group to a main switch for interpretation. This flexibility means changes to the network numbering plan do not have to be propagated to all switches. Extended Trunk Access improves your control and reduces administration costs by making trunk networks considerably easier to maintain.

Electronic Tandem Network

If your company requires a medium-to-large network spanning a large geographic area, nationwide or even worldwide, Electronic Tandem Network is the answer. An Electronic Tandem Network is a wide-area private network that tandems calls through one or more switches to route the calls to their destinations.

An Electronic Tandem Network consists of tandem switches, inter-tandem tie trunks that interconnect them, access or bypass trunks from tandem switches to main switches, and the software and equipment to support call routing over the trunking facilities. Different Electronic Tandem Network locations are connected via analog or digital tie trunks. For example, a DS1 interface can act as a high-speed (1.544 Mbps) digital backbone for voice and data communications between Electronic Tandem Network locations.

An Electronic Tandem Network can be configured hierarchically. An Electronic Tandem Network can connect individual switches; it can also connect other private networks (such as Main/Satellite/Tributary networks) together.

Within an Electronic Tandem Network, each location is identified by a unique private network location code, similar to the public network office codes that exist within an area code. When accessing the Electronic Tandem Network, generally a user dials a feature access code for the Automatic Alternate Routing feature plus the 7-digit number, for a total of eight digits.

Multimedia Communications

DEFINITY ProLogix Solutions multimedia communications combine regular telephone features with personal computers to enhance your conference calls and data sharing, making it possible to edit reports and exchange graphic files online. If your server is equipped with video capabilities, DEFINITY ProLogix Solutions multimedia communications can also add a personal touch to your conference calls by putting faces to the names of the people with whom you teleconference.

DEFINITY ProLogix Solutions provides two different multimedia options:

- Multimedia Applications Server Interface (MASI)

  The Multimedia Applications Server Interface provides a link between the DEFINITY ProLogix Solution and one or more Lucent Multimedia Communications Exchange (MMCX) servers. Multimedia Communications Exchange is an H.323-compliant, voice-communication, video-conferencing, and application-sharing product that works over Local Area Networks (LANs), Wide Area Networks (WANs), and telephone lines. Multimedia Applications Server Interface lets the Multimedia Communications Exchange server take advantage of advanced call-routing and management features of the DEFINITY ProLogix Solutions, including:

  ~ Call Detail Recording - DEFINITY ProLogix Solutions tracks calls to and from Multimedia Applications Server Interface terminals so that you can analyze call patterns and multimedia usage.

- ~ World Class Routing - Automatic Alternate Routing/Automatic Route Selection selects the most cost-effective routing for calls, based on available resources and carrier preference.
- ~ Voice Mail Integration - You can access your DEFINITY AUDIX or INTUITY AUDIX voice messaging system from Multimedia Communications Exchange.
- ~ Call Coverage - DEFINITY ProLogix Solutions tracks Multimedia Communications Exchange calls that are sent to coverage. A DEFINITY coverage path can contain both Multimedia Application Server Interface terminals and DEFINITY stations.
- ~ Multimedia Communications Exchange trunking - By assigning DEFINITY trunk access codes to interfaces from the Multimedia Communications Exchange to other Multimedia Communications Exchanges or the public-switched telephone network, DEFINITY ProLogix Solutions can monitor traffic over those interfaces.

- Multimedia Call Handling (MMCH)

  Multimedia Call Handling is an H.320-compliant product that lets the DEFINITY network handle voice, video, and T.120 data transmissions to voice terminals and personal computers. You can conduct video conferences and share personal computer applications with colleagues at remote sites while taking advantage of the powerful call-handling and routing features of DEFINITY ProLogix Solutions.

There are two modes of Multimedia Call Handling functionality:

- Basic mode, which supports basic voice-calling features, such as coverage and voice mail, as well as multi-party H.320 video conferencing and application sharing.
- Enhanced mode, which supports spontaneous video conferencing, call forwarding, call coverage, hold, transfer, and park, and many routing features.

A Features

This appendix provides a list of the features of the DEFINITY ProLogix Solutions arranged in the following categories:

- Automatic Routing Features
- Basic Features
- Call Center Features
- Hospitality Features
- Private Networking Features
- Trunk Group Features

This appendix lists all DEFINITY ProLogix Solutions' capabilities available anywhere. *Some of the listed features are optional.* Please check with your local Lucent Technologies' representative for further information about system features and what is available in your country.

The *DEFINITY ECS Release 8 Administrator's Guide* (555-233-502) describes each feature in detail and provides complete implementation and administration information. Some features are systems of their own and have their own documentation, such as Call Detail Recording, AUDIX voice messaging system, and Call Management System. See your local distributor for more information on each of these features.

Automatic Routing Features

The DEFINITY ProLogix Solutions provides a variety of automatic-routing features for public and private networks. Automatic Alternate Routing (AAR) and Automatic Route Selection (ARS) are the foundation for these automatic-routing features. They route calls based on the preferred (normally the least expensive) route available at the time the call is placed. Generally, AAR routes calls over a private network and ARS routes calls using the public network numbering plan. However, both AAR and ARS support public and private networks. You can use the other features listed in this section when you use AAR and ARS.

- Automatic Alternate Routing (AAR)
- Automatic Route Selection (ARS)
- AAR/ARS Overlap Sending
- AAR/ARS Partitioning
- Alternate Facility Restriction Levels
- Facility Restriction Levels and Traveling Class Marks
- Generalized Route Selection
- Subnet Trunking
- Time of Day Routing

Basic Features

The following features are supported with DEFINITY ProLogix Solutions:

- Abbreviated Dialing
- Abort Transfer
- Access Security Gateway (ASG)
- Administered Connections
- Administrable Language Displays
- Administration Without Hardware
- Alphanumeric Dialing
- Alternate Operations Support System Alarm Number
- Answer Detection
- Attendant Auto-Manual Splitting
- Attendant Backup Alerting
- Attendant Call Waiting
- Attendant Calling of Inward Restricted Stations
- Attendant Console

- Attendant Control of Trunk Group Access
- Attendant Crisis Alert
- Attendant Direct Extension Selection With Busy Lamp Field
- Attendant Direct Trunk Group Selection
- Attendant Display
- Attendant Intrusion (Call Offer)
- Attendant Override of Diversion Features
- Attendant Priority Queue
- Attendant Recall
- Attendant Release Loop Operation
- Attendant Serial Calling
- Attendant Split Swap
- Attendant Vectoring
- Audible Message Waiting
- Audio Information Exchange Interface
- Authorization Codes (13 Digit)
- Auto Start and Don’t Split

- Automatic Callback
- Automatic Call Timer
- Automatic Circuit Assurance
- Automatic Exclusion
- Automatic Incoming Call Display
- Automatic Route Selection/Automatic Alternate Routing Shortcut Dialing
- Automatic Transmission Measurement System
- Bellcore Calling Name ID
- Block Collect Call
- Bridged Call Appearance — Multi-Appearance Telephone
- Bridged Call Appearance — Single-Line Telephone
- Bulletin Board
- Busy Verification of Terminals and Trunks
- Call Charge Information
- Call Coverage
- Call Detail Recording
- Call Forwarding

- Call Park
- Call Pickup
- Call Waiting Termination
- Circular Station Hunting
- Class of Restriction
- Class of Service
- Code Calling Access
- Conference — Attendant
- Conference — Terminal
- Consult
- Controlled Toll Restriction
- Coverage Callback
- Coverage of Calls Redirected Off Net
- Coverage Incoming Call Identification
- Crisis Alert to a Digital Station
- Customer-Provided Equipment Alarm
- Data Call Setup

- Data Hot Line
- Data Privacy
- Data Restriction
- Default Dialing
- Demand Print
- Dial Access to Attendant
- Dial Plan
- Dialed Number Identification Service
- Distinctive Ringing
- Dual DCP I-Channels
- Easy Beyond Today
- Emergency Access to the Attendant
- Enhanced Abbreviated Dialing
- Enhanced Voice Terminal Display
- Extended User Administration of Redirected Calls
- External Device Alarming
- Facility Busy Indication

- Facility Test Calls
- Fiber Link Administration
- Go to Cover
- Group Call Pickup
- Group Listen
- Group Paging
- Hold
- Hold — Automatic
- Hunt Groups
- Individual Attendant Access
- Integrated Directory
- Integrated Services Digital Network — Basic Rate Interface (ISDN-BRI)
- ISDN Feature Plus — Non DID Calling via UDP
- Intercept Treatment
- Intercom — Automatic
- Intercom — Dial
- Internal Automatic Answer

- Last Number Redial
- Leave Word Calling
- Line Lockout
- Listed Directory Number
- Long Hold Recall - Warning
- Loudspeaker Paging Access
- Manual Message Waiting
- Manual Originating Line Service
- Manual Signaling
- Misoperation Handling
- Modem Pooling
- Multi-Appearance Preselection and Preference
- Multi-Country - Administrable Loss Plan
- Music-on-Hold Access
- Night Service
- Numeric Terminal Display
- PC/PBX Connection

- Personal Station Access
- Personalized Ringing
- Power Failure Transfer (Emergency Transfer)
- Priority Calling
- Privacy — Attendant Lockout
- Privacy — Manual Exclusion
- Public Network Call Priority
- Pull Transfer
- Recall Signaling
- Recorded Announcements
- Recent Change History
- Recorded Announcement
- Recorded Telephone Dictation Access
- Remote Access
- Reset Shift Call
- Restriction — Controlled
- Ringback Queuing

- Ringer Cutoff
- Ringing — Abbreviated and Delayed
- Security Violation Notification
- Send All Calls
- Station Hunting
- Station Security Codes
- Station Self Display
- Station User Administration
- Telephone Self Administration
- Temporary Bridged Appearance
- Tenant Partitioning
- Terminal Translation Initialization
- Terminating Extension Group
- Timed Reminder and Attendant Timers
- Transfer
- Transfer Call Back
- Transfer — Outgoing Trunk to Outgoing Trunk

- Translation Copy Protection
- Trunk Flash
- Trunk Group Busy/Warning Indicators to Attendant
- Trunk Identification By Attendant
- Trunk-to-Trunk Transfer
- Visually Impaired Attendant Service
- Voice Message Retrieval
- Voice Terminal Alerting Options
- Voice Terminal Display
- Whisper Page
- World Class Tone Detection
- World Class Tone Generation
- X-Station Mobility - DECT and Message Waiting Indication

Call Center Features

DEFINITY ProLogix Solutions offers the following features designed to help you set up and maintain a modern Call Center:

- Abandoned Call Search
- Add/Remove Skills
- Agent Call Handling
- Auto-Available Split
- Automatic Call Distribution
- Basic Call Management System
- Best Services Routing (Queue to Best)
- Call Prompting
- Call Vectoring
- Calling Party/Billing Number
- CentreVu Advocate
- CentreVu Virtual Routing
- CMS Measurement of ATM Trunk
- Direct Agent Announcement

- Expert Agent Selection
- Flexible Billing
- Inbound Call Management
- Intraflow and Interflow
- Enhanced Look-Ahead Interflow
- Malicious Call Trace
- Multimedia Call Handling
- Multiple Call Handling
- Queue Status Indications
- Reason Codes
- Redirection on No Answer
- Service Observing
- Site Stats for Connected Remote EPNs
- Universal Call ID
- VDN in a Coverage Path
- VDN of Origin Announcement
- Voice Response Integration
- VuStats

Hospitality Features

The following features are designed for use in the hospitality industry. Other features listed elsewhere may be of use in this industry, however. The Attendant Crisis Alert feature, for example, described in the Basic Features section of this appendix, is primarily used in lodging establishments. That feature is listed as a basic feature because it is available on any system that has the appropriate attendant console.

- Attendant Room Status
- Auto Digit Rotation for Direct Inward Dial (DID)
- Automatic Wakeup
- Crisis Alert to a Digital Pager
- Do Not Disturb
- Group Wakeup
- Hospitality Services
- Names Registration
- Permanent Time Interval Wakeup
- Property Management System Interface
- Single-Digit Dialing and Mixed Station Numbering
- Suite Check-In via the Hunt-To Feature
- VIP Wakeup

Private Networking Features

The great expandability of DEFINITY ProLogix Solutions makes it a logical choice for setting up private networks. Consequently, the system includes many private networking features:

- C-LAN Serviceability Tools
  - ~ Packet Error History
  - ~ Trace Route
  - ~ Variable Size Ping Packet
- Centralized Attendant Service
- Centralized Voice Mail via Interswitch Mode Code
- Distributed Communications System (DCS)
- DCS Alphanumeric Display for Terminals
- DCS Attendant Control of Trunk Group Access
- DCS Attendant Display
- DCS Automatic Callback
- DCS Automatic Circuit Assurance
- DCS Busy Verification of Terminals and Trunks
- DCS Call Coverage

- DCS Call Forwarding
- DCS Call Waiting
- DCS Distinctive Ringing
- DCS Leave Word Calling
- DCS Multiappearance Conference/ Transfer
- DCS Over ISDN-PRI D-channel
- DCS Trunk Group Busy/Warning Indication
- DCS With Reroute
- DEFINITY/OMD QSIG Integration: QSIG Transfer to QSIG Voicemail
- DEFINITY IP Solutions
- Enhanced DCS
- Extended Trunk Access
- Extension Number Portability
- Inter-PBX Attendant Calls
- Interworking with Bandwidth Constricted ATM Networks
- Node Number Routing
- Private Network Access

- QSIG
- QSIG Call Completion
- QSIG Call Forwarding (Diversion)
- QSIG Call Independent Signaling Connections
- QSIG Call Transfer
- QSIG DCS Interworking - Called Number ID
- QSIG Message Waiting Indication (MWI)
- QSIG Name and Number Identification
- QSIG Path Replacement
- QSIG Value - Called Number ID
- QSIG Centralized Attendant Service Display
- QSIG Centralized Attendant Service Attendant Display of COR
- QSIG Centralized Attendant Service Attendant Return Call
- QSIG Centralized Attendant Service Priority Queue
- QSIG Centralized Attendant Service RLT Emulation via PRI
- QSIG Temporary Signaling Connections
- Transit Counter

- VALU: Distinctive Alerting
- VALU: Call Coverage
- VALU: Call Coverage and Centralized Attendant Service
- Uniform Dial Plan
- User to User Information over Public Network

Trunk Group Features

DEFINITY ProLogix Solutions offers an array of features for managing trunk groups efficiently:

- ATM-CES Trunks
- ATM Trunks
- Australia — CIN Board Support
- Brazil — R2 MFC Backwards Signal
- Brazi — Continuous E&M Signaling
- Brazil — Pulsed E&M Signaling
- Call-by-Call Service Selection
- Caller ID on Analog Trunks
- CAMA - E911 Trunks

- China — Special Dial Tone
- China — Outgoing Call No Answer
- China — Time Supervision and Force Release
- DS1 Trunk Service (T1 and E1)
- Digital Multiplexed Interface
- Facility and Non-Facility Associated Signaling
- IP Trunks
- ISDN — BRI and PRI
- Italy — Multiple Pubnet Calling/Connect Numbers/System
- Italy — Pass AOC to BRI Endpoints
- Japan — 2MB Digital Trunk
- Japan National Private Networking
- Russia — Incoming ANI
- Wideband Switching

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Numerals

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DEFINITY® ProLogix™ Solutions Release 3.0 Over-

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	Excellent	Good	Fair	Poor
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Completeness	❑	❑	❑	❑
Accuracy	❑	❑	❑	❑
Organization	❑	❑	❑	❑
Appearance	❑	❑	❑	❑
Examples	❑	❑	❑	❑
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