Lucent Technologies
Bell Labs Innovations

INTUITY™ CONVERSANT® System

Version 6.0
System Description

585-310-241
Comcode 108005471
Issue 2.0
June 1997

Notice
Every effort was made to ensure that the information in this book was complete and accurate at the time of printing. However, information is subject to change.

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

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

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

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

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

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

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Lucent Technologies Business Communications Systems declares that the equipment specified in this document conforms to the referenced European Union (EU) Directives and Harmonized Standards listed below:

EMC Directive	89/336/EEC
Low-Voltage Directive	73/23/EEC

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

Comments
To comment on this document, return the comment card at the back of the document.

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

Contents

About This Book

Purpose

The Lucent Technologies *INTUITY™ CONVERSANT® System Version 6.0 System Description*, 585-310-241, answers basic questions about the INTUITY CONVERSANT System Version 6.0 (V6.0 Update 1) and its usage. It provides an overview of the service it provides, as well as a technical description of the current system hardware, software, features, and feature packages, including requirements and specifications, performance information. Appendix A is a V6.0 documentation guide. If you need more detailed system information, you are referred to other documents in the V6.0 system set.

Intended Audiences

There are many audiences, both internal and external to Lucent Technologies that use this document. Anyone associated with the marketing, sales, sales support, technical support, development, or purchase of a system who requires basic information about the functionality or content of the platform is a member of the target audience.

The primary audiences for this document include sales and sales-support organizations, administrators, product design organizations, and account executives. These primary audiences are most interested in answering questions such as “What is it?”, “What does it do?”, and “How does it work?” with respect to the product and its features.

Secondary audiences for the document include the Technical Service Center (TSC), training, and development. These secondary audiences are most interested in answering questions such as “How would the system best be supported?” and “How would the system best be serviced?”

Release History

This book is being updated to reflect the following hardware and software changes for Version 6.0 Update 1.

- MAP/5P hardware platform
- Software upgrade assistance package
- PCI local area network (LAN) circuit card
- Screen interface for administering peripherals

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How To Use This Book

This book is designed to provide you with a detailed description of all aspects of the INTUITY CONVERSANT system.

For an Overview

Read Chapter 1, ‘‘Introduction’’ for a brief overview of the V6.0 system, including its functionality, hardware platforms, software, features, and optional feature packages.

For Information on Hardware

Read Chapter 2, ‘‘Hardware’’ for a description of the major hardware components of the system, including standard hardware by platform, optional circuit cards, voice processing circuit cards, asynchronous and synchronous communication circuit cards, and peripheral equipment.

For Information on Software

Read Chapter 3, ‘‘Software’’ for a description of the UnixWare operating system, base system software, and optional software packages.

For Information on Features and Feature Packages

Read Chapter 4, ''Features'' and Chapter 5, ''Feature Packages'' for a description of the base functionality of the system and the optional feature packages available with the system.

To Locate Specific Topics

This book includes an alphabetical index at the end for quick access to specific topics.

Conventions Used in This Book

This section describes the conventions used in this book.

Typography

Commands and text you type in or enter appear in **bold type**, as in the following examples:

Example 1:

Enter **change-switch-time-zone** at the `enter command:` prompt.

Example 2:

Type **high** or **low** in the `Speed:` field.

Safety and Security Alert Labels

This book uses the following symbols to call your attention to potential problems that could cause personal injury, damage to equipment, loss of data, or service interruptions:

CAUTION:
Indicates the presence of a hazard that if not avoided can or will cause minor personal injury or property damage, including loss of data.

WARNING:
Indicates the presence of a hazard that if not avoided can cause death or severe personal injury.

DANGER:
Indicates the presence of a hazard that if not avoided will cause death or severe personal injury.

Related Resources

This section describes additional documentation and training available for you to learn more about the INTUITY CONVERSANT product.

Documentation

This document is designed to supplement all other documents in the V6.0 system set. Always refer to the appropriate document for specific information on planning, installing, operating, administering, or maintaining the system. A brief description of each document in the set is included in Appendix A.

Additional Suggested Documentation

It is suggested that you also obtain and use the following book for information on security and toll fraud issues:

- *BCS Products Security Handbook*, 555-025-600

See the inside front cover for information on how to order INTUITY CONVERSANT documentation.

Electronic Updates to This Book

The ACCESS Electronic News online bulletin board is available to provide you with additional information about the INTUITY CONVERSANT product, including updates and supplements to the information in this book. This free service is available 24 hours a day, 7 days a week. To register and receive a special offer on ACCESS Plus software, call 1 800 242-6005 and ask for Department 186.

Training

The following training classes are recommended as prerequisites to installing a V6.0 INTUITY CONVERSANT system or upgrading to a V6.0 system:

- Course No. BTT509H/BO3620A, INTUITY CONVERSANT Installation and Maintenance (for audiences within the US)
- Course No. BTE509H/GC3603A, INTUITY CONVERSANT Installation and Maintenance (for audiences outside the US)

The following training classes are recommended prior to developing an application on a V6.0 INTUITY CONVERSANT system:

- Course No. BTC1268H/BC3612A, Introduction to Script Builder (for audiences within the US)
- Course No. BTK128H/GC3604A, Introduction to Script Builder (for audiences outside the US)

- Course No. BTC301H/BC3625A, Advanced INTUITY CONVERSANT Programming (for audiences within the US)
- Course No. BTK002H/GC3112A, Advanced INTUITY CONVERSANT Programming (for audiences outside the US)
- Course No. BTC201H/MC1982A, INTUITY CONVERSANT Graphical Designer for New Application Design Customers (for audiences within the US)
- Course No. BTC302H/MC1537A, INTUITY CONVERSANT Graphical Designer for Experienced Script Builder Users (for audiences within the US)
- Course No. BTK130H/GC3614A, INTUITY CONVERSANT Graphical Designer-V6.0 (for audiences outside the US)

For more information and availability of INTUITY CONVERSANT training courses, call one of the following numbers:

- For customer training - US: 1 800 255-8988
- For sales and services training - US: 1 904 636-3261
- For customer or sales training outside the US: Call your local Lucent Technologies Center of Excellence (COE)

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Denver, Colorado 80234-2703 US

You may also fax you comments to the attention of the Lucent Technologies INTUITY CONVERSANT writing team at 1 303 538-1741.

Please mention the name and order number of this book, *INTUITY™ CONVERSANT® System Version 6.0 System Description*, 585-310-241.

Disclaimer

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Lucent Technologies—formed as a result of AT&T's planned restructuring—designs, builds, and delivers a wide range of public and private networks, communications systems and software, consumer and business telephone systems, and microelectronic components. The world-renowned Bell Laboratories is the research and development arm for the company.

Introduction

1

Overview

This chapter provides a high-level overview of the system, including:

- Voice response basics
- Description of the system, including hardware, software, features, and feature packages

Purpose

The purpose of this chapter is to

- Familiarize you with basic types of voice response transactions.
- Give you an overview of how the system can automate caller transactions.
- Briefly describe how the terms *hardware*, *software*, *features*, and *feature packages* are used in this book.

Voice Response Basics

This section discusses voice response basics first by explaining what a system does and then by demonstrating how an automated transaction can replace a nonautomated transaction.

What the INTUITY™ CONVERSANT® System Does

The INTUITY CONVERSANT system is an interactive voice response system for automatic telephone transactions. Using synthesized or prerecorded speech, the system can:

- Respond to (answer) an incoming call
- Request specific information from the caller
- Provide information or services to the caller based on data from the caller

The system allows either full or partial automation of telephone transactions that would otherwise be performed by an operator/attendant. These automated transactions are known as *applications*. Each application is designed and developed to meet a specific customer's need. An application *script* is a set of instructions written for the system that informs it how to carry out the automated transaction. Scripts define the flows of calls and determine what callers hear and how callers respond to the system.

When an incoming call is connected to the system, the system prompts the caller with synthesized or prerecorded speech. The caller responds by entering touch-tones or by speaking into the telephone. The dialog between the system and the caller is determined by the particular application and its corresponding script.

The application script can be simple or complex, depending on the purpose of the call. For example, a simple script may accept a caller's request for information, perform a quick search of a local database, and then respond to the caller with that information. A more complex script may accept a caller's request for information, prompt the caller to provide additional touch-tone or spoken format information, and then access a remote host computer database to retrieve information related to the caller. The script then forwards the call to an operator/attendant who uses the information previously acquired to respond and interact with the caller.

A Sample Transaction

This section describes a simple, nonautomated transaction between an operator and caller and then describes how the system can automate that same transaction.

Nonautomated Transaction

A bank has several operators whose duties include providing callers with certain information, such as account balances and current interest rates for different types of accounts. The operators also answer a variety of questions. Some of the information, such as interest rates, is located on a sheet of paper in front of the operator. Other information, such as account balances, must be obtained from the bank's computer.

When necessary, these operators can also transfer callers to specialized customer service representatives for further information. The following represents a typical conversation, or transaction, between a caller and an operator at a bank:

Operator:	"Thank you for calling River Bank. How may I help you?"
Caller:	"What is the current interest rate on your automobile loans?"
Operator:	(referring to a chart of interest rates)
	"The interest rate for our auto loans is 7.9%. May I help you with anything else?"
Caller:	"Yes. I'd like to check my savings account balance."
Operator:	"What is your account number?"
Caller:	"My account number is 0653202782."
Operator:	"To verify that this is your account, what are the last four digits of your social security number?"
Caller:	"9087"
Operator:	"One moment, please."
	(Accesses account balance using a computer terminal)
	"Your savings account balance is $2,010.27. May I help you with anything else?"
Caller:	"Yes. I'd like to speak to someone about an auto loan."
Operator:	"I'll transfer you to one of our loan office representatives. One moment, please." (Transfers caller to loan officer, who must then access the computer to gain the customer's credit history)

Types of Interactions Between Caller and Operator

You can better understand how calls are automated if you break down the nonautomated call sequences into its more basic steps.

In the nonautomated sample call above, you can see the following types of interactions between the caller and the operator:

1. The operator greets the caller.
2. The operator prompts the caller and receives a request for information. In the sample call, this includes interest rate and account balance information.
3. The operator takes the following actions at the caller's request:
   - If necessary, the operator prompts the caller for further information (type of rate, type of account, ID number, etc).
   - The operator looks up the information.
   - The operator reports the information.
4. The operator repeats Steps 2 and 3 above.
5. The caller requests information that can only be provided by someone other than the operator.
6. The operator transfers the caller.

Virtually all transactions consist of the basic steps listed above. The caller's "request for information" shown in Step 2 above may be as simple as the need to hear a checking account balance or the latest stock market value. More complex requests might include placing a sales order or requesting information on a particular product via a fax.

In the sample banking transaction, when the caller asks for an interest rate, the operator simply looks at a chart and reads the information to the caller. However, when the caller wants to know account balance information, the operator must ask for additional information (the caller's account number and social security number), then use a computer terminal to enter the caller information and read the balance displayed on the screen.

Finally, when the caller requests information on automobile loans, the operator must transfer the call to a loan officer who has the means to further investigate and service the inquiry.

Automated Transaction Using the System

Think in terms of the application script replacing the operator when you automate a transaction using the system. The transaction steps remain the same, but the caller interacts with the system instead of an operator. The system follows the same basic steps as the nonautomated transaction. It uses the application script for instructions about the setting, what to say during a transaction, and possible options that the caller may wish to investigate.

Types of Interactions Between Caller and System

In an automated call, you can see the following types of interactions between the caller and the system:

1. The system greets the caller.
2. The system prompts the caller and receives a request for information. In the sample call, this includes interest rate and account balance information.
3. The system takes the following action on the caller request:
   - If necessary, the system prompts the caller for further information (type of rate, type of account, ID number, etc.). In this sample call, the caller is asked to enter the last four digits of their social security number.
   - The system looks up the information from the bank database.
   - The system reports the information to the caller.
4. The system repeats Steps 2 and 3 above.
5. The caller requests information that can only be provided by a nonautomated operation.
6. The system transfers the caller to a loan office representative.

Description of the System

This section provides a brief overview of the hardware, software, features, and feature packages of the system.

Hardware

System software operates on a hardware system called a Multi-Application Platform (MAP). Three different hardware platforms are available as the physical basis of the system. These platforms have different capacities and can present system resources in various configurations. This allows each system to be tailored to match each customer's projected call volumes and office arrangement.

This section provides a brief overview of each platform:

- MAP/100C — The MAP/100C is a central office rack-mounted hardware platform that accommodates customers who require a system meeting central office telecommunications standards.
- MAP/100 —The MAP/100 is a freestanding or rack-mountable hardware platform that accommodates business customers with moderate to large amounts of system activity.

- MAP/40 — The MAP/40 is a PC-sized unit, mounted in a deskside, tower configuration, that accommodates customers with small or moderate amounts of system activity.
- MAP/5P — The MAP/5P is a PC-sized unit, mounted in a deskside mini-tower configuration, that accommodates customers with small amounts of system activity.

Certain applications require multiple systems to provide transaction automation for more than the maximum simultaneous calls that a single platform can serve. In these cases, multiple platforms may be necessary to support increased capacity requirements.

For more detailed information on each platform, as well as supported hardware components, see Chapter 2, ‘‘Hardware’’.

Software

At its most basic level, the system is a computer consisting of controlling and speech processing hardware, plus a UnixWare operating system and system application software.

Prerecorded speech files are usually present on the system disk(s). These speech files are used to construct prompting phrases that the system uses to instruct the caller during the automated transaction. The amount of custom application software and speech present on a particular system is based on your specific needs.

For more information on standard UnixWare operating system software, base software, and optional software, see Chapter 3, ‘‘Software’’.

Features

A *feature* can be either software and/or hardware in nature. It is standard with each system purchase. Some features require nothing additional to be completely functional. However, some features may require the addition of a *feature package* to be more complete or more advanced.

See Chapter 4, ‘‘Features’’ for more detailed information on supported features.

Feature Packages

Feature packages can be hardware and/or software in nature and provide specific functions that enhance the operation or capacities of the base system. If you require additional capabilities, you must purchase the feature package. They are not standard with each system purchase. These optional packages provide enhancements such as data network interfaces or additional basic hardware resources.

See Chapter 5, "Feature Packages" for more detailed information on each supported feature package.

Hardware

2

Overview

This chapter describes V6.0 system hardware, including descriptions, platform capacities, supported and orderable devices for the following:

- Standard system hardware by platform
- Optional system hardware, including circuit cards and peripheral equipment
- Optional hardware upgrade kits
- Hardware upgrade components, including pre-V6.0 system components that can be reused without modification and components that must be removed, replaced, or modified in order to upgrade to a V6.0 system

In addition, this chapter also discusses resource assignments for the described hardware components and provides circuit card maximums by platform.

NOTE:
The modular design of the V6.0 system permits the components described in this chapter to be configured in different ways to satisfy the requirements of many different applications. Not all of the hardware described in this chapter can or will be used simultaneously in a single platform.

The base and optional software running on the platform controls the operation of the equipment. The software associated with some of the hardware components is listed and described in Chapter 3, “Software.” The features and feature packages associated with some hardware components shown are described in detail in Chapter 4, “Features,” and Chapter 5, “Feature Packages.”

Purpose

The purpose of this chapter is to

- Make distinctions between standard and optional system hardware.
- Clarify which system hardware is included in new sales and which is supported for upgrades.
- Explain the uses of all hardware components.
- Present differences between the hardware components of each of the platforms.
- Present available hardware upgrade kits.

Standard System Hardware by Platform

Regardless of the type of application and/or features being supported, all platforms require a minimum set of hardware components to function properly.

The V6.0 system can operate on four different multi-application platforms:

- MAP/100C
- MAP/100
- MAP/40
- MAP/5P

This section describes these platforms and their standard system hardware components.

MAP/100C Standard System Hardware

The MAP/100C is a central office rack-mounted unit used primarily to provide services that enhance the functionality of large central office telecommunication switches and services operated by local and long-distance telephone companies. The MAP/100C can be mounted in either a 24-inch 4ESS® or 5ESS® equipment rack. It cannot be mounted in a MAP/100 rack.

Standard hardware components for the MAP/100C include the following:

- Backplane
- Standard circuit cards
- Standard bus cables
- Peripheral devices
- Power supply

Backplane

Each platform contains a backplane that provides circuit card mounting positions called *slots*. The MAP/100C backplane resides inside the front chassis.

Two backplane configurations are supported in the MAP/100C for V6.0:

- ISA/PCI MAP/100C backplane (installed in all new V6.0 sales)

  This backplane has a total of 20 ISA slots, 1 dedicated CPU slot, and 3 PCI slots. It replaces the older ISA MAP/100C backplane without PCI slots, described below.

  Of the 20 ISA slots, one ISA slot is dedicated to the video circuit card and one ISA slot is usually occupied by a remote maintenance circuit card. The 18 remaining ISA slots are available for voice response/processing cards as well as cards to support local area networks, etc. The three remaining PCI slots are available for future PCI peripheral support.

- ISA MAP/100C (supported for upgrades to V6.0)

  This backplane has a total of 25 ISA slots. It does not have any PCI slots. Four of the 25 ISA slots are used for standard circuit cards that provide basic platform functions. The 21 remaining ISA slots are available for voice response/processing cards as well as cards to support local area networks, etc.

This platform is equipped with a disk bay with space for up to three full-height peripherals or six half-height peripherals, or some combination thereof (for example, two full-height and two half-height). In the standard configuration, one half-height slot is occupied by the cartridge tape drive and one half-height slot is occupied by a hard disk drive.

Standard Circuit Cards

Standard circuit cards are used to control the processes of the platform. These circuit cards provide the central processing, video, and peripheral functions, and certain basic communication functions of the system.

In the MAP/100C, all circuit cards are mounted vertically with any interface cables exiting from the top of the platform. A hinged door on the front of the platform provides access to the backplane.

For more information about software associated with the following circuit cards, see Chapter 4, ‘‘Features’’ and Chapter 5, ‘‘Feature Packages’’.

The following circuit cards are standard hardware components in the MAP/100C:

- Central processing unit circuit card
- External SCSI connector circuit card
- SCSI host adapter
- Video controller circuit card
- Remote maintenance circuit card

Central Processing Unit Circuit Card

Two central processing unit (CPU) circuit cards are supported by the MAP/100C for V6.0:

- P5 processor operating at 120-MHz with a minimum of 32 Mbytes of RAM and a maximum of 128 Mbytes of RAM (installed in all new V6.0 systems)
- 486DX processor operating at 50-MHz with a minimum of 32 Mbytes of RAM and a maximum of 64 Mbytes of RAM (supported for *upgrades only*)

External SCSI Connector Circuit Card

The external SCSI connector circuit card provides an external SCSI connector and an active termination for the SCSI bus.

NOTE:
This component is only present in systems containing a P5 120-MHz CPU.

SCSI Host Adapter

The SCSI host adapter provides an interface between the system processor and SCSI peripheral devices.

NOTE:
The SCSI host adapter is required for all 486DX MAP/100C platforms (upgrades to V6.0 only). It is not required for P5 120-MHz CPU platforms since its functions are performed on the CPU circuit card.

Video Controller Circuit Card

The video controller circuit card provides the interface between the system processor and the video monitor, as follows:

- STB Horizon (installed in all new sales of V6.0)
- Model WDXLR831124 (supported for upgrades to V6.0)
- Model WDXLR83160 (supported for upgrades to V6.0)
- Model WDXLR833124 (supported for upgrades to V6.0)

Remote Maintenance Circuit Card

The remote maintenance circuit card provides a method of remote monitoring and access for off-site technicians. This circuit card is available with a built-in modem.

NOTE:
The remote maintenance circuit card with a built-in modem is required only in the US. A remote maintenance circuit card with an external modem is being developed for global sales.

Standard Bus Cables

There are two types of standard bus cable for the system:

- SCSI bus cable
- TDM bus cable

SCSI Bus Cable

The SCSI bus cable serves as the interface from one SCSI component to another. For example, it provides an interface from the hard disk drive to the cartridge tape drive.

TDM Bus Cable

The TDM bus cable is used by the voice processing cards (Tip/Ring, T1, E1, SSP, and SP/CMP) when they send digitized speech to other cards in the system. For example, it is used to connect SP or SSP resources to telephone network connections for speech playback, voice coding, speech recognition, or for bridging one telephone connection to another.

A TDM bus cable is supplied with each V6.0 system purchased.

Peripheral Devices

V6.0 system platforms support storage devices including hard disk, diskette, and cartridge tape drives. The MAP/100C is supplied with data storage/transfer devices in the Small Computer System Interface (SCSI) format.

For more information on the capabilities and use of SCSI peripherals, see "Guidelines for the Addition of SCSI Devices" later in this chapter and Chapter 4, "Features"

The MAP/100C platform supports the following peripheral devices:

- Hard disk drive
- Diskette drive
- Cartridge tape drive

Hard Disk Drive

A hard disk drive is a peripheral device used to provide storage and random access to large amounts of data for the system. This data can include the operating system, application software, speech data, and database tables.

All new MAP/100C platforms are equipped with at least one 2-Gbyte IBM SCSI hard disk drive. The MAP/100C can support up to five SCSI hard disk drives. This disk is a half-height peripheral and is mounted in the peripheral bay.

Diskette Drive

The diskette drive is a peripheral device used to load and back up system software. All new MAPs include a single diskette drive. This unit uses standard 3.5-inch, 1.44-Mbyte, high-density diskettes. It is located in the front chassis area and is accessible from the user interface panel.

Cartridge Tape Drive

The cartridge tape drive is a peripheral device used to back up and restore files from a tape cartridge. This unit eliminates the need to install and back up files using diskettes and thus streamlines the process. A single cartridge tape can store up to 2-Gbytes of information.

All new V6.0 MAPs include a single 2-Gbyte, SCSI-format cartridge tape drive. A 525-Mbyte SCSI-format cartridge tape drive is supported for upgrades to V6.0. Tapes can be purchased from several different vendors.

It is located below the diskette drive, inside the disk bay, and consumes a half-height slot.

Power Supply

The MAP/100C is available in two power supply configurations:

- -48 VDC power supply
- Standard AC power supply (110V/220V)

See Figure 2-1 and Table 2-1 for the front view of the MAP/100C. See Figure 2-2 for the back view. See Figure 2-3 for typical, multiple MAP/100Cs rack-mounted in a 4ESS equipment rack.

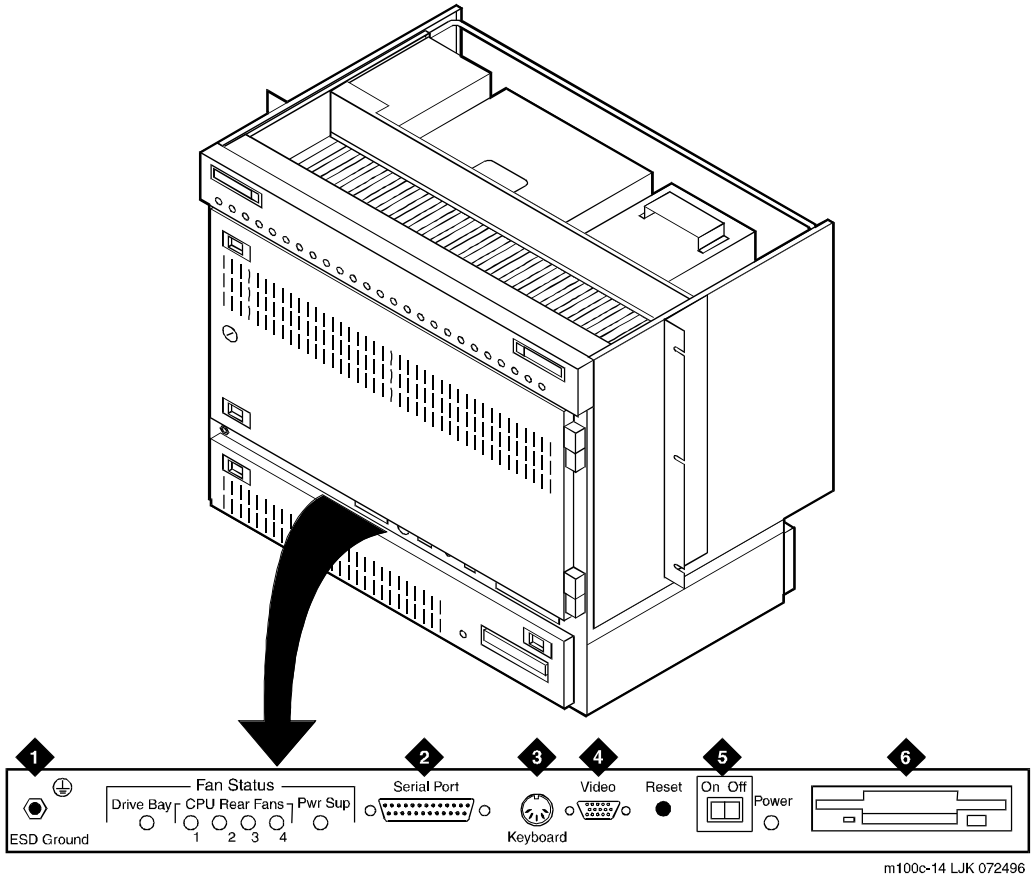


Figure 2-1. Front View of a MAP/100C

Table 2-1. Callouts for Figure 2-1

Callout Number	Description
1	ESD ground
2	Serial port
3	Keyboard connector
4	Video port
5	On/off power switch
6	Diskette drive

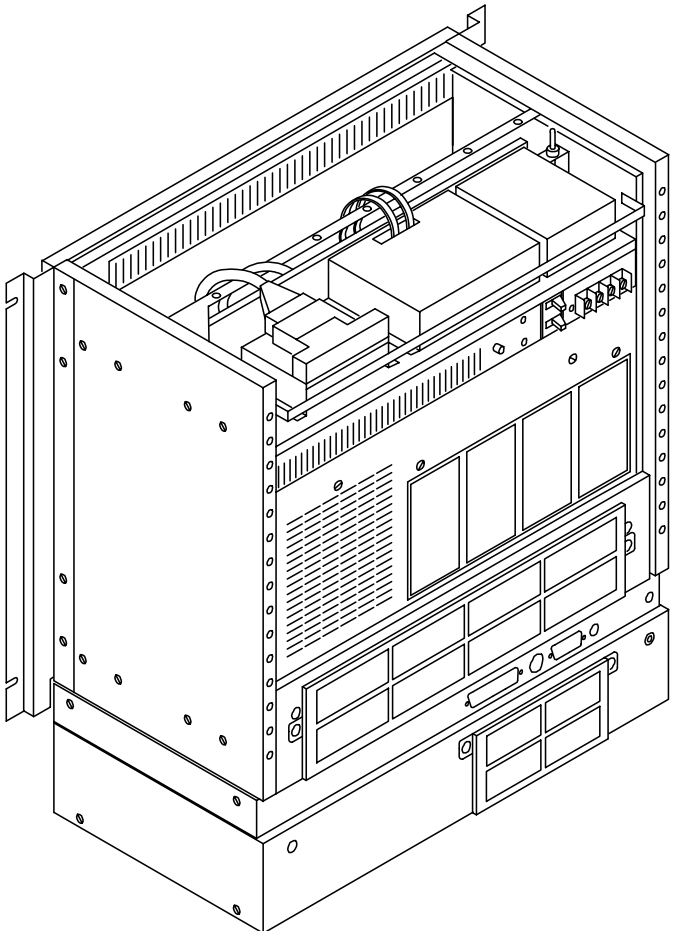


Figure 2-2. Back View of a MAP/100C

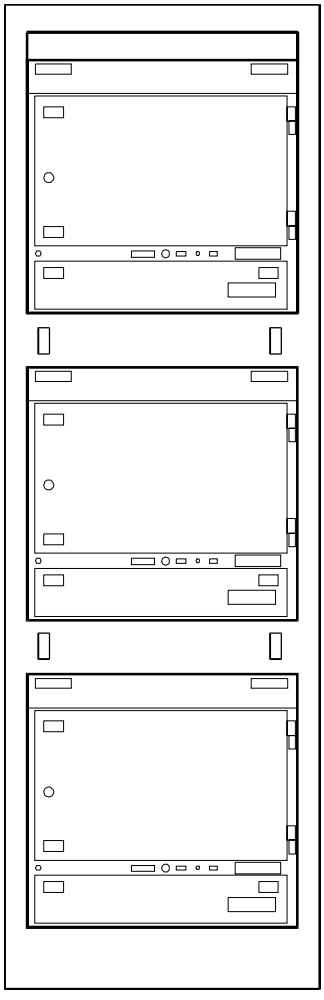


Figure 2-3. Multiple Rack-Mounted MAP/100Cs, Front View

MAP/100 Standard System Hardware

The MAP/100 is available as a freestanding desk-side unit, equipped with four casters that allow you to roll the chassis around as required, or as a rack-mountable unit. Up to three units may be mounted in a 19-inch equipment rack. The MAP/100 may not be mounted in equipment racks used to mount the MAP/100C.

The platform consists of one physical unit with two main areas: the card backplane and a peripheral bay (disk bay) with a power supply unit.

Standard hardware components for the MAP/100 include the following:

- Backplane
- Standard circuit cards
- Standard bus cables
- Peripheral devices
- Power supply

Backplane

Each platform contains a backplane that provides circuit card mounting positions called *slots*. The MAP/100 backplane resides inside the front chassis.

Two backplane configurations are supported in the MAP/100 for V6.0:

- PCI/ISA MAP/100 backplane (installed in all new V6.0 sales)

  This backplane has a total of 20 ISA slots, 1 dedicated CPU slot, and 3 PCI slots. It replaces the older MAP/100 backplane without PCI slots, described below.

  Of the 20 ISA slots, one ISA slot is dedicated to the video circuit card and one ISA slot is usually occupied by a remote maintenance circuit card. The 18 remaining ISA slots are available for voice response/processing cards as well as cards to support local area networks, etc.

  The three remaining PCI slots are available for future PCI peripheral support.

- ISA MAP/100 backplane (supported for upgrades to V6.0)

  This backplane has 25 ISA slots. It does not have any PCI slots. Four of the 25 ISA slots are used for standard circuit cards that provide basic platform functions. The 21 remaining ISA slots are available for voice response/processing cards as well as cards to support local area networks, etc.

This platform is equipped with a disk bay with space for up to four full-height peripherals or eight half-height peripherals, or some combination thereof (for example, two full-height and four half-height). In the standard configuration, one half-height slot is occupied by the cartridge tape drive and one half-height slot is occupied by a hard disk drive.

Standard Circuit Cards

Standard circuit cards are used to control the processes of the platform. These cards provide the standard central processing, video, and peripheral functions, and certain basic communication functions of the system.

In the MAP/100, all circuit cards are mounted horizontally with any interface cables exiting from the back of the platform. A hinged door on the left side of the platform provides access to the backplane.

For more information about software associated with the following circuit cards, see Chapter 4, ‘‘Features’’ and Chapter 5, ‘‘Feature Packages’’. The following circuit cards are standard hardware components in the MAP/100C:

- Central processing unit circuit card
- External SCSI connector circuit card
- SCSI host adapter
- Video controller circuit card
- Remote maintenance circuit card

Central Processing Unit Circuit Card

Two central processing unit (CPU) circuit cards are supported by the MAP/100 for V6.0:

- P5 processor operating at 120-MHz with a minimum of 32 Mbytes of RAM and a maximum of 128 Mbytes of RAM (installed in all new V6.0 systems)
- 486DX processor operating at 50-MHz with a minimum of 32 Mbytes of RAM and a maximum of 64 Mbytes of RAM (supported for *upgrades only*)

External SCSI Connector Circuit Card

The external SCSI connector circuit card provides an external SCSI connector and an active termination for the SCSI bus.

NOTE:
This component is only present in systems containing the P5 120-MHz CPU.

SCSI Host Adapter

The SCSI host adapter provides an interface between the system processor and SCSI peripheral devices.

NOTE:
The SCSI host adapter is required for all 486DX MAP/100 platforms (upgrades to V6.0 only). It is not required for P5120 MAP/100 platforms since its functions are performed on the CPU circuit card.

Video Controller Circuit Card

The video controller circuit card provides the interface between the system processor and the video monitor, as follows:

- STB Horizon (installed in all new sales of V6.0)
- Model WDXLR831124 (supported for upgrades to V6.0)
- Model WDXLR83160 (supported for upgrades to V6.0)
- Model WDXLR833124 (supported for upgrades to V6.0)

Remote Maintenance Circuit Card

The remote maintenance circuit card provides a method of remote monitoring and access for off-site technicians. This circuit card is available with a built-in modem.

NOTE:
The remote maintenance circuit card with a built-in modem is required only in the US. A remote maintenance circuit card with an external modem is being developed for global sales.

Standard Bus Cables

There are two types of standard bus cable for the system:

- SCSI bus cable
- TDM bus cable

SCSI Bus Cable

The SCSI bus cable serves as the interface from one SCSI component to another. For example, it provides an interface from the hard disk drive to the cartridge tape drive.

TDM Bus Cable

The TDM bus cable is used by the voice processing cards (Tip/Ring, T1, E1, SSP, and SP/CMP) when they send digitized speech to other cards in the system. For example, it is used to connect SP or SSP resources to telephone network connections for speech playback, voice coding, speech recognition, or for bridging one telephone network connection to another. A TDM bus cable is supplied with each V6.0 system purchased.

Peripheral Devices

V6.0 system platforms support storage devices including hard disk, diskette, and cartridge tape drives. The MAP/100 is supplied with data storage/transfer devices in the Small Computer System Interface (SCSI) format.

For more information on the capabilities and use of SCSI peripherals, see "Guidelines for the Addition of SCSI Devices" later in this chapter and Chapter 4, "Features".

The MAP/100 platform supports the following peripheral devices:

- Hard disk drive
- Diskette drive
- Cartridge tape drive

Hard Disk Drive

A hard disk drive is a peripheral device used to provide storage and random access to large amounts of data within the system architecture. This data can include the operating system, application software, speech data, and database tables.

All new MAP/100 platforms are equipped with at least one 2-Gbyte IBM SCSI hard disk drive. The MAP/100 can support up to six SCSI hard disk drives. This disk is a half-height peripheral and is mounted in the peripheral bay.

Diskette Drive

The diskette drive is a peripheral device used to load and back up system software. All new MAPs include a single diskette drive. This unit uses standard 3.5-inch, 1.44-Mbyte, high-density diskettes. It is located in the front chassis area and is accessible from the user interface panel.

Cartridge Tape Drive

The cartridge tape drive is a peripheral device used to back up and restore files from a tape cartridge. This unit eliminates the need to install and back up files using diskettes and thus streamlines the process. A single cartridge tape can store up to 2-Gbytes of information.

All new V6.0 MAPs include a single 2-Gbyte, SCSI-format cartridge tape drive. A 525-Mbyte SCSI-format cartridge tape drive is supported for upgrades to V6.0. Tapes can be purchased from several different vendors.

It is located above the diskette drive, in the top of the peripheral bay, and consumes a half-height slot.

Power Supply

All new sales of the MAP/100 are available with an AC (110V/220V) hot-swappable power supply module with facilities for an external uninterruptable power supply (UPS). A second hot-swappable redundant power supply module is offered as an option.

NOTE:
An internal battery backup is supported for MAP/100 *upgrades only*.

Figure 2-4 shows the front view of the MAP/100. Figure 2-5 shows the back view. Table 2-2 lists the callouts for Figure 2-5. Figure 2-6 shows typical, multiple rack-mounted MAP/100s.

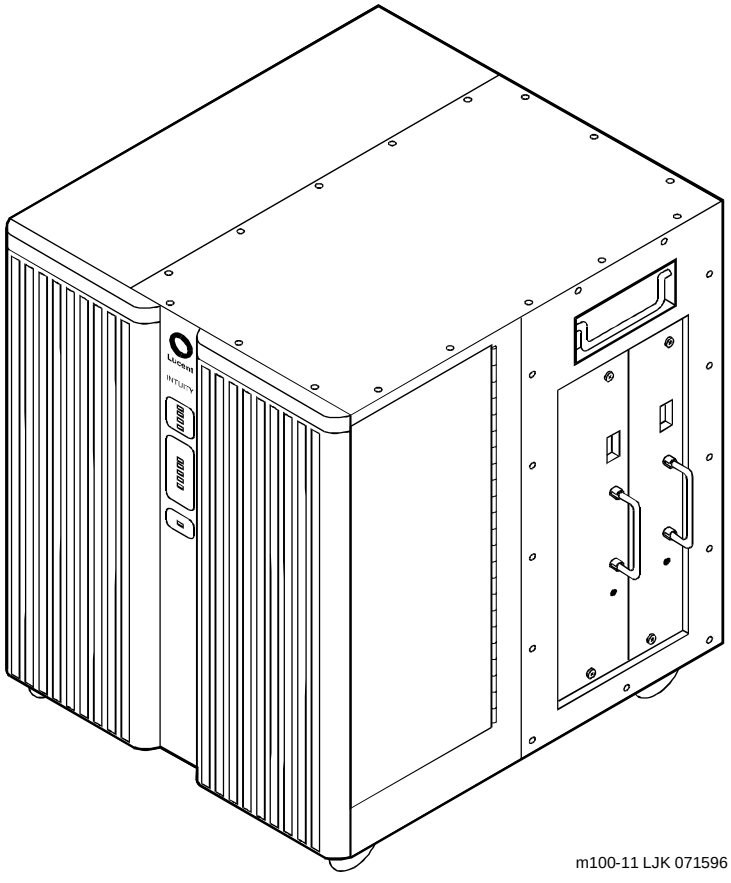


Figure 2-4. Front View of a Desk-side MAP/100 without Top and Side Dress Panels

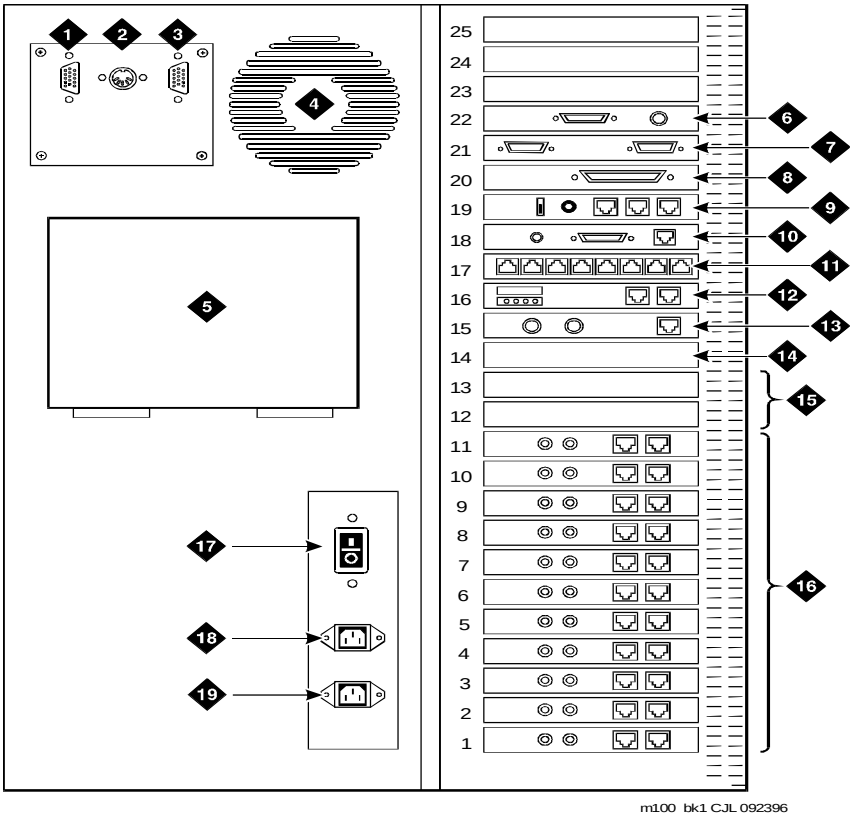


Figure 2-5. Back View of a Desk-side MAP/100 with PCI Backplane and a Circuit Pack Configuration

Table 2-2. Callouts for Figure 2-5

Callout	Description	Callout	Description	Callout	Description
1	COM2 port	8	Video card faceplate	15	Signal processor circuit card
2	Keyboard connector	9	Remote maintenance circuit card	16	IVC6 (AYC10) Tip/Ring circuit cards
3	VGA video port	10	Ethernet LAN circuit card	17	Power on/off switch
4	Power supply exhaust vent	11	Multi-port serial card	18	Accessory power outlet
5	Tip/Ring distribution panel	12	Fax circuit card	19	AC input outlet
6	External SCSI connector circuit card (terminator not shown)	13	E1/T1 (AYC21) circuit card		
7	CPU card faceplate	14	Speech and signal processor circuit card		

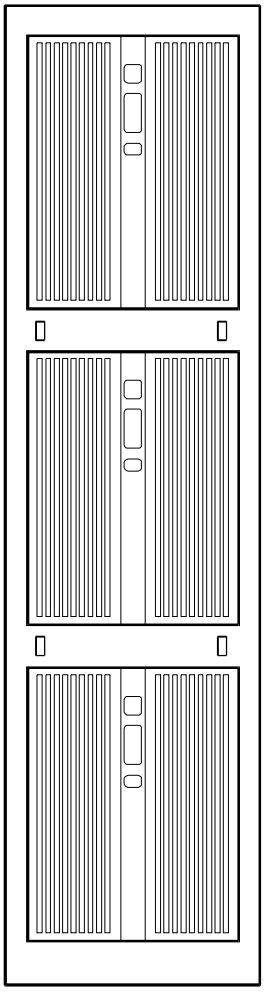


Figure 2-6. Multiple Rack-Mounted MAP/100s, Front View

MAP/40 Standard System Hardware

The MAP/40 platform is a desk-side (tower), PC-sized unit designed for use in a typical office setting. Figure 2-7 shows the front view of the MAP/40. Figure 2-8 shows the back view.

Standard hardware components for the MAP/40 include the following:

- Backplane
- Standard circuit cards
- Standard bus cables
- Peripheral devices
- Power supply

Backplane

Each platform contains a backplane that provides circuit card mounting positions called *slots*. The MAP/40 backplane resides inside the front chassis.

Three central processing unit (CPU) options are supported for the V6.0 MAP/40 backplane:

- MAP/40 with P5 120-MHz CPU (all new sales of MAP/40)
- MAP/40 with 486DX, 50-MHz CPU (supported in upgrades to V6.0)
- MAP/40 with 486SX, 25-MHz CPU (supported in upgrades to V6.0)

P5 120-MHz MAP/40

All new sales of the MAP/40 have 12 ISA slots with 8 ISA slots available for customer-selected cards. Of the 12 ISA slots, one slot is used by the video card, one slot is used by the external SCSI connector circuit card, one slot is used by the CPU card, and one slot is used by the remote maintenance circuit card. The remaining eight slots are available for voice response/processing cards as well as cards to support local area networks, host, etc.

486DX MAP/40 and 486SX MAP/40

Two older supported MAP/40 CPU options, the 486DX with 50-MHz CPU and the 486SX, also have 12 ISA slots with 8 ISA slots available for customer-selected cards. Of the 12 ISA slots, one slot is used by the video card, one slot is used by the SCSI disk controller, one slot is used by the CPU card, and one slot is used by the remote maintenance circuit card. The remaining eight slots are available for voice response/processing cards as well as cards to support local area networks, host, etc.

NOTE:
The PCI backplane is not available for the MAP/40.

This platform is equipped with disk bay space for four full-height peripherals. Two of the disk bays are accessible from the outside of the unit.

For more information on all supported central processing units, see "Central Processing Unit Circuit Card" below.

Standard Circuit Cards

Standard circuit cards are used to control the processes of the platform. These circuit cards provide the standard central processing, video, and peripheral functions, and certain basic communication functions of the system.

In the MAP/40, all circuit cards are mounted horizontally with any interface cables exiting from back of the platform. Access to the backplane is provided by removing an exterior dress cover, an internal card cage cover, and a circuit card cage retaining bracket.

For more information about software associated with the following circuit cards, see Chapter 4, "Features" and Chapter 5, "Feature Packages".

The following circuit cards are standard hardware components in the MAP/40:

- Central processing unit circuit card
- External SCSI connector circuit card
- SCSI host adapter
- Video controller circuit card
- Remote maintenance circuit card

Central Processing Unit Circuit Card

Three central processing unit (CPU) circuit cards are supported for the MAP/40 for V6.0:

- P5 processor operating at 120-MHz with a minimum of 32 Mbytes of RAM and a maximum of 128 Mbytes of RAM (installed in all new V6.0 systems)
- 486DX processor operating at 50-MHz with a minimum of 32 Mbytes of RAM and a maximum of 64 Mbytes of RAM (supported for *upgrades only*)
- 486SX processor operating at 25-MHz with a minimum of 32 Mbytes of RAM and a maximum of 64 Mbytes of RAM (supported for *upgrades only*)

External SCSI Connector Circuit Card

The external SCSI connector circuit card provides an external SCSI connector and an active termination for the SCSI bus.

NOTE:
This component is only present in systems containing a P5 120-MHz CPU.

SCSI Host Adapter

The SCSI host adapter provides an interface between the system processor and SCSI peripheral devices.

NOTE:
The SCSI host adapter is required for all 486DX and 486SX MAP/40 platforms (upgrades to V6.0 only). It is not required for P5 platforms since its functions are provided on the CPU circuit card.

Video Controller Circuit Card

The video controller circuit card provides the interface between the system processor and the video monitor, as follows:

- STB Horizon (installed in all new sales of V6.0)
- Model WDXLR831124 (supported for upgrades to V6.0)
- Model WDXLR83160 (supported for upgrades to V6.0)
- Model WDXLR833124 (supported for upgrades to V6.0)

Remote Maintenance Circuit Card

The remote maintenance circuit card provides a method of remote monitoring and access for off-site technicians. This circuit card is available with a built-in modem.

NOTE:
The remote maintenance circuit card with a built-in modem is required only in the US. A remote maintenance circuit card with an external modem is being developed for global sales.

Standard Bus Cables

There are two types of standard bus cable for the system:

- SCSI bus cable
- TDM bus cable

SCSI Bus Cable

The SCSI bus cable serves as the interface from one SCSI component to another. For example, it provides an interface from the hard disk drive to the cartridge tape drive.

TDM Bus Cable

The TDM bus cable is used by the voice processing cards (Tip/Ring, T1, E1, SSP, and SP/CMP) when they send digitized speech to other cards in the system. For example, it is used to connect SP or SSP resources to telephone network connections for speech playback, voice coding, speech recognition, or for bridging one telephone connection to another. A TDM bus cable is supplied with each V6.0 system purchased.

Peripheral Devices

V6.0 system platforms support storage devices including hard disk, diskette, and cartridge tape drives. The MAP/40 is supplied with data storage/transfer devices in the Small Computer System Interface (SCSI) format.

For more information on the capabilities and use of SCSI peripherals, see "Guidelines for the Addition of SCSI Devices" later in this chapter and Chapter 4, "Features".

The MAP/40 platform supports the following peripheral devices:

- Hard disk drive
- Diskette drive
- Cartridge tape drive

Hard Disk Drive

A hard disk drive is a peripheral device used to provide storage and random access to large amounts of data within the system. This data can include the operating system, application software, speech data, and database tables.

All new MAP/40 platforms are equipped with at least one 2-Gbyte IBM SCSI hard disk drive. The MAP/40 can support up to two SCSI hard disk drives. This disk is a half-height peripheral and is mounted in the peripheral bay.

Diskette Drive

The diskette drive is a peripheral device used to load and back up system software. All new MAPs include a single diskette drive. This unit uses standard 3.5-inch, 1.44-Mbyte, high-density diskettes. It is located in the front chassis area and is accessible from the user interface panel.

Cartridge Tape Drive

The cartridge tape drive is a peripheral device used to back up and restore files from a tape cartridge. This unit eliminates the need to install and back up files using diskettes and thus streamlines the process. A single cartridge tape can store up to 2-Gbytes of information.

All new V6.0 MAPs include a single 2-Gbyte, SCSI-format cartridge tape drive. A 525-Mbyte SCSI-format cartridge tape drive is supported for upgrades to V6.0. Tapes can be purchased from several different vendors.

It is located below the diskette drive, inside the peripheral bay, and consumes a half-height slot.

Power Supply

The MAP/40 operates from a standard AC power supply.

Figure 2-7 shows the front view of the MAP/40 with callouts listed in Table 2-3. Figure 2-8 shows the back view with callouts listed in Table 2-4.

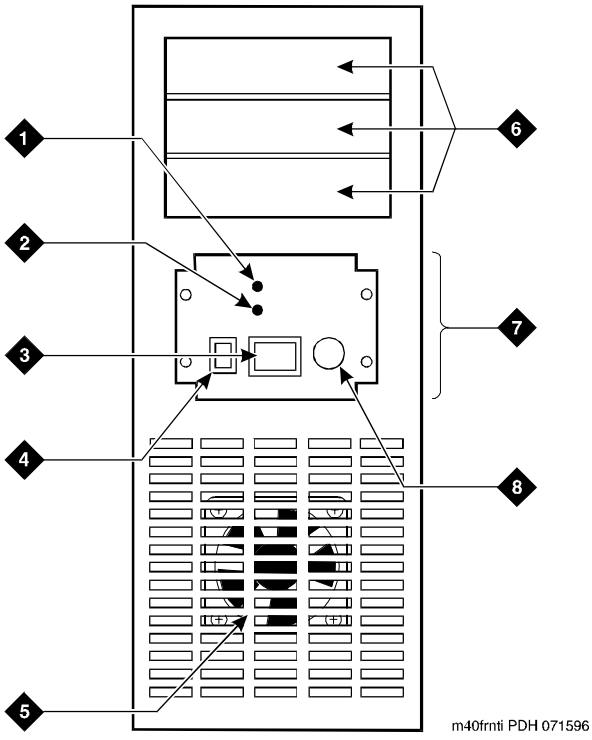


Figure 2-7. Front View of the MAP/40

Table 2-3. Callouts for Figure 2-7

Callout Number	Description
1	Disk INT activity indicator (green)
2	Power-on indicator (green)
3	Power on/off switch
4	System reset switch
5	Internally mounted chassis fan
6	Peripheral device locations (hard disk drive, diskette drive, cartridge tape drive)
7	Control panel
8	Keyboard connector

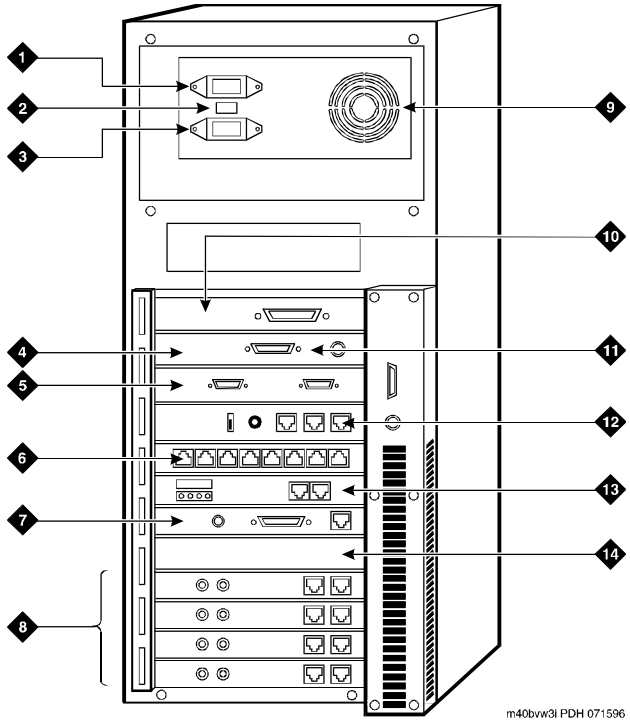


Figure 2-8. Back View of the MAP/40

Table 2-4. Callouts for Figure 2-8

Callout Number	Description	Callout Number	Description
1	Accessory power outlet	8	IVC6 (AYC10) Tip/Ring circuit cards
2	AC voltage selection switch	9	Power supply exhaust vent
3	AC input outlet	10	Video card faceplate
4	External SCSI connector circuit card faceplate	11	External SCSI connector circuit card (terminator not shown)
5	CPU card faceplate	12	Remote maintenance circuit card
6	Multi-port serial card	13	Fax circuit card
7	Ethernet LAN circuit card	14	Signal processor circuit card

MAP/5P Standard System Hardware

The MAP/5P platform is a deskside unit in a mini-tower configuration. It is a PC-sized unit designed for use in a typical office setting. Figure 2-9 shows the front view of the MAP/5P. Figure 2-10 shows the back view.

Standard hardware components for the MAP/5P include the following:

- Riser card
- Motherboard
- Standard circuit cards
- Standard bus cables
- Peripheral devices
- Power supply

Riser Card

Each platform contains a riser card that provides circuit card mounting positions called *slots*. The MAP/5P riser card resides inside the chassis.

The MAP/5P riser card supports 4 ISA slots, 2 PCI slots, and one combination ISA/PCI slot.

Motherboard

The MAP/5P motherboard contains:

- P5 133 MHz CPU
- Video interface
- Keyboard connector
- Mouse connector
- Two serial ports and one parallel port
- 64 Mbyte of memory
- Riser card connector

Standard Circuit Cards

Standard circuit cards are used to control the processes of the platform. These circuit cards provide certain basic communication functions of the system.

In the MAP/5P, all circuit cards are mounted horizontally with any interface cables exiting from back of the platform. Access to the riser card is provided by removing an exterior dress cover.

For more information about software associated with the following circuit cards, see and Chapter 5, ‘‘Feature Packages’’.

The following circuit cards are standard hardware components in the MAP/5P:

- SCSI controller circuit card
- Remote maintenance circuit card

SCSI Controller Circuit Card

The SCSI controller circuit card is a PCI card and provides an interface between the system processor located on the motherboard and SCSI peripheral devices.

Remote Maintenance Circuit Card

The remote maintenance circuit card provides a method of remote monitoring and access for off-site technicians. This circuit card is available with a built-in modem.

NOTE:
The remote maintenance circuit card with a built-in modem is required only in the US. A remote maintenance circuit card with an external modem is being developed for global sales.

Standard Bus Cables

There are two types of standard bus cable for the system:

- SCSI bus cable
- TDM bus cable

SCSI Bus Cable

The SCSI bus cable serves as the interface from one SCSI component to another. For example, it provides an interface from the hard disk drive to the cartridge tape drive.

TDM Bus Cable

The TDM bus cable is used by the voice processing cards (Tip/Ring) when they send digitized speech to other cards in the system. For example, it is used to bridge one telephone connection to another. A TDM bus cable is supplied with each V6.0 system purchased.

Peripheral Devices

V6.0 system platforms support storage devices including hard disk, diskette, and cartridge tape drives. The MAP/5P is supplied with data storage/transfer devices in the Small Computer System Interface (SCSI) format.

For more information on the capabilities and use of SCSI peripherals, see "Guidelines for the Addition of SCSI Devices" later in this chapter and Chapter 4, "Features".

The MAP/5P platform supports the following peripheral devices:

- Hard disk drive
- Diskette drive
- Cartridge tape drive

Hard Disk Drive

A hard disk drive is a peripheral device used to provide storage and random access to large amounts of data within the system. This data can include the operating system, application software, speech data, and database tables.

All new MAP/5P platforms are equipped with at least one 2-Gbyte IBM SCSI hard disk drive. The MAP/5P can support up to two SCSI hard disk drives. This disk is a half-height peripheral and is mounted in the peripheral bay.

Diskette Drive

The diskette drive is a peripheral device used to load and back up system software. All new MAPs include a single diskette drive. This unit uses standard 3.5-inch, 1.44-Mbyte, high-density diskettes. It is accessible from the front chassis area.

Cartridge Tape Drive

The cartridge tape drive is a peripheral device used to back up and restore files from a tape cartridge. This unit eliminates the need to install and back up files using diskettes and thus streamlines the process. A single cartridge tape can store up to 2-Gbytes of information.

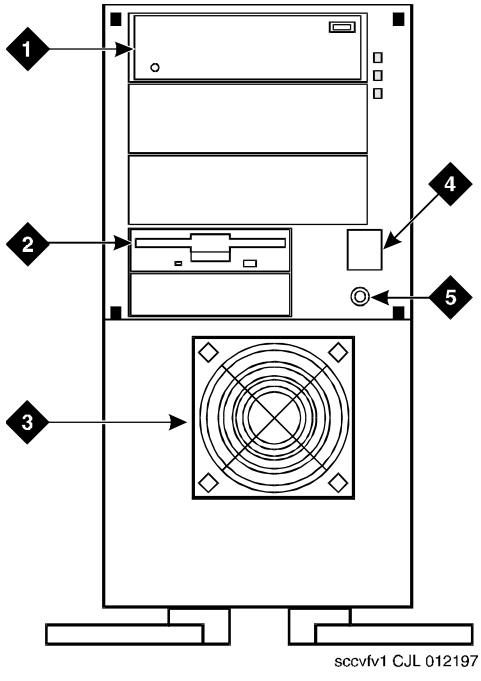
All new V6.0 MAPs include a single 2-Gbyte, SCSI-format cartridge tape drive. Tapes can be purchased from several different vendors.

The cartridge tape drive is located in Bay 1 of the MAP/5P (Figure 2-9).

Power Supply

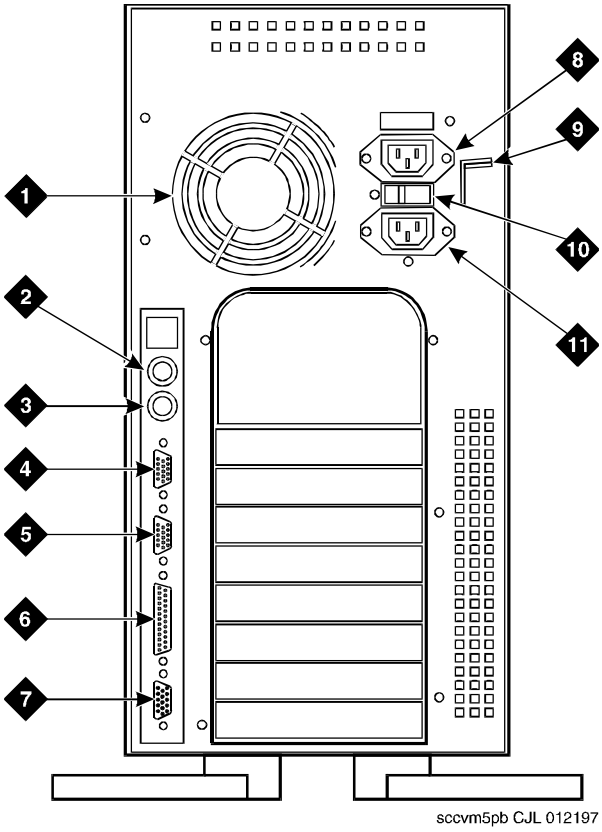
The MAP/5P operates from a standard AC power supply.

Figure 2-9 shows the front view of the MAP/5P with callouts listed below the figure. Figure 2-10 shows the back view.



1. Cartridge tape drive
2. Diskette drive
3. Circuit card cage fan
4. Power button
5. Reset button

Figure 2-9. Front View of the MAP/5P with Dress Cover Removed



1. Power supply fan intake
2. Keyboard connector
3. Mouse connector
4. COM1
5. COM2
6. Parallel port
7. Video connector
8. AC power supply outlet
9. Dress cover lock
10. AC voltage selector switch
11. AC power inlet receptacle

Figure 2-10. Rear View of the MAP/5P

Optional System Hardware

Optional hardware is not required for the basic platform to function, yet many operations, features, and functions cannot be accomplished without *some* of these optional components. For example, to view files stored on your hard disk drive a keyboard and monitor are required, but these components are not required for the basic MAP to function and would not be present in many operational environments.

Optional Circuit Cards

The types of optional circuit cards within each platform vary depending on the different functions and features in each system.

NOTE:
At least one E1, T1, or Tip/Ring circuit card is required to provide telephone connections to the system.

Optional circuit cards are used to perform unique functions. These cards provide functions such as analog and digital interfaces to the public switched (telephone) network, remote alarming, network communications, and speech processing capabilities.

For more information concerning software associated with the following circuit cards, see Chapter 4, ‘‘Features’’ and Chapter 5, ‘‘Feature Packages’’.

This section describes four categories of optional circuit cards:

- Analog circuit cards
- Digital circuit cards
- Signal processing circuit cards
- Data communications circuit cards

Analog Circuit Cards

Analog circuit cards provide an analog telephony interface to the system.

This section describes the following optional analog circuit cards:

- Tip/Ring circuit cards
- Fax circuit card

Tip/Ring Circuit Cards

Tip/Ring circuit cards provide an analog interface to the system over a telephone line. All Tip/Ring circuit cards installed in a system can be used to process incoming calls and outgoing calls, bridge incoming calls to outgoing calls, or any combination of both. All Tip/Ring circuit cards may be connected to the TDM bus. There are six ports per card.

NOTE:
Up to 12 Tip/Ring slots are available in a MAP/100C or a MAP/100. Up to 8 Tip/Ring slots are available in a MAP/40. Up to 4 Tip/Ring slots are available in a MAP/5P.

V6.0 supports the following Tip/Ring circuit cards:

- Next Generation Tip/Ring (NGTR - AYC30) – This is the latest version Tip/Ring circuit card. It is functionally equivalent to the IVC6 Tip/Ring circuit card and, in addition, is tunable to meet global standards.
- IVC6 (AYC10) – This Tip/Ring circuit card supports coding, playback, intelligent call classification analysis (CCA), and CELP coding.
- IVP6 – The V6.0 system supports several IVP6 circuit cards to meet global standards. The AYC28 is the latest IVP6 circuit card and is supported for upgrades only.

You can use all Tip/Ring circuit cards of the same type on a system, or you can have any combination of NGTR, IVC6, and IVP6. The number of simultaneous incoming calls and maximum number of incoming and bridging outgoing telephone network connections depends on the number of Tip/Ring circuit cards used, as well as your platform.

The type of Tip/Ring circuit card you can use also depends upon what country you want to use it in. For more information on suitable Tip/Ring circuit cards, consult your Lucent account representative.

NOTE:
Systems that mix IVP6 with NGTR and/or IVC6 *must not* use the CELP coding type since it is not supported by IVP6 circuit cards.

All supported Tip/Ring circuit cards provide six channels per card.

- The MAP/40 can support up to 8 Tip/Ring circuit cards.
- The MAP/100 and MAP/100C can support up to 12 Tip/Ring circuit cards.
- The MAP/5P can support up to 4 Tip/Ring circuit cards.

NOTE:
Optional Tip/Ring distribution panels mount on the top of the MAP/100C chassis, on the rear of the MAP/100 chassis, and external to the MAP/40 chassis.

In addition to their analog interface, Table 2-5 shows the other features available on some of the Tip/Ring circuit cards. If an "X" appears in the Tip/Ring circuit card or applications column, that feature is available for those Tip/Ring circuit cards and applications.

Table 2-5. Features Available on the NGTR, IVC6, and IVP6 Tip/Ring Circuit Cards

Feature	NGTR	IVC6	IVP6
Speech play/code CELP format	X	X	
Speech play/code other formats	X	X	X
Volume change	X		X
Simple call classification analysis	X	X	X
Audio jacks	X	X	X

Fax Circuit Cards

These fax circuit cards provide the specialized analog interface for basic fax capabilities. They provide four dedicated analog ports per board.

The following fax circuit cards are supported for V6.0:

- Brooktrout TR114+14L (optional in all new V6.0 sales)
- Brooktrout TR114-14L (supported in upgrades to V6.0)

NOTE:
The fax circuit card *cannot* be used for IVR or speech recognition.

For more information on the use of this circuit card or the feature package it supports, see "Script Builder FAX Actions" in Chapter 5, "Feature Packages". For more information on circuit card maximums, see "Circuit Card Maximums" in this chapter.

Digital Circuit Cards

Digital circuit cards provide a digital telephony interface to the system. All digital circuit cards connect to the TDM bus cable.

NOTE:
An SSP or SP circuit card, described later, must be used to support one or more digital circuit cards being used in coding and playback situations.

This section describes two types of digital circuit cards:

- E1/T1 (AYC21) circuit card
- T1 (AYC11 and AYC3B) circuit card

E1/T1 (AYC21) Circuit Card

The AYC21 circuit card is referred to as an E1/T1 circuit card because it can be used globally for E1-rate services and also in the US for T1-rate services. The platform maximum for E1/T1 circuit cards running at the E1-rate is three. The platform maximum for E1/T1 circuit cards running at the T1-rate is five.

E1-Rate Services. At its E1-rate the AYC21 provides a 32-channel digital interface (30 voice channels and 2 signaling and framing channels) between a telephone switch and the system. An E1 digital circuit carries information at a rate of 2.048 Mbps. It significantly improves system connectivity and reduces the number of circuit cards required to support multiple channels.

NOTE:
All platforms can support up to three E1 circuit cards, for a maximum of 90 telephone network connections.

T1-Rate Services. At its T1-rate the AYC21 provides a 24-channel digital interface between the switch and the system. A T1 digital circuit carries information at a rate of 1.544 Mbps.

NOTE:
All platforms can support up to five T1 circuit cards, for a maximum of 120 telephone network connections.

T1 Circuit Cards

A single T1 digital trunk carries up to 24 telephone network connections on two twisted-pair (2-wire) cables.

Two older T1 circuit cards are supported for V6.0: the AYC11, and the AYC3B.

- AYC11 (supported for V6.0) — The circuit card features a 15-pin D-subminiature T1 connector on the external faceplate that provides an interface port between the voice system and channel service unit (CSU) or private branch exchange (PBX).

  The AYC11 does not support detection of call progress tones in support of call transfer, nor does it support detection of the original caller hanging up during an attempted transfer.

- AYC3B (supported for V6.0) — An early version of the T1 circuit card that features a 15-pin D-subminiature T1 connector on the external faceplate that provides an interface port between the voice system and a CSU or private branch exchange.

  AYC11 and AYC3B circuit card capacities are:

  — 24 telephone network connections with touch-tone detection

  — 23 telephone network connections with touch-tone detection and 1 signalling channel (D-channel) when used for Primary Rate Interface (PRI).

Signal Processor Circuit Cards

This section describes three types of signal processor circuit cards:

- Speech and signal processor circuit card
- Signal processor circuit card
- Companion circuit card

See *INTUITY™ CONVERSANT® System Version 6.0 Speech Development, Processing, and Recognition*, 585-310-762, for additional information on the use of speech processor circuit cards.

Speech and Signal Processor Circuit Card

The speech and signal processor circuit card (SSP), a high-performance signal processor introduced in V6.0, is capable of simultaneous support for various speech technologies. The SSP circuit card does not connect directly to the telephone network and must be used with at least one T1 or Tip/Ring circuit card. AYC43 is the first version of the SSP circuit card.

The SSP does not require a Companion circuit card interface, as current SP circuit cards do, but has sufficient power to do all the work previously done by the SP and Companion circuit card set (1 SP + 2 CMPs). For example, the SSP provides processing power to accommodate all of the V6.0 system speech technology features including Text-to-Speech, speech recognition, voice code and play back, dial pulse recognition, and full call classification analysis simultaneously.

Additionally, there are no monolingual restrictions on the SSP. Any two languages can be paired for bilingual speech recognition on the same SSP circuit card. All languages that are new to V6.0 and all new bilingual pairings require an SSP circuit card to make use of the new capability. New languages will *only* be offered on the SSP.

The greater memory on the SSP overcomes limitations imposed by the SP/CMP combination, including restrictions on which languages could be used in bilingual pairings. In addition, the SSP circuit card provides the CELP speech encoding algorithm for playback and coding.

Capacity Information. The SSP circuit card feature set is generally a superset of the SP circuit card feature set. For more information about the SP circuit card, see "Signal Processor Circuit Cards" in this section.

Table 2-6 shows SSP circuit card channel capacities.

NOTE:
Channel counts are based on the assumption that the entire SSP circuit card is dedicated to the specified feature.

Table 2-6. SSP Card Channel Capacities

Feature	No. of Simultaneous Transactions Supported
Full call classification analysis[1]	42
Text-to-speech	60
FlexWord™ speech recognition[2]	15
WholeWord speech recognition without barge-in[2]	15
WholeWord speech recognition with barge-in[2]	10
Voice or background music recorded in 64-Kbps PCM format with automatic gain control (AGC)	120
Voice or background music recorded in 24-Kbps or 16-Kbps SBC format with automatic gain control (AGC)	100
Voice or background music recorded in 32-Kbps or 16-Kbps ADPCM format	120
16-Kbps CELP for coding	60
16-Kbps CELP for single-speed playback	120
Dial pulse recognition	120
Echo cancellation (used to support barge-in)	60

1. Available in US only.
2. Speech recognition simultaneous transaction counts are independent of language and country.

Platform Maximums. Up to seven SSP circuit cards are supported on MAP/40 platforms and up to eight SSP circuit cards are supported on MAP/100 and MAP/100C platforms.

NOTE:
In a V6.0 system with a P5 120-MHz CPU, a maximum of two SP circuit cards can be supported.

Signal Processor Circuit Card

The signal processor (SP) circuit card is used for voice response or voice coding applications, speech recognition, call classification, etc. The SP circuit card does not connect directly to the telephone network and must be used with at least one T1 or Tip/Ring circuit card.

NOTE:
The SP circuit card is supported for upgrades to V6.0 only. A MAP/100C or MAP/100 with a P5 120-MHz processor must have updated AYC2C (Series 0-8) or AYC9 (Series 8) if *more than two* SP circuit cards are needed. For more information on how to identify the series of your SP circuit card, see Chapter 5, “Replacing, Installing, or Upgrading Circuit Cards,” of the maintenance book specific to your platform.

When used for speech recognition or playback and coding tasks, each SP circuit card can be shared by multiple application requests. For example, a single circuit card may service one network connection with speech recognition functions and another connection with playback and coding. However, the SP is more limited than the SSP in the types of features it can simultaneously support. Speech recognition on the SP can be *either* WholeWord or FlexWord, but *not both*. CCA on the SP requires a dedicated SP that performs no other function. Text-to-Speech requires a dedicated AYC9.

These signal processor circuit cards are supported for V6.0:

- AYC2C – This SP circuit card is used for playback and coding, speech recognition, CCA, or PRI D-channel processing.
- AYC9 – This SP circuit card is used to support Text-to-Speech (TTS).
- AYC2B – This SP circuit card is used for playback and coding, speech recognition, CCA, or PRI D-channel processing.

Certain features rely more heavily on SP circuit card processing than other features do. This creates noticeable differences in the number of channels of service an SP circuit card can provide among features.

Capacity Information. Table 2-7 shows SP circuit card channel capacities.

NOTE:
Channel counts presented in Table 2-7 are based on the assumption that the entire SP circuit card is dedicated to the specified feature.

Table 2-7. SP Circuit Card Channel Capacities

Feature	No. of Simultaneous Transactions Supported	
	AYC2C	AYC9
Call classification analysis	6	6
Text-to-Speech	Not supported	6
FlexWord speech recognition[1]	8	8
WholeWord speech recognition[1]	12	12
Recording or playback in SBC format	20	Not supported
Recording or playback in ADPCM	48	Not supported

1. Requires two AYC7 or AYC7B companion (CMP) circuit cards.

Companion Circuit Card

The companion (CMP) circuit card is used *only* to support speech recognition applications. It is connected to the SP circuit card via an SP-to-CMP interface cable pair and requires its own ISA slot. All of the signal interfaces come from the SP circuit card via the cable pair which can connect two CMP circuit cards to a single SP.

Two versions of the CMP circuit card are supported in V6.0 systems:

- AYC7 (supported in upgrades to V6.0)
- AYC7B (supported in upgrades to V6.0)

Each CMP circuit card can support a maximum of 4 channels of FlexWord speech recognition or 6 channels of WholeWord speech recognition.

NOTE:
A single SP circuit card can support a maximum of two CMP circuit cards.

Data Communications Circuit Cards

This section describes six types of data communications circuit cards:

- Synchronous circuit card
- Asynchronous circuit card
- Token Ring circuit cards
- Ethernet LAN circuit card
- PC/ISDN interface circuit card
- External alarms interface circuit card

Synchronous Circuit Card

The synchronous circuit card provides additional serial data connections on the system. These connections can be used to implement synchronous data communication between the system and a host computer.

The following synchronous host communication circuit cards are supported for V6.0:

- FIFO/SIB (installed in new sales of V6.0 platforms) — This circuit card replaces the PC/XL circuit card. One FIFO/SIB can support up to 128 host sessions or logical units (LUs). Two FIFO/SIB circuit cards are required for two physical links to host machines, although the total number of LUs may not exceed 128.
- PC/XL Revision D or later (supported for upgrades to V6.0) — This circuit card is no longer in production. Older PC/XL circuit cards sold prior to Revision D are *not* supported for use in V6.0.

  Because of interrupt and I/O-address conflicts, only *one* PC/XL is allowed per system.

  NOTE:
  A single PC/XL circuit card supports up to 128 LUs. This removes the need to support two PC/XL circuit cards for more than 32 LUs. However, if you must use two physical links to hosts, you *must* upgrade to two FIFO/SIB cards.

The synchronous host interface may also require the following equipment:

- RS-232-to-V.35 interface converter
- External modem
- RS-232 extension cable
- Other appropriate cables

For more information about the use of these circuit cards and the feature packages they support, see "Synchronous Host Interface" in Chapter 5, "Feature Packages".

Asynchronous Circuit Cards

The asynchronous circuit cards provide additional serial data connections on the system. These connections can be used to support asynchronous host computer links, multiple serial printers, on-site and remote monitoring systems, or extra modems.

The following asynchronous circuit cards are supported for V6.0:

- The IPC-900 circuit card (supported for upgrades to V6.0) — This circuit card is no longer in production. It requires a T-bar adapter to supply eight RJ-45 modular connections.
- The Gemini-1000 circuit card (supported for upgrades to V6.0) — This circuit card replaced the IPC-900. The Gemini-1000 circuit card is nearly identical to the IPC-900. It also requires a T-bar adapter to supply eight RJ-45 modular connections.
- Equinox MEGAPORT (installed in new sales of V6.0 platforms) — This circuit card is functionally equivalent to the IPC-900 and CTC Gemini-1000 circuit cards, but streamlines external connectivity by providing RJ-25 modular connectors on the faceplate of the circuit card. This eliminates the use of the T-bar adapter.

For more information about the use of these circuit cards and the feature packages they support, see "Multi-Port Asynchronous Communications Interface" in Chapter 5, "Feature Packages"

Token Ring Circuit Card

The token ring circuit card provides an open interface to remote system connectivity. The goal of this open interface is to allow your V6.0 system to be compatible with many different network environments. This token ring circuit card provides hardware support for a token ring LAN that enables TCP/IP and 3270 SNA networking protocols.

For more information about the use of this circuit card and the feature packages it supports, see "Synchronous Host Interface" and "Local Area Network Connectivity" in Chapter 5, "Feature Packages"

Ethernet LAN Circuit Card

The Ethernet LAN circuit card provides an interface for communication with other systems connected to a LAN using 10BASE-T (RJ-45 twisted pair connector), 10BASE2 (thin coax BNC connector), and AUI (thick coax DB-15 connector) interfaces. You can also use a 10BASE 5 connector if you attach a transceiver to the attachment unit interface (AUI).

The Ethernet LAN circuit card is software programmable, and an Ethernet device driver feature package is available to support Ethernet LAN circuit card installation on a V6.0 system. The Ethernet LAN circuit card takes advantage of the TCP/IP software that is part of the UnixWare operating system.

For more information about the use of this circuit card and the feature package it supports, see "Local Area Network Connectivity" in Chapter 5, "Feature Packages".

PC/ISDN Interface Circuit Card

This circuit card, also known as the IPCI circuit card, supports the D-channel basic rate interface from the switch for an Adjunct/Switch Application Interface (ASAI) link.

NOTE:
The PC/ISDN interface circuit card is supported for upgrades only.

For more information about the use of this circuit card and the feature package it supports, see "Adjunct/Switch Application Interface" in Chapter 5, "Feature Packages"

External Alarms Interface Circuit Card

This circuit card is used *only* in the MAP/100C platform. It provides eight alarm relay contact sets for activating external alarms. The external alarm relay contacts are triggered by maintenance messages from the system that are software controlled.

For more information on the use of this circuit card or the feature package it supports, see "External Alarms" in Chapter 5, "Feature Packages".

Optional Peripheral Equipment

The system platforms can interface with various types of standard and optional peripheral equipment.

See Chapter 4, "Connecting Peripherals and Powering Up," of the new system installation book specific to your platform for more details on peripheral connections to your MAP.

The peripheral equipment described in this section is not an exhaustive list of all devices capable of interfacing with MAPs. If you have compatible or like equipment that you would like to use with V6.0, discuss questions concerning specific peripheral equipment compatibility with a Lucent Technologies representative.

NOTE:
In some cases, Lucent Technologies does not provide or recommend a particular model or brand of each device when ordering. Customers must

inform their sales representative about the desired peripheral equipment during the planning of a new system. This section describes five types of optional peripheral equipment:

- Monitor
- Terminal emulation
- Keyboard
- Serial mouse
- Printer
- Modem

Monitor

A color monitor or remote terminal can be connected to any platform to provide a visual user interface.

Terminal Emulation

Terminal emulation packages allow customers to perform remote administration and allow Lucent Technologies personnel to troubleshoot V6.0 systems remotely.

The following terminal emulations are supported for V6.0:

- Terranova 4410
- Terranova 605

Keyboard

Lucent Technologies offers a standard 101-key keyboard.

Serial Mouse

A serial mouse is optional for use with the base system software. The system is completely operable and administrable without a mouse. A mouse is required, however, to take full advantage of the GUI features of UnixWare.

A serial mouse is required for the Graphical Speech Editor (GSE) and the FlexWord Toolkit. An Agilar AGM600E three-button serial mouse is supplied with those feature packages. It connects to the second serial port.

A serial mouse is optional for the Graphical Designer feature package and for some capabilities of Agent Assist Suites of Solutions.

Printer

A printer can be used to print hard copies of system screens and reports.

Table 2-8 lists the printers recommended for V6.0 system by country.

NOTE:
Some countries have more than one recommended printer.

Table 2-8. Printers Recommended for V6.0 System by Country

Printer	Country
220V Okidata OL810E	Argentina, Australia, Belgium, Brazil, France, Germany, Luxembourg, Netherlands, New Zealand, Spain, Thailand, United Kingdom
110V Okidata OL810E (Laser printer)	Brazil, Canada, Columbia, Mexico, US
110V Epson VP1800	Japan
110V Okidata OL810E Microline 320 (Dot matrix)	US

Modem

An external modem can be connected to the system to allow administrators, operators, or remotely located technical support personnel to initiate commands and remotely monitor the system for installation and maintenance purposes.

A modem is also used if asynchronous or synchronous communication with another machine or device is needed. In such cases, a modem is only used if the device is located too far away from the system to use a null-modem.

For new V6.0 systems in the US, an internal modem is dedicated to the remote maintenance circuit card. It is required by Lucent Technologies technical support personnel. A customer may also choose to supply an additional modem for their own use (for example, for file transfer).

Table 2-9 lists the modems recommended for V6.0 system by country.

Table 2-9. Modems Recommended for V6.0 System by Country

Paradyne Modem (Model No.)	Country
3810	Japan, Thailand, UK, Brazil
3820	Argentina, Canada, Columbia, Germany, Mexico
3910	Belgium, France, Luxembourg, Netherlands
3911	Australia, New Zealand, Spain
Practical Peripheral 9600SA	US

Hardware Upgrade Kits

Hardware upgrade kits allow you to upgrade your system to newer hardware technology, including P5 120-MHz central processing units (CPUs), Small Computer System Interface (SCSI) magnetic peripherals, and remote maintenance circuit cards. The hardware upgrade kits allow resource and feature improvements on an embedded MAP base hardware platform. There are different hardware upgrades to choose from, depending on the platform, peripherals, and remote maintenance circuit cards that are being updated.

The following types of upgrade kits are available for the V6.0 system:

- MAP/100C and MAP/100 P5 120-MHz CPU Upgrade Kits
- MAP/100C and MAP/100 SCSI Peripherals Upgrade Kits
- MAP/40 Upgrade Kits
- MAP100C and MAP100 486 CPU Upgrade Kit

MAP/100C and MAP/100 P5 120-MHz CPU Upgrade Kits

There are two versions of MAP/100C and MAP/100 P5 120-MHz CPU upgrade kits.

The first version of this upgrade kit allows any MAP/100C or MAP/100 platform with a 386 CPU and SCSI peripherals to be upgraded to a P5 120-MHz CPU with a remote maintenance circuit card.

The second version of this kit allows any MAP/100C or MAP/100 platform with a 386 or 486 CPU and SCSI peripherals to be upgraded to a P5 120-MHz CPU without a remote maintenance circuit card.

MAP/100C and MAP/100 SCSI Peripherals Upgrade Kits

There are two versions of MAP/100C and MAP/100 SCSI peripherals upgrade kits.

The first version of this upgrade kit allows any MAP/100C or MAP/100 platform with ESDI peripherals to be upgraded to a P5 120-MHz CPU with SCSI peripherals, and a remote maintenance circuit card.

The second version of this upgrade kit allows any MAP/100C and MAP/100 platform with ESDI peripherals to be upgraded to SCSI peripherals.

MAP/40 Upgrade Kits

There are five versions of MAP/40 upgrade kits.

The first version of this upgrade kit allows any MAP/40 platform with a 386 CPU and IDE peripherals to be upgraded to a P5 120-MHz CPU with SCSI peripherals and a remote maintenance circuit card.

The second version of this upgrade kit allows a MAP/40 platform with a 386 CPU and IDE peripherals to be upgraded to a P5 120-MHz CPU with SCSI peripherals and without a remote maintenance circuit card.

The third version of this upgrade kit allows the MAP/40 platform with a 486SX 25-MHz or a 486DX 50-MHz CPU with SCSI peripherals and a remote maintenance circuit card to be upgraded to a Pentium 120-MHz CPU with SCSI peripherals and a remote maintenance circuit card.

The fourth version of this upgrade kit allows any MAP/40 platform with a 386 CPU and IDE peripherals to be upgraded to a 486, 50-MHz CPU and SCSI peripherals.

The fifth version of this upgrade kit allows a MAP/40 using a 486SX 25-MHz CPU to be upgraded to a 486DX 50-MHz processor.

MAP/100C and MAP100 486 CPU Upgrade Kit

This upgrade kit allows any MAP/100C and MAP/100 platform with a 386 CPU and SCSI peripherals to be upgraded to a 50-MHz 486DX CPU with 16-Mbytes of memory.

For more information on upgrade kits, see *INTUITY™ CONVERSANT® System Version 6.0 Upgrade*, 585-310-183.

Hardware Upgrade Components

Some components in your pre-V6.0 system are now *obsolete*; that is they have been replaced in the V6.0 system by a newer component and are no longer supported. There are also components that did not change physically, but do require a change in configuration or setup for use with V6.0. These components are *reusable*. Other components in your system have been replaced in V6.0 by a newer component, but are still supported in upgrade situations and may be used without any physical or software changes.

This section describes:

- Obsolete components that you cannot reuse in V6.0
- Components that you can reuse without modification in V6.0
- Components that must be removed, replaced, or otherwise modified for use in V6.0

For more information on specific hardware component upgrades, see *INTUITY™ CONVERSANT® System Version 6.0 Upgrade,* 585-310-183.

Obsolete Components That You Cannot Reuse in Version 6.0

This section lists those components that may be part of your present system that are no longer supported and cannot be used in V6.0. These components are also included in Table 2-10 with replacement instructions.

- Hard disk drives
  - 135-Mbyte MAXTOR ESDI hard disk drive
  - 600-Mbyte MAXTOR ESDI hard disk drive
  - 600-Mbyte MAXTOR SCSI hard disk drive
  - 1.2-Gbyte MAXTOR SCSI hard disk drive
- Circuit cards
  - VDC600U video card
  - AYC1 analog circuit card

- AYC3 digital circuit card
- AYC2 speech processing circuit card
- EMULEX host interface card
- PC/PBX interface card
- Racal Interlan or STARLAN LAN cards
- IPC 802 serial port expansion card
- PC/XL host communication card prior to Revision D
- More than two SP circuit cards (AYC2C, AYC2B, or AYC9) in a P5 120-MHz CPU system on a MAP/100 or MAP/100C
- WDXLR831124 or 3124 video controller circuit cards in a P5 120-MHz system

Components That You Can Reuse without Modification in Version 6.0

This section lists reusable hardware items that require *no* physical or software changes for use in your V6.0 system.

NOTE:
These components are supported for upgrades only.

- 2-Gbyte Tandberg SCSI tape drive
- Hard disk drives
  - 1.7-Gbyte Micropolis SCSI hard disk drive
  - 2.0-Gbyte IBM Starfire hard disk drive
- Circuit cards
  - AYC6 IVP4 Tip/Ring circuit card
  - AYC5, AYC5B, AYC16, AYC26, and AYC27 IVP6 Tip/Ring circuit cards
  - AYC11 and AYC3B T1 circuit cards
  - AYC2B, AYC2C, and AYC9 SP circuit cards
  - AYC7 CMP circuit card
  - PC/ISDN interface (formerly known as IPCI) circuit card
  - IPC-900 or Gemini-1000 asychronous circuit card
  - External alarm circuit card (for use with MAP/100C only)
  - Brooktrout TR114-14L and TR110+14L fax circuit cards

Hardware Components That You Must Remove, Replace, or Modify in V6.0

Several previously supported configurations are discontinued in V6.0. Hardware upgrades are intended to make the migration from older, obsolete hardware to newer hardware as easy as possible. Table 2-10 identifies obsolete and reusable components and provides information on option settings (jumpers and switches) for each of the replacement components.

For instructions on removing components, see the applicable chapters in the maintenance book for your target system.

Table 2-10. Hardware Components That Must be Removed, Replaced, or Modified

If you have:	Then you must:
A 386 CPU	Upgrade to a P5 120-MHz CPU
A 486 CPU with BIOS earlier than version 2.1c *and/or* 16 Mbyte of memory	■ Update the BIOS to version 2.1c and add 16 Mbyte of memory to equal at least 32 Mbyte OR ■ Upgrade to a P5 120-MHz CPU
A P5 120-MHz CPU	Install electromagnetic interference (EMI) reduction components on any cables attached to the platform
ESDI or IDE components, including hard disk drives, cartridge tape drives, and controller cards	Upgrade to SCSI components
Wangtek SCSI tape drive(s)	Update the firmware on the tape drive(s) to 5525ES REV7 and add a jumper at JP2
A SCSI hard disk drive smaller than 1.7 Gbyte or with disk usage greater than 80%	Upgrade to larger SCSI hard disk drive and/or plan to add an additional hard disk drive
Dual/multiple SCSI hard disk drives on a pre-V5.0 system	Low-level format all non-boot SCSI hard disk drive(s)

Continued on next page

Table 2-10. Hardware Components That Must be Removed, Replaced, or Modified — *Continued*

If you have:	Then you must:
More than two SP circuit cards in your system *and* a P5 120-MHz CPU on a MAP/100 or MAP/100C	■ Replace the pre-series 8 SP circuit cards with the new series 8 version OR ■ Replace the pre-series 8 SP circuit cards with the appropriate number of SSP (AYC43) circuit cards
A WDXLR83160 video controller circuit card	Remove jumper block from JP3
A WDXLR831124 video controller circuit card *and* a 486 CPU	Remove jumper block from JP5
A WDXLR831124 video controller circuit card *and* a P5 120-MHz CPU	Replace the WDXLR831124 video controller circuit card with the STB Horizon
A WDXLR833124 video controller circuit card *and* a P5 120-MHz	Replace the WDXLR833124 video controller circuit card with the STB Horizon
One or more T1 circuit cards in your system and you plan to add a Token Ring circuit card	Reset the base I/O address switch settings on your V6.0 T1 circuit card(s) as specified by the output of the Hardware Resource Allocator program
A MAP/100C with a power supply manufactured prior to March 1, 1993 *and* you plan to have more than eight Tip/Ring circuit cards in your V6.0 system	Upgrade your power supply
Two PC/XL host communication cards for dual host connectivity	Replace both cards with FIFO/SIB cards
Two PC/XL host communication cards for support of more than 32 LUs to the same host	■ Remove one PC/XL card[1] (save it for a spare) OR ■ Remove both PC/XL cards and replace with one FIFO/SIB card

Continued on next page

Table 2-10. Hardware Components That Must be Removed, Replaced, or Modified — *Continued*

If you have:	Then you must:
A PC/XL host communication card prior to Revision D[2]	■ Replace with a PC/XL card Revision D (or later) OR ■ Replace with a FIFO/SIB card
An EMULEX host communication card	Replace with a FIFO/SIB card
An AYC3 T1 circuit card	Replace with an AYC11 T1 or AYC21 E1/T1 circuit card
An AYC2 SP circuit card	Replace with an AYC43 SSP circuit card
An AYC6 IVP4 Tip/Ring circuit card	Install the TDM upgrade for each IVP4 circuit card, if it is not already installed
An AYC1 VRS6 Tip/Ring circuit card	Replace with AYC28 IVP6 Tip/Ring circuit card or AYC30 NGTR circuit card
Racal Interlan and StarLAN circuit cards	Replace with Ethernet LAN circuit card
A DCP PC/PBX interface card[3]	Remove and do not replace

1. A single PC/XL (must be Revision D or later) can support up to 128 LUs in Version 6.0.
2. The correct version of this circuit card will have (1) either the letter “D” *handwritten* or the letter “E” *etched* on the back or solder side, and (2) a Zilog 85C30 (not an 8530) chip in the upper right corner of the front side.
3. AUDIX® Voice Power® is not supported in V6.0.

For specific information about these hardware upgrades, see *INTUITY™ CONVERSANT® System Version 6.0 Upgrade*, 585-310-183.

Resource Assignments, Limitations, and Maximums

This section provides the following hardware reference information:

- Hardware resource allocator
- Resource assignments for hardware components
- Guidelines for the addition of SCSI devices
- Circuit card maximums

Hardware Resource Allocator

The hardware resource allocator is contains the software program and all associated commands and files to allocate system resources to the hardware in your system. It also contains a "CONFIGURATION DATA" diskette on which you store your system's existing configuration. It is installed with the base system software

What the Hardware Resource Allocator Does

The hardware resource allocator enables you to determine the allocation of resources for all devices to be included in your configuration. This menu-driven program provides an automatic solution to the problem of allocating a finite set of consumable CPU resources to a given set of devices. It also includes some feature-related checking regarding maximum numbers of devices and prerequisites for devices.

The hardware resource allocator can be used to upgrade an existing configuration or to create a new configuration. Factory installers also use the hardware resource allocator to determine the initial hardware configuration and resource assignments. The hardware resource allocator works with any supported hardware platform.

⚠ CAUTION:
Only those persons familiar with the configurations and hardware platforms should run the hardware resource allocator.

Specifically, the hardware resource allocator helps you select the following resources allocation information for your software and hardware applications:

- System platform
- System memory
- System devices and their attributes including
  - — Slot number
  - — Interrupt level

— DMA channel

— I/O address

— RAM address

— Serial port usage

— Parallel port usage

NOTE:
The hardware resource allocator *does not* guarantee that every configuration it resolves is a valid configuration. It simply ensures that no conflicts exist between selected hardware devices for the parameters listed above.

Configuration Data Diskette

A diskette labeled “CONFIGURATION DATA” accompanies the hardware platform when it is shipped from the factory. This diskette contains the initial configuration information for your hardware, which you must load into the system.

Whenever you make a change to the current configuration, you must store that information on the “CONFIGURATION DATA” diskette so that the diskette always contains the latest configuration information. By using the “CONFIGURATION DATA” diskette in this manner, you will always have the correct configuration data on which to base subsequent changes to the system.

NOTE:
Be sure to store the “CONFIGURATION DATA” diskette in a safe place.

Configuration Data Files

The following data files are associated with the hardware resource allocator. These files reside in the **/vs/data** directory. Any reference to data files assume this prefix.

CAUTION:
Do not alter the contents of any of the data files below.

- The **conf_data** file represents a successful configuration. This file is also stored on the “CONFIGURATION DATA” disk after it has been read into the system.
- The **fail_data** file represents an unsuccessful configuration, to be viewed for resource allocation conflicts.

- The **conf_MMDDYY** file contains a copy of the current configuration file (**conf_data**) saved by the hardware resource allocator before it creates a new configuration. This allows for an historical reference of previous configurations by month (MM), day (DD), and year (YY).
- The **device_data** file stores the table of devices available for use in updating or creating new configurations.

For more information on the configuration commands you need to retrieve and save configuration information using the "CONFIGURATION DATA" disk, see "Summary of Commands," in Appendix A of *INTUITY™ CONVERSANT® System Version 6.0* Administration, 585-310-591.

For more information on how to operate the hardware resource allocator, see Appendix A, "System Configuration," in the maintenance book specific to your platform.

Resource Assignments for Hardware Components

Table 2-11 illustrates the resource assignments for each of the standard and optional hardware components supported in V6.0. This table is included only for reference. Values are listed for each resource in descending order of preference (beginning with first, then second and third, etc choices following).

NOTE:
Only the values supported by the V6.0 system, not the values supported by each hardware component, are listed. The hardware resource allocator program, described earlier in this chapter, has the complete set of values and determines appropriate settings based on the system configuration.

Table 2-11. Resource Assignments for V6.0 System Hardware Components

Component	IRQ	I/O Ports	RAM	Notes
CPU circuit card	13	00(256)–FF, 370	E0000 (128K)	
Diskette drive	6	3F0 (8)		DMA 2
Video circuit card (VGA)	N/A	3B0 (48)	A0000 (128K), C0000 (32K)	

Continued on next page

Table 2-11. Resource Assignments for V6.0 System Hardware Components — *Continued*

Component	IRQ	I/O Ports	RAM	Notes
Remote maintenance circuit card	4	180	C[C–F]000, D[0–F]000 (4K)	C[C-F] 000 will not work with P5 120-MHz CPU
CPU card parallel printer port	7	378 (8)		
CPU card serial port #1 (COM1)	4	3F8 (8)		
CPU card serial port #2 (COM2)	3	2F8 (8)		
On-board PCI SCSI or ISA SCSI	14		C8000 (16K)	SCSI DMA 5
IVP6, IVC6, NGTR circuit card	2, 15, 5	[1–3, 5–7, 9–B, D-F]00 (32/card)		Boards 0-11
SP circuit card	11	120–13F (4/card)	C00000–F80000 (512K/card)	Boards 0-7
CMP circuit card	N/A	N/A	N/A	
SSP circuit card	11	D20–D3F (8/card), 920–93F (8/card), 520–53F (8/card), 120–13F (8/card)		Boards 8-15
E1 circuit card, T1 circuit card	12	22[0246ACE] (2/card), 23[0246ACE] (2/card)		Boards 0-7

Continued on next page

Table 2-11. Resource Assignments for V6.0 System Hardware Components — *Continued*

Component	IRQ	I/O Ports	RAM	Notes
Equinox asynchronous circuit card			[CD][048C]000 (16K)	
IPC-900 and Gemini-1000 asynchronous circuit card	10, 15, 4	380[23][9-E]0 (16)	C[8ACE]000, D000 (8K)	
IPCI circuit card	3, 2		[D0, D8, CC]000 (16K)	
Brooktrout fax circuit card	10, 15, 3, 5, 7, 2	240, 260, 2C0 (32)	N/A	DMA 3
PC/XL synchronous circuit card	3, 5, 7	3[ABE]0, 2[ABE]0 (16)	[CD][048C]000 (16K)	
FIFO/SIB synchronous circuit card	10, 3, 5, 2, 11,12	380, 2[56BE]0, 3[AE]0 (16)		
Token/ring circuit card	2, 3	A20 (4)	DC000 (8K), [CD][048C]000 (16K)	
Ethernet LAN circuit card	15, 3, 5, 7, 10, 11, 2	2[02468ACE]0, 3[02]0 (32)	[CD][02468ACE] 000 (16K)	
PCI LAN circuit card	12,11,10,2	N/A	N/A	
Serial mouse	N/A	N/A	N/A	COM port required

Guidelines for the Addition of SCSI Devices

SCSI architecture lets you put a *maximum* of seven devices on a SCSI bus. (For example, the CPU is counted as the eighth device in the MAP/100 CPU.) We supply bays for some or all of those seven devices, subject to size and power limitations noted below. The remaining devices may be mounted externally.

NOTE:
The last device on the SCSI bus *must* be terminated.

Guidelines for the addition of SCSI devices to the MAP/100C, the MAP/100, and the MAP/40 are as follows:

Addition of SCSI Devices to MAP/100C

The MAP/100C platform has six bays. One is occupied by a tape drive and another is occupied by a hard disk drive in a standard configuration. The remaining bays may be used for any SCSI device supported by UnixWare with the following guidelines:

- When installing devices, install only one per vertical shelf pair. If this is not possible, the power dissipation of a device per shelf must not exceed 14 watts. If any device dissipates more than 14 watts, it *must* reside in the vertical shelf pair alone.
- The total power dissipation within the peripheral bay *must not exceed* 80 watts for the fans to adequately remove the heat.

Addition of SCSI Devices to MAP/100

The MAP/100 platform has eight bays. One is occupied by a tape drive and another is occupied by a hard disk drive in a standard configuration. The remaining bays may be used for any SCSI device supported by UnixWare with the following guidelines:

- When installing devices, leave open shelves between them. If this is not possible, the power dissipation of a device per shelf must not exceed 14 watts. If any device dissipates more than 14 watts, it *must* have a vacant shelf above it.

  The total power dissipation within the peripheral bay *must not exceed* 95 watts for the fans to adequately remove the heat.
- Some MAP/100 systems were shipped with a minimum of peripheral bay disk power cables. Check your MAP/100 to see if you need additional cables. They may be ordered by comcode 406664946.

Addition of SCSI Devices to MAP/40

The MAP/40 platform has four bays. One is occupied by a tape drive and another is occupied by a hard disk drive for the standard configuration. The remaining locations may be used for any SCSI device supported by UnixWare with the following restriction:

- The device *must not* have power dissipation in excess of 14 watts.

Addition of SCSI Devices to MAP/5P

The MAP/5P platform supports a tape drive and a hard disk drive for the standard configuration. Optionally, a second hard disk drvie may be added.

Circuit Card Maximums

Table 2-12 identifies all of the standard and optional circuit card types and lists how many can be installed in each platform:

NOTE:
The circuit card maximums listed in Table 2-12 are in many cases logical limits and do not necessarily represent the actual physical limits on the system.

Table 2-12. Circuit Card Maximums

Circuit Card	MAP/5P	MAP/40	MAP/100C and MAP/100	Connect to TDM Bus?	Notes
Body					
P5120-MHz CPU	N/A	1	1	No	
486 CPU	N/A	1	1	No	
SCSI host adapter	1	1	1	No	Not required with P5 120-MHz CPU
Video	N/A	1	1	No	
Remote maintenance	1	1	1	No	
Ethernet LAN	1	1	1	No	
PCI LAN	1	0	2	No	
PC/XL		1	1	No	

Continued on next page

Table 2-12. Circuit Card Maximums — *Continued*

Circuit Card	MAP/5P	MAP/40	MAP/100C and MAP/100	Connect to TDM Bus?	Notes
FIFO/SIB	1	2	2	No	
Token ring	1	1	1	No	
Multi-port asynchronous	1	1	1	No	
Tip/Ring	4	8	12	Yes	
T1		5	5	Yes	Must be AYC21, AYC11, or AYC3B
E1		3	3	Yes	Must be AYC21
SP on a P5 120-MHz CPU		2	2 or 8[1]	Yes	Must be either AYC2C (Series 0-8) or AYC9 (Series 8)or AYC2B
SP on 486 CPU		7	8	Yes	
Companion		4	8	No	A maximum of 2 CMP circuit cards can be associated with each SP circuit card.
SSP		7	8	Yes	
PC/ISDN interface		1	1	No	
Brooktrout fax	2	3	3	No	Must be Brooktrout TR114+I4L or TR114-I4L
External alarms			1	No	Only available on MAP/100C

1. A MAP/100C or MAP/100 with a P5 120-MHz CPU must have an updated AYC2C (Series 0-8) or AYC9 (Series 8) if more than 2 SP circuit cards are required.

Software

3

Overview

A number of software packages, including the UnixWare 1.1.2 operating system and the V6.0 base system, are included when you purchase a V6.0 system. In addition, optional V6.0 feature packages are available and are often implemented with some combination of optional hardware and software.

NOTE:
The information in this chapter reflects the software packages for INTUITY CONVERSANT system Version 6.0 Update 1.

This chapter describes the following system software:

- UnixWare operating system
- V6.0 system base software
- V6.0 system optional software

NOTE:
To see a list of what software is installed in your system, use the **pkginfo** command. See the **pkginfo** command in Appendix A, "Summary of Commands," in *INTUITY™ CONVERSANT® System Version 6.0 Administration*, 585-310-591.

Purpose

The purpose of this chapter is to

- Describe the operating system software, base software, and optional software.
- List the software packages, media, and installation status for each type of software.

UnixWare 1.1.2 Operating System

All of the UnixWare software listed in Table 3-1 is standard with the V6.0 system. The UnixWare operating system is the software platform upon which all of the system software (including feature packages and applications) runs. Included within UnixWare are additional files including peripheral and networking utilities, software programming packages, and electronic documentation. Two packages from VERITAS are provided in conjunction with the operating system. These packages allow the manipulation of the UNIX file system and control of the hard disk drive partitions.

Table 3-1 lists the UnixWare 1.1.2 base software packages:

Table 3-1. UnixWare 1.1.2 Base Software

Package Name	Media	Installation Status
UnixWare for INTUITY™CONVERSANT® Boot Floppies	3 diskettes	Required
UnixWare for INTUITY CONVERSANT Emergency Boot Floppy	1 diskette	Required
UnixWare for INTUITY CONVERSANT	On Tape #1	Required
UnixWare 1.1.2 Enhancement Set for INTUITY CONVERSANT ■ UnixWare 1.1.2 Platform Enhancements Extension ■ UnixWare Installit Utility ■ UnixWare Memory Driver Edition C (CMemdrvr) from Microport ■ UnixWare Process Driver V1 from Microport ■ UnixWare Year 2000 Updates	On Tape #1	Required
VERITAS File System	1 diskette	Required
VERITAS Volume Manager	4 diskettes	Required
Token Ring Hardware Support	1 diskette	Optional

Brief descriptions of some of the UnixWare base software items listed in the preceding Table 3-1 are listed below:

- UnixWare for INTUITY, UnixWare Guides 1.1.2, and UnixWare Enhancement Set (on Tape #1)

  These installable packages provide the base operating system along with key peripheral and user interface utilities. The guides contain a complete set of on-line documentation for UnixWare. The software development set and utilities package are tools that help an application developer create script applications. These files include packaging tools, on-line manuals, command libraries, and demos. Installation of these software packages is required.

- VERITAS File System and VERITAS Volume Manager

  These packages provide the capability of changing file system sizes dynamically without disrupting services. This dynamic sizing is useful for increasing and decreasing the database or speech file system sizes after the system is initially configured. Volume Manager also provides support for mirroring by keeping identical copies of individual file systems on disks that are mirrored. Installation of these software packages is required.

  NOTE:
  The root file system may *not* be changed dynamically without disrupting voice system services. ORACLE resides under the root file system.

V6.0 System Base Software

This base software acts as a foundation for the rest of the system and provides an environment for the execution of the application software running on the platform. It contains all major process-related, maintenance-related, and operations-related software utilities and subsystems such as: tas, tsm, alerter, logger, mtc, administration, ad, cdh, rm, IRAPI, lib, vrop, and dio.

NOTE:
All base software packages are licensed on a per-machine basis.

Table 3-2 lists the software packages that are standard with each new or upgraded V6.0 system purchase. Each of these software packages is included on Tape #2.

Table 3-2. INTUITY CONVERSANT System V6.0 Base Software

Package Name	Installation Status
INTUITY CONVERSANT System V6.0 Set	Required
■ INTUITY CONVERSANT Utilities Package	Required
■ INTUITY CONVERSANT Runtime Processing Package	Required
■ INTUITY CONVERSANT Maintenance Package	Required
■ INTUITY CONVERSANT Logger/Alerter Package	Required
■ INTUITY CONVERSANT AUDIX Logger Package	Required
■ INTUITY CONVERSANT Base ORACLE RDBMS 7.1.3	Required
■ INTUITY CONVERSANT ORACLE 7 Integration Package	Required
■ INTUITY CONVERSANT Administration Screens Package	Required
■ INTUITY CONVERSANT Platform Tuning	Required
■ INTUITY CONVERSANT Transaction State Machine Package	Required
■ INTUITY CONVERSANT Switch Utilities Package	Required
■ INTUITY CONVERSANT License Modification Package	Required
■ INTUITY CONVERSANT Extended ORACLE RDBMS 7.1.3	Optional

The following packages are provided as part of the INTUITY CONVERSANT system V6.0 base software, but are not included on Tape #2.

- INTUITY CONVERSANT Hardware Resource Allocator
- INTUITY CONVERSANT Configuration Data Diskette (created during factory assembly

Brief descriptions of some of the software listed in the preceding Table 3-2 are listed below:

- Base ORACLE Relational Database Management (RDBMS) System 7.1.3

  This software package that allows a V6.0 system user to establish and maintain a local ORACLE RDBMS on the system. Other optional ORACLE software packages are used to enhance or extend the operation of the standard ORACLE database. Installation of this package is required.

- Extended ORACLE RDBMS 7.1.3

  This software is an extension of the base ORACLE RDBMS that provides additional utility packages, libraries, and header files not contained in the base ORACLE software. Installation of this package is optional.

V6.0 System Optional Software

Table 3-3 lists the optional V6.0 system software packages available for use with the system. Most of the software packages listed are directly related to a particular system feature package. The relationships between features and feature packages is discussed in Chapter 4, "Features," and Chapter 5, "Feature Packages."

NOTE:
Previous system releases have offered speech technologies on a per system basis. V6.0 offers speech technologies, such as WholeWord Speech Recognition, FlexWord™ Speech Recognition, Text-to-Speech, and Dial Pulse Recognition on a *channels per system* basis. See Chapter 5, "Feature Packages" for descriptions of some of the optional feature packages.

Table 3-3 lists the optional software packages available for the V6.0 system.

Table 3-3. INTUITY CONVERSANT System V6.0 Optional Software

Package Name	Media
INTUITY CONVERSANT FlexWord Toolkit	Diskette
INTUITY CONVERSANT Adjunct/Switch Application Interface (ASAI) Package	Diskette
INTUITY CONVERSANT CALLVISOR PC ASAI Package	Diskette
INTUITY CONVERSANT CALLVISOR PC ISDN Package	Diskette
INTUITY CONVERSANT ASP Driver Package	Diskette

Continued on next page

Table 3-3. INTUITY CONVERSANT System V6.0 Optional Software — *Continued*

Package Name	Media
INTUITY CONVERSANT CGS Asynchronous Host Toolkit	Diskette
ASYNC_TEST Transactions Script Builder Backup	Diskette
ASYNC_TEST Speech Script Builder Backup	Diskette
INTUITY CONVERSANT Call Classification Analysis Package	Diskette
INTUITY CONVERSANT Form Filler Application	Diskette
INTUITY CONVERSANT 3270 Enhanced File Transfer Package	Diskette
INTUITY CONVERSANT Feature Test Script Package	Diskette
INTUITY CONVERSANT Intelligent Ports Card	Diskette
INTUITY CONVERSANT Graphical Speech Editor	Diskette
INTUITY CONVERSANT T1 E&M Package	Diskette
INTUITY CONVERSANT Line Side E1 Package – DEFINITY® ECS	Diskette
INTUITY CONVERSANT Line Side T1 Package – DEFINITY ECS	Diskette
INTUITY CONVERSANT Line Side T1 Package – GALAXY	Diskette
INTUITY CONVERSANT E1 CAS P2 Interface Package – Australia	Diskette
INTUITY CONVERSANT E1 CAS R2-MFC Interface Package – Mexico	Diskette
INTUITY CONVERSANT 3270 NetView Alarm Interface Package	Diskette
INTUITY CONVERSANT Advanced PRI Package	Diskette
INTUITY CONVERSANT SQL*NET TCP/IP for ORACLE 7.1.3	Diskette
INTUITY CONVERSANT Platform Upgrade Assistance Package	Diskette
INTUITY CONVERSANT ISDN Primary Rate Interface Package	Diskette
INTUITY CONVERSANT External Alarms Package	Diskette
INTUITY CONVERSANT RMB Integration Software Version 1.0	Diskette
INTUITY CONVERSANT Script Builder	Diskette
INTUITY CONVERSANT Script Builder FAX Actions	Diskette
INTUITY CONVERSANT Switch Utilities Package	Diskette
INTUITY CONVERSANT Synchronous Host Interface Package	Diskette
INTUITY CONVERSANT T1/E1 Board Driver	Diskette
INTUITY CONVERSANT Tip/Ring Board Driver	Diskette

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Table 3-3. INTUITY CONVERSANT System V6.0 Optional Software — *Continued*

Package Name	Media
INTUITY CONVERSANT Text-to-Speech Package	Diskette
INTUITY CONVERSANT Call Bridge Application Package	Diskette
Equinox Megaport/Megaplex STREAMS Device Driver (ISA/EISA0)	Diskette
Remote Maintenance Board Package	Diskette
SMC LAN Adapter Setup Program	Diskette
SMC Ethernet STREAMS Device Driver SVR4.2 (Lachman TCP/IP)	Diskette
SMC EtherPower Device Driver PCI (UnixWare 1.1)	Diskette
INTUITY CONVERSANT Dial Pulse Recognition Package	Diskette
INTUITY CONVERSANT CLEO LINKix 3.0 linkix_coproc, Link Level (3.0.2.1) linkix_coproc, Link Level, Supplement 05 linkix_3270, Feature Level 1, Supplement 05 linkix_hte, Feature Level 2, Supplement 03 linkix_3270, Feature Level 1 (3.0.2.3) linkix_hte, Feature Level 2 (3.0.2.7) linkix_mgmt, Feature Level 1 (3.0.2.0) linkix_netman, Feature Level 1 (3.0.2.0) linkix_sib, Link Level (3.0.2.1) linkix_sib, Link Level, Supplement 09 linkix_sna, SNA Level, Supplement 03 linkix_sna_128lu, SNA Level (3.0.3.0) linkix_tkrn, Link Level (3.0.2.5) linkix_tkrn, Link Level, Supplement 02	Tape #4
ORACLE Development Tools PRO*C 1.6.4.2 SQL*FORMS/MENU 3.0.16.12. SQL*ReportWriter 1.1.14.7.2	Tape #5
INTUITY Backup/Restore Utilities	Diskette
Enhanced Software Technologies Backup/Restore	Diskette

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Table 3-3. INTUITY CONVERSANT System V6.0 Optional Software — *Continued*

Package Name	Media
INTUITY Unix Management Screens Package	Diskette
INTUITY CONVERSANT WholeWord Recognition – Base	Diskette
INTUITY CONVERSANT WholeWord Recognition – US English	Diskette
INTUITY CONVERSANT WholeWord Recognition – Canadian French	Diskette
INTUITY CONVERSANT WholeWord Recognition – Latin-American Spanish	Diskette
INTUITY CONVERSANT WholeWord Recognition – Brazilian Portuguese	Diskette
INTUITY CONVERSANT WholeWord Recognition – UK English	Diskette
INTUITY CONVERSANT WholeWord Recognition – Australian English	Diskette
INTUITY CONVERSANT WholeWord Recognition – German	Diskette
INTUITY CONVERSANT WholeWord Recognition – Castilian Spanish	Diskette
INTUITY CONVERSANT WholeWord Recognition – Japanese	Diskette
INTUITY CONVERSANT WholeWord Recognition – French	Diskette
INTUITY CONVERSANT WholeWord Recognition – Dutch	Diskette
INTUITY CONVERSANT FlexWord Recognition – Base	Diskette
INTUITY CONVERSANT FlexWord Recognition – US English	Diskette
INTUITY CONVERSANT FlexWord Recognition – Japanese	Diskette
INTUITY CONVERSANT FlexWord Recognition – French	Diskette
INTUITY CONVERSANT FlexWord Recognition – German	Diskette
INTUITY CONVERSANT FlexWord Recognition – Spanish	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – US English	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (male voice) – US English	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – UK English	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – Australian English	Diskette

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Table 3-3. INTUITY CONVERSANT System V6.0 Optional Software — *Continued*

Package Name	Media
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – Dutch	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – French	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – Canadian French	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – Brazilian Portuguese	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – Japanese	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – Latin-American Spanish	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – Castilian Spanish	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – German	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – Mandarin Chinese	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – Cantonese Chinese	Diskette
INTUITY CONVERSANT Enhanced Basic Speech (female voice) – Hindi	Diskette
INTUITY CONVERSANT Analog Switch Package – Argentina	Diskette
INTUITY CONVERSANT Analog Switch Package – Australia	Diskette
INTUITY CONVERSANT Analog Switch Package – Belgium	Diskette
INTUITY CONVERSANT Analog Switch Package – Brazil	Diskette
INTUITY CONVERSANT Analog Switch Package – Canada	Diskette
INTUITY CONVERSANT Analog Switch Package – Columbia	Diskette
INTUITY CONVERSANT Analog Switch Package – France	Diskette
INTUITY CONVERSANT Analog Switch Package – Germany	Diskette
INTUITY CONVERSANT Analog Switch Package – Hong Kong	Diskette
INTUITY CONVERSANT Analog Switch Package – Ireland	Diskette

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Table 3-3. INTUITY CONVERSANT System V6.0 Optional Software — *Continued*

Package Name	Media
INTUITY CONVERSANT Analog Switch Package – Japan	Diskette
INTUITY CONVERSANT Analog Switch Package – Luxembourg	Diskette
INTUITY CONVERSANT Analog Switch Package – Mexico	Diskette
INTUITY CONVERSANT Analog Switch Package – Netherlands	Diskette
INTUITY CONVERSANT Analog Switch Package – New Zealand	Diskette
INTUITY CONVERSANT Analog Switch Package – Spain	Diskette
INTUITY CONVERSANT Analog Switch Package – Thailand	Diskette
INTUITY CONVERSANT Analog Switch Package – UK	Diskette
INTUITY CONVERSANT Analog Switch Package – US	Diskette

For descriptions of some of the optional feature packages, see Chapter 5, ‘‘Feature Packages’’.

Features

4

Overview

A *feature* can be software and/or hardware in nature. It is standard with each system purchase. Some features require nothing additional to be completely functional. However, some features may require the addition of a feature package to be more complete or advanced. This section presents a detailed description of the features available with the V6.0 system.

Purpose

The purpose of this chapter is to explain the standard features of the system, including:

- Open interface
- Available user interfaces
- Application development options
- Voice response functions
- System status and monitoring
- Available speech capabilities
- Communications interfaces
- Data network options
- Database environment provided by ORACLE
- SCSI disk mirroring feature

Open Interface

The V6.0 system moves towards providing you with more open solutions. As used here, the term *open* means both adherence to industry standards and the ability to integrate hardware and software provided by third-party providers.

The benefit to you is that you can buy hardware and software that is not provided with your V6.0 to enhance system applications. The following provides guidelines regarding the specifications for the V6.0 open interfaces.

SCSI

See "Guidelines for the Addition of SCSI Devices" in Chapter 2, "Hardware" for specific information on SCSI architecture.

Numerous references on the SCSI interface are available:

- ANSI X3.131. Title: *Information Systems – Small Computer System Interface*
- BS EN 29316. Title: *1991 Information Processing Systems – Small Computer System Interface* (SCSI) (ISO 9316: 1989)
- ISO 9316. Title: *Information Processing Systems – Small Computer System Interface* (SCSI)
- ISO DIS 9316. Title: *Information Processing Systems – Small Computer System Interface* (SCSI)

Users of this interface will also want to consult UnixWare system administration documents that discuss software administration in support of SCSI peripherals.

Finally, users of this interface must make sure that their MAP platform provides adequate physical space, power supply, cooling, etc for the SCSI peripherals to be added. These specifications vary for each MAP platform. See Chapter 6, "Requirements and Specifications" for more information on platform specifications. Consult these specifications and also be familiar with the specifications (power demand, heat dissipation, etc.) for the SCSI devices you want to add.

UnixWare

In moving to UnixWare 1.1.2 in V5.0, the underlying operating system became more standardized. Customers and developers may now more easily tailor and enhance their total system via the interfaces UnixWare provides. Increased standardization ultimately increases the ability to use and control the product.

At the highest level, UnixWare allows customizing via its system administration capabilities, its shell interfaces, its programming development environments, and its networking interfaces. UnixWare documentation is the starting point for

definition of these interfaces. There is also supplemental information available throughout the industry.

A book jointly published by Sybex and SCO, *Guide To UnixWare 1.1*, Chris Negus and Larry Schumer, ISBN 0-7821-1292-7, also provides information regarding UnixWare's open interfaces. The following are actual specifications that define the interfaces provided by UnixWare 1.1.2:

- IEEE P1003.1-1988 POSIX (Portable Operating Systems Interface for Unix) System V Interface Definition: (various publishers)
- ANSI X3J11 C Language Specifications
- Intel Application Binary Interface Specification (maintained by SCO, adherence to this specification ensures that compiled applications are compatible with UnixWare on Intel platforms)

IRAPI

See ''Application Development'' later in this chapter for more information on IRAPI.

ORACLE

See Chapter 3, ''Software'' for more information on ORACLE.

HLLAPI

HLLAPI is an IBM-standard interface that allows the user to write a program to communicate with a host computer using the 3270 data stream protocol. The Script Builder Send and Get Screen Actions are implemented with the HLLAPI interface, and provide most voice system users with a convenient high level interface to their host computer.

A full HLLAPI library, provided by CLEO Communications, is also available for customers who want to create their own custom DIPs. Development of a custom DIP requires INTUITY™ CONVERSANT® system expertise, as well as detailed knowledge of the host application.

Detailed information on the HLLAPI interface can be found in the *HLLAPI Programmer's Guide*, 585-310-912.

User Interfaces

This section discussed the various ways that a user can interface with the system.

NOTE:
Not all user interfaces are available for all software packages.

Graphical User Interface

A graphical user interface (GUI) provides access to applications running on the system through the use of icons and windows. Systems equipped with a mouse provide system administration functions from the desktop GUI.

The V6.0 system has four packages that are GUI:

- UnixWare 1.1.2 (a mouse may be used)
- Graphical Speech Editor (a mouse is standard)
- FlexWord™ Toolkit (a mouse is standard)
- Graphical Designer (a mouse may be used)

UnixWare

A system installed with UnixWare 1.1.2 is fully capable of providing a variety of GUI environments within which to work. All systems are loaded with UnixWare graphics capabilities necessary to support the built-in UnixWare Desktop GUI, or the native X-windows and Motif GUI. On-line documentation is provided through the UnixWare Fingertip Librarian that explains how to make use of these different GUI interfaces.

It is the customer's responsibility to install and configure a mouse to use with UnixWare. See "Serial Mouse" in Chapter 2, "Hardware" for more information.

Graphical Speech Editor and FlexWord Toolkit

These packages take advantage of the more advanced GUI capabilities such as X-windows and Motif GUI.

Graphical Designer

With Graphical Designer you can work within a standard GUI environment and create applications on your Windows-based PC, instead of performing application development on your V6.0 system.

Command Line

The command line user interface is initiated from the system's UnixWare prompt. Though most operations can be accomplished through the **cvis_menu** screens, you can invoke certain operations from the command line. Valid and supported V6.0 commands are documented in *INTUITY™ CONVERSANT® System Version 6.0 Administration*, 585-310-591.

Screens

The screen user interface is invoked by first using the **cvis_menu** command or **sysadm** command. These commands take users into a series of menus and screens from which they can perform various system operations, such as adding users, running reports, etc. This interface is provided also for system administrators who do not have access to or choose not to use a mouse.

Application Development

As discussed in Chapter 1, ''Introduction'' automated transactions are known as *applications*. Each application is designed and developed to meet a specific customer's need. An application *script* is a set of instructions written for the system that informs it how to carry out the automated transaction. Scripts define the flow of the call and determine what the caller hears and how the caller responds to the system.

For more information, see *INTUITY™ CONVERSANT® System Version 6.0 Application Design Guidelines,* 585-310-670.

In V6.0, there are four mechanisms for developing applications:

- Graphical Designer
- Script Builder
- TAS Script
- INTUITY Response Application Programming Interface (IRAPI)

Graphical Designer

The Graphical Designer is an optional feature package that allows you to design applications in the V6.0 system by specifying every detail of the interaction between the system and its callers. Once you design your application, you can use the Graphical Designer to test, generate, transfer, and install it. In addition, you have the ability to develop language-independent applications, as well as work with more than one language.

For more information, see Chapter 5, "Feature Packages," and *INTUITY™ CONVERSANT® System Application Development with Graphical Designer*, 585-310-764.

Script Builder

Script Builder is designed to assist in the development of custom voice response applications on the system. It is a menu-driven, screen-oriented tool that can be used by a broad range of customers. It is targeted toward designers familiar with the specific application, who also have a knowledge of logical programming concepts. Specifically the designer should be familiar with typical programming methods used in languages such as BASIC, COBOL, Pascal, and C language. Experience with a database application such as dBASE, LOTUS 1-2-3, or ACCESS is also helpful. Although not required, it is helpful to have some basic knowledge of the UnixWare operating system and telephony when working with the system and Script Builder.

For more information, see *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder,* 585-310-760.

TAS Script

TAS script, formerly called Native Script, is an assembly-type instruction language. A sequence of instruction calls run within the generic TSM software that manage the low level interactions required to operate the system. At any time, TAS can be used to assemble, load, change, or replace a script without affecting the other scripts running on TSM or other IRAPI programs running the system.

For more information, see *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Advanced Methods,* 585-310-761.

INTUITY Response API

Sophisticated developers have requested a C-language interface to develop system applications that can be directly integrated with the other features of the UnixWare system. IRAPI is a C-language interface that offers users the capabilities offered by the system script language — ability to play and code phrases, collect touch-tone digits, answer incoming calls, generate outgoing calls, etc. — from a C-language program.

In addition, IRAPI *within the system* reduces the role and structure of TSM. The reduced TSM has been completely recoded in terms of the IRAPI, and compatibility with Script Builder and older scripts is maintained. The Resource Manager (RM) manages the resources and the Application Dispatch (AD) process controls the dispatching of applications with some help from the IRAPI library.

IRAPI is delivered with every V6.0 system as a C library. Users write C programs, compile them using the standard C compiler, and link these objects against the IRAPI library to create UnixWare processes. Applications written using the IRAPI coreside with script applications. IRAPI applications can execute a TSM script language program or Script Builder application. Script Builder applications and script language applications can also execute IRAPI applications.

For more information, see *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Advanced Methods*, 585-310-761.

Voice Response Functions

The system is capable of many voice response functions without the installation of additional software. Although most of these functions can be accomplished through a script instruction in the script language, using the Script Builder package will simplify the writing of the script.

This section discusses the most common functions used in a voice response application. See *INTUITY™ CONVERSANT® System Version 6.0 Application Design Guidelines*, 585-310-670, for more information on script instructions. See *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760, for more information on Script Builder applications.

Announce

The system uses the Announce step in Script Builder to speak to the caller. Up to 15 phrases, values, and/or lines of text (from Text-to-Speech) may be played in succession in a single Announce action step.

NOTE:
Announce may be referred to as *Whisper* when it is used with the intelligent transfer feature.

Answer

The script instruction called **tic('a')** can answer the line or take the line off-hook. This may also be accomplished by using the Answer Phone action step in Script Builder.

Background

Background connects a caller to background music or speech that has been prerecorded and installed on the system. The Background action step in Script Builder can play background music or speech.

Call Transfers

Call transfer is used to transfer the caller to another telephone number, which is referred to here as a third party. Three types of call transfers are available: blind transfer, intelligent transfer, and Full Call Classification Analysis (Full CCA).

NOTE:
Blind transfer and intelligent transfer types are standard features of the V6.0 system. Full CCA is available as an optional feature package in the US only. For more information on Full CCA, see Chapter 5, ''Feature Packages''

All types of transfers may be used during a single call. All types allow the application to transfer the caller to a third party, using the transfer and/or three-way calling feature of the private branch exchange.

Because the call transfer feature uses the transfer capability of the private branch exchange, you are limited to transferring to telephone numbers within the capacity of the private branch exchange. Consequently, some private branch exchanges are limited in the numbers to which they can transfer.

Transfers are accomplished by using the **tic** script instructions (with several different options) or the Transfer Call action step in Script Builder.

NOTE:
Transfer capabilities are *not* provided with voice channels that are serviced by trunks, such as T1 channels. Callers using AYC11 or AYC3B circuit cards in a Line Side T1 configuration can accomplish blind transfers *only*.

For more information on AYC21 circuit card call transfer capabilities, see the ''Intelligent Transfer'' section.

Blind Transfer

In a blind transfer, the application dials the third-party number to start the transfer and then relinquishes all call handling responsibilities. In other words, in a blind transfer, the transfer call is placed and then the caller is released. The caller is left to deal with a busy signal or a no answer signal. The call is completed as soon as the third-party number is dialed without waiting to see the outcome.

Intelligent Transfer

In an intelligent transfer, the application dials the third-party number to start the transfer and then listens to the call progress signals to determine if the line is busy, ringing, or has been answered. In other words, in an intelligent transfer, the transfer call is placed and then the system classifies the call. The capabilities provided by intelligent call classification analysis (CCA) are standard with each system purchase, and provide a rudimentary voice-energy detector for

identifying answered calls. Intelligent CCA is needed to make call transfers and call bridges, as described in *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760.

Applications created with earlier versions of software that use Intelligent CCA are compatible with V6.0 software.

NOTE:
An enhanced level of call classification, Full CCA, is available as an optional feature package in the US only. It is described in Chapter 5, "Feature Packages".

Intelligent CCA on Tip/Ring Circuit Cards

Intelligent CCA on Tip/Ring circuit cards recognizes the following call progress tones:

- Answer detected via speech energy detection
- Answer supervision from switch via dual tone multi-frequency Feedback Tones

  NOTE:
  In order for this call progress tone to be recognized the system must be connected to DEFINITY® Enterprise Communications Server and the optional Sending DTMF Feedback Tones to the VRU feature must be administered.

- Dial-tone
- Stutter dial-tone
- Busy
- Fast busy (reorder)
- Intercept tone for invalid extension (on DEFINITY Enterprise Communications Server or other private branch exchange)
- Ring no answer
- Touch-tone entry detected
- Internal hardware or software error, dialing error, or unexpected private branch exchange response
- Timeout
- Illegal dial string

Intelligent CCA on Line Side T1 – DEFINITY ECS and Line Side E1 – DEFINITY ECS on the AYC21 Circuit Card

Intelligent CCA on Line Side T1 DEFINITY ECS and Line Side E1 DEFINITY ECS on the AYC21 circuit card recognizes the following call progress tones:

- Answer detected via speech energy detection
- Answer supervision from switch via DTMF Feedback Tones (also available on the AYC11 circuit card)

  NOTE:
  In order for this call progress tone to be recognized the system must be connected to DEFINITY Enterprise Communications Server and the optional Sending DTMF Feedback Tones to the VRU feature must be administered.

- Dial-tone
- Stutter dial-tone
- Busy
- Fast busy (reorder)
- Intercept tone for invalid extension

  NOTE:
  You can detect the intercept tone using Intelligent CCA on an AYC21 circuit card with Line Side T1 or Line Side E1, but the tone will *not* be detected on AYC11 or AYC3B circuit cards, even with Full CCA.

- Ring no answer
- Touch-tone entry detected (also available on the AYC11 circuit card)
- Internal hardware or software error, dialing error, or unexpected private branch exchange response (also available on the AYC circuit card)
- Timeout (also available on the AYC11 circuit card)
- Illegal dial string (also available on the AYC11 circuit card)

For private branch exchanges that allow outside transfers, the network tones received may vary and may not be recognized correctly by the intelligent transfer feature. This results in some network tones being recognized as an answer and the caller being dropped from the system. Intercept tones used by private branch exchanges for invalid extensions are included in the V6.0 system.

Call Bridge

Call bridge allows an application to place an outbound call to a third party and maintain the connection while the caller interacts with the third party. When the third party hangs up, the script continues with the next action step. The call bridge feature is used most often when call transfer is not available on the private branch exchange or central office.

This connection to a third party is accomplished through the **hbridge** TAS script instruction or the Call_Bridge action step in Script Builder.

Disconnect

Disconnect or hang-up, disconnects the system from the caller. It is accomplished through the **tic('h')** script instruction or the Disconnect action step in Script Builder.

NOTE:
Disconnecting the call does not stop the execution of the application script. An application terminates execution when it reaches a Quit instruction.

Originate

An application may be set up to place or originate calls. Originate is accomplished using the **tic('O')** and **tic('o')** script instructions or the Make Call action step in Script Builder. As an example, this application can be used by the system to conduct a survey of all customer numbers stored in a database.

Converse Vector Step

Converse vector step (CVS) is used in DEFINITY ECS private branch exchanges to maintain control of a call while capabilities of the system are being used. The system provides a Script Builder external action called *converse_data* that supports the converse vector step capability on Tip/Ring, Line Side E1, and Line Side T1 lines. The converse vector step supports the DEFINITY ECS *call vectoring* (routing) feature by enabling the switch to retain control of vector processing in the system environment. It specifically supports the DEFINITY ECS converse vector command.

The Converse Data Return action step facilitates the creation of a two-way routing mechanism between the switch and the INTUITY CONVERSANT system. This enables data, in the form of touch-tones, to be received from the switch at the beginning of a transaction (*data passing*). Applications residing in the system to be accessed and initiated, and data can be collected and sent back to the switch at the end of the transaction (*data return*).

Without the use of the converse vector command, once a call terminates on a system channel, it is no longer under the control of the switch. It is then up to the system to process the transaction further and route the response back to the switch. With the converse vector command, control over call-routing is retained by the switch.

For detailed information on this feature, see *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760 and *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

System Status and Monitoring

The system is set up with several mechanisms to help customers troubleshoot and correct problems with the system. This section highlights some of those mechanisms. For more information on menus and screens, see *INTUITY™ CONVERSANT® System Version 6.0 Administration*, 585-310-591.

Diagnostics

The diagnose procedure is used to perform diagnostics on Tip/Ring, T1, E1, SP, or SSP circuit cards or the TDM bus. To fully diagnose the system hardware, diagnose all the circuit cards and the bus.

Diagnose is accomplished through the Configuration Management menu or the **diagnose card** and **diagnose bus** commands.

System Monitor

System monitor is used to verify that each incoming telephone line and its associated Tip/Ring, T1, or E1 circuit card is functioning properly. You may display the Voice Channel and Host Session Monitors through the System Monitor menus.

System monitor is accomplished through the System Monitor menus or the **sysmon** command.

Trace

Tracing capabilities allow you to trace the actions of a specified process or channel. Trace messages are stored in a trace buffer for future viewing. The trace capability is one way to view how a call is being handled and therefore is a useful tool when troubleshooting problems in an application.

Trace is accomplished through the Command Menu Trace Service menu or the **trace** command. See *INTUITY™ CONVERSANT® System Version 6.0 Administration*, 585-310-591, for more information.

Local System Status and Alerting

The system uses messages to alert you to problems, potential problems, or a change in the status of the system. These message are collected in the Message Log Report, and can be displayed to screen using the Message Log Report Screen. Through the use of this Message Log Report, a customer or technician can detect, report, and fix problems as quickly as possible to minimize disruption to normal service. (For the procedure to run the Message Log Report, see Chapter 5, “Reports,” in *INTUITY™ CONVERSANT® System Version 6.0 Administration*, 585-310-591.

Remote Maintenance Circuit Card

The remote maintenance circuit card is included as standard equipment with all US V6.0 system orders. This circuit card provides a built-in modem by which a technician or remote system administrator is able to log into the system over Tip/Ring analog lines to observe or administer the platform.

Reports

Reports offers you the ability to create a compiled list of system statistics. This information may include the number of calls made to the system, transfer attempts, or call information for a specific day. The Reports Administration screen gives you access to system reports, including system call classification reports, call data detail reports, call data summary reports, message log reports, and traffic reports. The system enables you to tailor each report to your needs and specifications.

Table 4-1 illustrates the capacity information regarding system reports.

Table 4-1. Report Capacities

Report	Maximum Storage Capacity
Call Data Detail Report[1]	7 days of data
Call Classification Report	365 days of data
Call Data Summary Report	7 days of data
Traffic Summary Report	7 days of data
Event Log Messages	500–20 Kbps messages (compressed)

1. Data from the current day plus previous 7 days is stored, then summarized.

Speech

Speech is stored on the system in talkfiles (speech files). The speech played during a call is the system's main interaction with the caller, and is therefore an important part of any application.

Speech Development

There are several methods for developing speech:

- Record a professional speaker
- Purchase a custom speech package from Lucent Technologies
- Share speech already recorded for another application
- Import speech from another application
- Use one of the following optional feature packages:
  - Script Builder
  - Enhanced Basic Speech
  - Text-to-Speech
  - Graphical Speech Editor
  - Graphical Designer

Coding and Storage

Once speech is recorded, it must be encoded and digitized into an acceptable format. There are several methods for digitizing speech.

Use one of the following optional feature packages:

- Custom speech packages developed by Lucent Technologies
- Graphical Speech Editor
- Script Builder

Digitized speech phrases are stored as digital data. The system then assigns a phrase number and stores the phrases in talkfiles. There are certain talkfile numbers that are reserved for various optional features. For example, talkfiles 8 and 9 are associated with the Form Filler Plus application.

By default, talkfiles are stored in specific places on the system. Platform system talkfiles that have less than 72 telephone network connections are stored in **/voice1/vfs/talkfiles**. MAP/100C and MAP/100 systems that have more than 72 telephone network connections have a second hard disk drive for speech storage. In these systems, talkfiles are stored in **/home3/vfs/talkfiles**.

NOTE:
If you have upgraded from V5.0 to V6.0 without reloading UnixWare software and you have one hard disk drive, your system talkfiles are stored in **/home2/vfs/talkfiles**.

You can store talkfiles in other locations on the system, as long as you tell the system where to find the speech. You do this by modifying the **/vs/data/irAPI.rc** file.

For more information on developing speech, talkfiles and their location, see *INTUITY™ CONVERSANT® System Version 6.0 Speech Development, Processing, and Recognition*, 585-310-762.

Speech Play and Coding Capacities

The number of telephone network connections that support simultaneous use of either speech playback or voice coding are listed in Table 4-2. The default coding method used for recording speech on the system is adaptive differential pulse code modulation (ADPCM) using a sampling rate of 32 Kbps.

The maximum capacities are the same for the MAP/100C, MAP/100, and MAP/40 platforms. The constraints occur at the circuit card level, rather than at the system level.

The capacities are listed by speech coding method per circuit card. For example, one SSP circuit card can support a maximum of 120 transactions of speech playback simultaneously (assuming the speech was recorded at 32 Kbps ADPCM). This means no more transactions could be supported if applications are active with other operations while some telephone network connections are strictly in the playback mode.

You can code and playback code excited linear prediction (CELP) properly only on the hardware that supports it. For example, CELP is not supported on IVP or SP circuit cards. If you attempt to perform CELP coding or playback on these cards, you will hear silence or noise.

Table 4-2 provides information on the playback and coding channel capacity per SSP, NGTR, IVP, and SP circuit cards for the various code types. Note that if an IVP circuit card is used, it can code or playback ADPCM or SBC on all available channels (4 or 6 per circuit card). CELP is not available on an IVP circuit card, but it is available on all six channels of the NGTR circuit card and IVC6 (AYC10) circuit cards.

NOTE:
The IVP circuit card values shown in the table represent the circuit cards being set to *talk* rather than *tdm*. If an IVP circuit card is set to *tdm*, the value shown for the SSP or SP circuit cards apply.

Table 4-2. Speech Channel Capacities

Circuit Card	ADPCM 16/32 Kbps Playback/Record	CELP 16 Kbps Playback/Record	SBC 16/24 Kbps Playback/Record
SSP (AYC43)	120/120	120/60	100/100
NGTR (AYC30)	6/6	6/6	6/6
IVC6 (AYC10)	6/6	6/6	6/6
Tip/Ring IVP6	6/6	Not available on SP circuit card	6/6
Tip/Ring IVP4	4/4	Not available on SP circuit card	4/4
SP AYC2C	48/30	Not available on SP circuit card	12/12
SP AYC9	48/48	Not available on SP circuit card	20/20

Speech Storage Capacities

Table 4-3 illustrates the speech storage capacities. The descriptions of the columns shown in the table are as follows:

- Disk configuration — Lists each possible hard disk configuration available for V6.0.
- Speech blocks — Total amount of space available. One speech block uses 8 Kbytes. The number of seconds per block depends on the coding rate.

- 16-Kbit CELP/ADPCM/SBC — Hours of speech available for the given disk configurations using speech encoded at a rate of 16 Kbps. The speech-encoding method used can be either CELP, ADPCM, or sub-band coding (SBC).
- 24-Kbit SBC — Hours of speech available for the given disk configuration using speech encoded at a rate of 24 Kbps. The speech-encoding method is SBC.
- 32-Kbit ADPCM — Hours of speech available for the given disk configuration using speech encoded at a rate of 32 Kbps. This speech-encoding method and rate is the default used when encoding speech on the system.
- 64-Kbit PCM — Hours of speech available for the given disk configuration using speech encoded at a rate of 64 Kbps. This speech-encoding method and rate is the default used when encoding speech on the system.

The numbers shown are theoretical maximums not likely to be achieved because there is wasted space whenever a speech phrase does not fill a block. For example, standard speech is stored at 32-Kbit ADPCM, with 2 seconds of speech per block. If a phrase is less than 2 seconds, the remaining space within that speech block is not available for other use.

Table 4-3. Hours of Storage Speech Available According to Disk Configuration

Disk Configuration	Speech Blocks	16 Kbit CELP/ ADPCM/ SBC	24 Kbit SBC	32 Kbit ADPCM	64 Kbit PCM
2.0-Gbyte SCSI	76,800	85 hrs	56 hrs	42 hrs	21 hrs
Dual 2.0-Gbyte SCSI[1]	256,000	284 hrs	190 hrs	142 hrs	71 hrs
1.7-Gbyte SCSI	64,038	71 hrs	45 hrs	35 hrs	17 hrs
Dual 1.7 Gbyte SCSI[1]	215,552	240 hrs	160 hrs	120 hrs	60 hrs
1.2-Gbyte SCSI	40,974	48 hrs	32 hrs	24 hrs	12 hrs
Dual 1.2-Gbyte SCSI[1]	144,614	170 hrs	112 hrs	85 hrs	42 hrs

1. The second disk is dedicated to speech storage.

Speech Administration Capacities

Table 4-4 illustrates the capacities associated with recording speech from the speech administration screens.

Table 4-4. Speech Administration Capacities

Item	Maximum Capacity	Notes
Phrase length when recorded in Script Builder, in seconds	240	Playing phrases consecutively eliminates the constraint
Phrase tag length (characters)	50	

Communications

The system connects to the public switch telephone network (PSTN) to communicate with external callers. This interface to the PSTN uses either an analog or digital connection to send information to callers. In some system applications, it also connects to private data networks in order to access host computer databases for information to complete certain types of calls.

The system supports asynchronous and synchronous private data network interfaces. These interfaces provide connections from the system to other computing devices such as remote monitoring systems as well as host computer databases.

Telephony Interfaces

This section discusses in general terms the analog and digital interface configurations on a V6.0 system.

Analog Interface

This section describes the basic analog telephony interfaces available when the right combination of base and optional features are used. Analog interfaces are accomplished through the Tip/Ring and fax circuit cards.

In an analog configuration, the system provides connectivity to private branch exchange and automatic call distribution (ACD) customer-premise equipment. It also supports interfaces to local telephone exchange carriers.

Supported analog connections include:

- Connection to 5ESS® switch
- Connection to the following Lucent Technologies private branch exchanges:
  - DEFINITY ECS (G3V5)
  - DEFINITY G1/G3
  - DEFINITY G2
  - Dimension
  - Merlin Legend
  - System 25
  - System 75
  - System 85
- Connections to other switch facilities that match V6.0 analog requirements

See *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763, for more information on analog interfaces relative to your system design.

See Chapter 6, “Switch Interfaces,” in *INTUITY™ CONVERSANT® System Version 6.0 Administration,* 585-310-591, for more information on analog connection switch settings.

Digital Interface

This section describes the basic digital telephony interfaces available when the right combination of base and optional features are used. Digital interfaces are accomplished through T1 circuit cards or the E1 (AYC21) circuit card. Supported protocols are T1 E&M, Line Side T1, Line Side E1, and Primary Rate Interface (PRI).

In a digital configuration, the system provides connectivity through an E1/T1 circuit to digital network facilities such as a central office switch. E1/T1 connections also provide dialed number identification service (DNIS) information for automation of incoming calls for customers with multiple 800 or 900 numbers. To have DNIS with Line Side T1, you must use the Adjunct/Switch Application Interface (ASAI) or Converse Vector Step.

Digital E1/T1 interfaces also support Line Side connection of a voice system and a private branch exchange. ASAI is supported on Line Side T1/E1 *only* when using DEFINITY ECS switches.

See *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763, for more information on digital interfaces including T1, Line Side E1, Line Side T1, PRI, and ASAI.

See Chapter 6, "Switch Interfaces," in *INTUITY™ CONVERSANT® System Version 6.0 Administration*, 585-310-591, for more information on digital connection switch settings.

Data Network

The system provides, through base and optional software and hardware, support for several data network communication interfaces including:

- SNA 3270 (see "Synchronous Host Interface" in Chapter 5, "Feature Packages")
- TCP/IP (see "Local Area Network Connectivity" in Chapter 5, "Feature Packages")
- SQL*Net (see "Database Environment" in this chapter)
- Asynchronous (see "Multi-Port Asynchronous Communications Interface" in Chapter 5, "Feature Packages")

Database Environment

V6.0 works with software provided by ORACLE to provide database features and functionality.

ORACLE Relational Database Management System 7.1.3

Although ORACLE RDBMS 7.1.3 (ORACLE 7) provides some new or enhanced features compared to earlier releases of ORACLE, its database functionality has not changed.

The ORACLE RDBMS is the core software package that allows you to establish and maintain a local ORACLE RDBMS on the system. Installation of this package is mandatory.

Extended ORACLE RDBMS is an extension of base ORACLE that provides additional utility packages libraries, and header files not contained in the base ORACLE software. Installation of this package is optional.

Optional ORACLE software packages are used to enhance or extend the operation of the standard ORACLE database. If you want to connect to a remote ORACLE database machine, you must install the optional SQL*Net TCP/IP software.

The optional development software (or add-on package) is available for customers who want to develop more sophisticated database applications to go beyond the database interfaces provided in the base and extended ORACLE software. This software includes the following ORACLE development packages:

- PRO*C 1.6.4.2
- SQL*FORMS/MENU 3.0.16.12
- SQL*ReportWriter 1.1.14.7.2

Customers can purchase any other ORACLE software from either the ORACLE Corporation or a third-party vendor.

See *ORACLE7 for Intel UNIX® SVR4 (iABI) Installation & Configuration Guide* or vendor-provided installation documents for the specific requirements and installation procedures. ORACLE maintains a list of ORACLE development partners (third-party vendors). Contact ORACLE directly for more information at (800) 542-1170.

Database Capacities

Table 4-5 illustrates the database capacities used within a Script Builder application script.

Table 4-5. Database Capacities

Item	Maximum Capacity	Notes
Local database (LDB) table name	11 characters	
Length of LDB field names	24 characters	
LDB field size – char	50 characters	
LDB field size – num	11 digits	
LDB field size – date	10 characters	Fixed size
LDB field size – time	11 characters	Fixed size
Number of open cursors on the system	255, default size	This can be tuned higher. See *INTUITY™ CONVERSANT® System Version 6.0 Administration*, 585-310-591, for more details on tuning the open cursor number.
Different database tables accessed per application	Infinite number	
Different database tables owned per application	10	Includes both local and remote tables
Fields specified in one LDB table with Script Builder	15	Includes both local and remote tables
Number of remote databases accessed per system	4	Up to five database interfaces supported; one is dedicated to the local database (requires SQL*Net)
Overall database size		Free space restricted only by the amount of space available in all file systems

SCSI Disk Mirroring

The SCSI disk mirroring feature provides a method of configuring and managing a system so that a SCSI hard disk drive on the platform has an identical back-up copy of its stored data kept on another hard disk drive, which is referred to as a *mirrored* disk.

Mirroring improves system reliability by ensuring that operations and resources are not lost if a hard disk drive fails. It minimizes the impact of losing a disk drive, and provides a more efficient method of replacing the information that is lost because of such a failure.

This feature is supported by all platforms and requires that the VERITAS Volume Manager and VERITAS File System packages be installed and fully operational. In addition, the hardware platform must have at least two SCSI hard disk drives. VERITAS also provides the ability to grow or shrink all filesystems except **root**.

See Chapter 6, “Replacing a Hard Disk Drive,” in the maintenance book specific to your platform, for more information on mirroring.

Feature Packages

5

Overview

This chapter presents a detailed description of the feature packages available with the V6.0 system.

As a general rule, the packages described in this chapter are installed *in addition to* the V6.0 system application software.

When you read about a feature package, the sections titled “Software and Hardware Requirements” assume that the base application software and platform-required hardware (such as central processing unit) are already installed.

Purpose

The purpose of this chapter is to

- Describe each feature package.
- State software and hardware requirements.
- List any optional equipment that may be used with the feature package.
- Present the capabilities and capacities of each feature package.

V6.0 System Feature Packages

Feature packages can be hardware and/or software in nature and provide specific functions that enhance the operation or capacities of the base system. They are not required for the basic voice system to function, and are not supplied with the base system. These feature packages are purchased separately. They provide enhancements such as data network interfaces or additional basic hardware resources.

NOTE:
The V6.0 system will *not* support AUDIX® Voice Power® or FAX Attendant System™. You *must* remove all previous software releases of these features from the system to upgrade to V6.0.

Adjunct/Switch Application Interface

The Adjunct/Switch Application Interface (ASAI) is an optional feature package which provides an integrated services digital network-based interface between DEFINITY® Generic 3 and adjuncts. The ASAI feature package provides a set of pre-defined capabilities. These capabilities are built on top of the ASAI interface and allow the user to adjust certain application parameters within a prepackaged context.

This digital signaling interface allows the voice system to monitor and route calls on the DEFINITY Generic 3. This interface can operate over either an IPCI interface or an Ethernet TCP/IP link connected to a DFINITY LAN Gateway. When used in conjunction with Tip/Ring, digital Line Side T1, or Line Side E1 interfaces, the ASAI interface allows the voice system to monitor and control incoming calls. It also allows access to ANI and DNIS and supports ASAI transfer which is faster and more reliable than a flash transfer.

The full CallVisor PC library of ASAI interface software is also provided with the ASAI feature package to facilitate building ASAI applications in C code. Professional Services provides development expertise in ASAI and the system. The Solutions Delivery Organization (SDO) and other independent software vendors can also develop custom applications using the full library. This provides the optimum solution where you require full ASAI integration with the application.

Refer to the following documentation for additional information about CallVisor PC:

- *CallVisor PC Adjunct/Switch Application Interface (ASAI) Installation and Reference*, 585-246-205
- *DEFINITY Communications System Generic 3 CallVisor ASAI Technical Reference*, 555-230-220
- *DEFINITY Communications System Generic 3 CallVisor ASAI Protocol Reference*, 555-230-221

Software and Hardware Requirements

The ASAI feature package requires the following software and hardware components:

Software Requirements

In order for the ASAI feature package to be implemented, the following software packages must be installed:

- AT&T CALLVISOR PC ISDN
- AT&T CALLVISOR PC LAN GATEWAY
- AT&T CALLVISOR PC ASAI
- INTUITY™ CONVERSANT® System V6.0 Adjunct/Switch Application Interface Package

Hardware Requirements

The ASAI feature package also requires that one of the following circuit cards be installed and operational:

- LAN circuit card – This circuit card supports 1 signalling connection with the DEFINITY Generic 3 over an Ethernet LAN connection.
- PC/ISDN circuit card (formerly called the IPCI circuit card) – This circuit card supports 1 signalling connection with the DEFINITY Generic 3 over a D-channel basic rate interface.

The DEFINITY Generic 3 must also have a DEFINITY LAN Gateway or an ISDN-BRI line circuit card installed, using analog Tip/Ring, digital Line Side T1, or Line Side E1 cabling.

Table 5-1 lists ASAI capacities.

Table 5-1. ASAI Capacities

Attribute	Maximum Number	Notes
ASAI BRI data links (D-channels) between private branch exchange and the voice system	1	
Tip/Ring lines between private branch exchange and the voice system	72	
Line-side T1 lines between private branch exchange and the voice system	MAP/40 – 2 MAP/100 – 4 MAP/100C – 4	Represents the equivalent of 48 or 96 incoming analog channels
Line-side E1 lines between private branch exchange and the voice system	MAP/40 – 2 MAP/100 – 3 MAP/100C – 3	Represents the equivalent of 60 or 90 incoming analog channels

See the DEFINITY documentation library for information on hardware and software requirements when interfacing the voice system with a DEFINITY system. For more information about connectivity to DEFINITY see *CallVisor ASAI Planning Guide*, 555-230-222. For more information concerning the LAN Gateway see *Installation, Administration, and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway*, 555-230-223.

For more information on the ASAI feature package, see Chapter 4, “Adjunct/Switch Application Interface,” in *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

Asynchronous Host Interface Toolkit

The asynchronous host interface toolkit provides a toolkit of operational software, source code, and user-level and design-level documentation to develop system applications that access host computers using an asynchronous data communication interface.

The asynchronous host interface toolkit offers these functions:

- Sends messages of application-specified content to the remote host
- Supplies host response data to the application
- Accepts unsolicited messages from the host and makes them available for application processing
- Provides these services simultaneously to independent hosts on multiple asynchronous lines
- Multiplexes messages from multiple channels onto the asynchronous lines
- Performs normal transaction processing functions while handling multiple asynchronous messages on a fully loaded system

Software and Hardware Requirements

This feature package requires that the CSG Asynchronous Host Interface Toolkit Version 1.0 software, as well as the proper asynchronous communications hardware and software, like the Multi-Port Asynchronous Communications card and driver package be installed and operational.

NOTE:
Two asynchronous communication ports are provided as standard equipment, labeled as COM1 and COM2. The remote maintenance circuit card is standard equipment on the system (in the US only), and the serial port/modem interface of the remote maintenance circuit card uses one serial port (COM1). If you need two physical asynchronous host connections, you need the Multi-Port Asynchronous Communication Interface. For more information, see ''Multi-Port Asynchronous Communications Interface'' in this chapter.

Table 5-2 lists asynchronous host interface toolkit capacities.

Table 5-2. Asynchronous Host Interface Toolkit Capacities

Item	Maximum Number	Comments
Physical asynchronous connections allowed to the system	1 without the multi-port card 9 with the multi-port card	The maximum number of connections assumes that the remote maintenance circuit card is required and installed. COM1 is always used by the remote maintenance circuit card.
Host systems to which asynchronous connections may be made	2	Can be increased by custom modification and the use of an 8-port asynchronous communications interface
Multiplexed channels (sessions) allowed per link	24	48 channels is the maximum number per system (two links)
Transfer rate, in bits/second (bps)	9600	
Message size, in characters	127	
Messages recognized by the system per link, per second	2	At 9.6-Kbps with capacity reserved for normal processing functions

Consult your account representative for more information about this feature package.

Call Center Applications – New Suites of Solutions

Call Center Applications – Our new Suites of Solutions provide a combination or suite of applications for call centers. These applications enhance information exchange provide access to pertinent caller information, and routing to help manage call traffic. Through automation, these suites provide services to callers even when live agents are unavailable. The applications also encourage callers who might normally wait on hold or abandon calls to try an automated approach.

The call center application suites include:

- The Customer Assist Suite of Solutions – This suite features an application solution called the Customer Assist Care Center. It contains queue and resource management tools. The solution provides customer self service options to the caller as well.
- The Agent Assist Suite of Solutions – This suite features personal productivity application solutions and tools for call center agents and managers.

Customer Assist Suite of Solutions

The Customer Assist Suite of Solutions features the Customer Assist Care Center application. This application consists of five integrated software modules. It is a queue and resource management tool for the Call Center. Each module can be tailored to the needs of your particular call center using administrative screens, menus, and predefined commands or “actions.”

Customer Assist Care Center consists of the following modules:

- Queue management with custom call routing

  This module allows call centers to more effectively manage their queues by automatically routing callers to the appropriate agents. This can help reduce the time callers spend in queue. This module also enables personalized service based on various caller information such as their telephone number, account number, or type of services needed, such as help desk or account inquiries.

- Announcement management

  This module enables callers to listen to a variety of announcements including:

  - Standard announcement – allows callers to find out more about the products and services that interest them
  - Delay announcement – provides callers with estimated wait times (EWT) in the queue so they can make informed decisions as to how long they will wait
  - Dynamic announcement – uses caller ID information to select messages tailored to particular customers' interests and buying patterns

- Message in queue

  This module gives callers the convenience of leaving a message rather than waiting for an agent. This module offers two options:

  - Immediate call back – The callback message waits in the queue so the caller does not have to. When an agent becomes available, the call back message is delivered to the agent and the customer's phone number is dialed automatically.
  - Scheduled call back – The caller messages are stored in a mailbox and delivered to agents based on a predetermined time schedule or on call volume activity.

- Bulletin board

  This module allows callers to help themselves to bulletin boards that contain menus of pre-recorded informative messages. Bulletin boards also give callers self-service access to lists of documents, and service-related information. In addition, callers are given the option to request delivery of this information by various means including phone, mail, and fax.

- Automated information collection

  This module is a self-service option that uses auto attendant-like menus to assist callers in gathering information such as account information or survey questions.

For more information on Customer Assist Suite of Solutions, contact your Lucent Technologies Account Team.

Agent Assist Suite of Solutions

Agent Assist Suite of Solutions is a suite of personal productivity tools for call center agents and managers. These tools provide a Windows-based graphical interface to call center PC-based workstations, giving agents and their supervisors flexible capabilities.

The Agent Assist Suite of Solutions provides the following applications:

- Agent Observing

  This application allows automatic scheduling and monitoring and recording of agent conversations. It also allows message playback and storage at any time; convenient to both the agent and supervisor alike.

- Malicious Call Recording

  This application provides on-demand recording of caller conversations. You can take notes with an on-screen notepad and store calling party information, such as ANI, extension number, trunk id, or other pertinent information.

- Spontaneous Telephony Agent Recording (STAR)

  This application enables agents to turn call recording on and off and to use the on-screen notepad to record details about a particular recording.

- Customer Experience Observation (CEO)

  This application monitors calls from the time callers enter the call center until they hang up. Everything the caller hears, presses, and says is recorded for later retrieval and management.

- Agent Now!

  This application allows a supervisor to record calls for assigned agents on an on-demand basis.

For more information on the availability of Agent Assist Suite of Solutions and its application solutions, contact your Lucent Technologies Account Team.

Optional Feature Package Enhancements

Enhanced Basic Speech, WholeWord speech recognition, and Dial Pulse Recognition may be purchased as optional feature packages to enhance your call center application packages.

With these optional enhancements, the capabilities of Suites of Solutions include:

- Support for Enhanced Basic Speech (with multiple languages on a single V6.0 system) in the following languages:
  - Japanese (female voice)
  - Dutch (female voice)
  - German (female voice)
  - Latin-American Spanish (female voice)
  - Castilian Spanish (female voice)
  - UK English (female voice)
  - US English (male and female voices)
  - Australian English (female voice)
  - Brazilian Portuguese (female voice)
  - French (female voice)
  - Canadian French (female voice)

  For more information on Enhanced Basic Speech, see "Enhanced Basic Speech" in this chapter.

- Support for WholeWord speech recognition of both connected digits and isolated digits (0-9, and Yes and No) in the following languages:
  - US English
  - Canadian French
  - Latin-American Spanish
  - Brazilian Portuguese
  - UK English
  - Australian English
  - German
  - Castilian Spanish
  - Japanese
  - French
  - Dutch

  For more information about WholeWord speech recognition, see "Speech Recognition" in this chapter.

- Support for Dial Pulse Recognition

  Since dial pulse recognition and speech recognition can be administered as options, four modes of caller input are possible, as listed below:

  — Touch-tone only (no speech recognition or dial pulse recognition)

  — Touch-tone and speech recognition (no dial pulse recognition)

  — Touch-tone and dial pulse recognition (no speech recognition)

  — Touch-tone, speech recognition, and dial pulse recognition

  For more information on Dial Pulse Recognition, see ''Dial Pulse Recognition'' in this chapter.

Software and Hardware Requirements

Some software and hardware requirements are common to both the Customer Assist and Agent Assist Suites of Solutions applications. Other software and hardware requirements are specific to a certain call center application or to a module within a suite.

Software and hardware requirements are provided for the following categories:

- Requirements for all call center applications (required for all Agent Assist Suite of Solutions and Agent Assist Suites of Solutions applications)
- Additional requirements for Agent Assist Suite of Solutions (all modules)
- Hardware requirements for PC (required for all Agent Assist Suites of Solutions modules)
- Software requirements for PC (required for all Agent Assist Suites of Solutions modules)
- Optional speech recording equipment (required for some Agent Assist Suite of Solutions modules)
- Optional equipment for transferring applications over a network (required for some Agent Assist Suite of Solutions modules)

Software and Hardware Requirements for All Call Center Applications

Some hardware and software requirements apply to both the Customer Assist and Agent Assist Suite of Solutions call center applications.

All applications require the following to be installed and operational:

- Customer Assist Suite of Solutions and/or Agent Assist Suite of Solutions software feature package(s)

  NOTE:
  The INTUITY CONVERSANT system must be running on V6.0 version software for these call center applications.

- One of the following versions of the DEFINITY switches:
  - — DEFINITY G3V4 or DEFINITY ECS (G3V5) for domestic installations
  - — DEFINITY ECS (G3V5) for global installations
- TCP/IP connectivity between the clients (PCs) and the INTUITY CONVERSANT system. You need a standard Ethernet LAN circuit card or Token/Ring circuit card and a WinSock driver (winsock.dll) installed on your personal computer. These tools also require TCP/IP software and a sound card. TCP/IP software is part of UnixWare 1.1.2 and is offered as part of the base system software. However, you must have installed the INTUITY CONVERSANT SQL*Net TCP/IP package in order to access the database on a remote system.

Additional Software and Hardware Requirements for Agent Assist Suite of Solutions

This section includes all additional, required hardware and software requirements for the Agent Assist Suite of Solutions. These software and hardware requirements are in addition to the software and hardware requirements for all call center applications discussed above. This section also includes performance issues and a list of optional equipment for the Agent Assist Suite of Solutions.

NOTE:
All Agent Assist Suite of Solutions applications use a PC-based graphical user interface.

Hardware Requirements for PC

The hardware listed below is required for the installation and operation of Agent Assist Suite of Solutions applications:

- VGA monitor (or better)
- Microsoft-compatible mouse

- 486DX 33-MHz personal computer (or higher)

  Your personal computer requires at least 8-MB of RAM and a hard drive with at least 5-MB of available space for the applications to function. However, 16-MB of RAM and a hard drive with at least 20-MB of available space is recommended for optimal results.

  The required amount of available disk space depends on the number and complexity of the applications you plan to develop on your personal computer and whether or not you plan to record speech.

  You should plan on considerably more disk space than previously mentioned above if you plan to record speech. For help on determining the hard drive requirements for your application, contact the Technical Support Center.

- 3 1/2-inch diskette drive designed for reading 1.44-Mbyte diskettes

Software Requirements for PC

Your personal computer must have the following software installed:

- MS-DOS Version 3.1 or higher
- Microsoft Windows 95, Microsoft Windows NT 3.51 (or higher), or Microsoft Windows Version 3.1

  NOTE:
  Graphical System Monitor can also run on Microsoft Windows for Workgroups 3.11, but is not recommended for use with Microsoft Windows Version 3.1.

- Microsoft Excel 5.0 (or higher) – required for customer satisfaction survey only

Optional Speech Recording Equipment

This section includes information about equipment for recording speech and for transferring applications over a network.

- Sound Blaster compatible card

  A Sound Blaster compatible card is recommended for use with customer satisfaction survey and graphical system monitor.

  The sound card allows you to listen to speech that you record. You can use this speech during simulation, as well as on the system. You can run some call center applications without a sound card; however, you will not be able to record or listen to speech during the simulation mode.

  NOTE:
  Speech that you record may not have the fidelity of the professionally recorded speech available from Lucent Technologies. If you are interested in professionally recorded speech once you have installed

your application on your system, contact your local Lucent Technologies account team.

- Microphone

  Although any microphone is sufficient for recording speech with Agent Assist Suites of Solutions, the quality of the microphone you choose dramatically affects the fidelity of your recorded speech.

- Speaker

  Although any speaker is sufficient for listening to recorded speech with Agent Assist Suites of Solutions, the quality of the speaker you choose affects the fidelity of your recorded speech.

Call Classification Analysis

Call Classification Analysis (CCA) allows application developers to classify the disposition of originated and transferred calls. Some of the dispositions include busy, answered, ring no-answer, and reorder.

The standard level of call classification analysis, intelligent CCA, is included with the base V6.0 system software. Intelligent CCA is needed to make call transfers and call bridges, as described in *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760.

An enhanced level of call classification analysis, *Full CCA* is available as an optional feature package in V6.0. Full CCA is the feature package discussed in this section.

NOTE:
Full Call Classification Analysis is supported only in the US and Canada.

Full CCA

Full CCA provides a more complete interpretation of network progress tones than does base intelligent CCA. Tip/Ring, T1, Line Side T1, and PRI lines can be used for Full CCA.

Full CCA provides the following advantages over intelligent call classification analysis:

- Better answer detection using a more sophisticated voice-energy detector
- Detection of busy and ringback tones generated by older or faulty equipment that does not conform to precise tone-plan standards
- Detection of special information tones (SITs) that indicate why an originated call failed (this feature package allows for reliable call classification over the public switched network)
- Detection of modem tones
- Tip/Ring, T1, Line-side T1, and PRI lines can be used

Full CCA can be activated when a call is dialed out during a flash transfer, a call bridge (internal transfer), or a call origination.

Software and Hardware Requirements

This feature package requires the V6.0 Call Classification Analysis package software and at least one speech and signal processor (SSP) circuit card or signal processor (SP) circuit card to be installed and operational.

NOTE:
The SSP or SP card must be installed in the system before you install the CCA software.

SSP and SP Channel Capacities

A single SSP card can handle up to 42 simultaneous channels of CCA if it is dedicated exclusively to CCA. A single SP card can handle up to 6 simultaneous channels of CCA if it is dedicated exclusively to CCA.

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760, and *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-762.

Country-Specific Analog Switch Integration Packages

The V6.0 system can interface with other switches if differences in communication protocols and parameter settings are taken into account. The proper setting of these parameters on both the switch and the V6.0 system is essential for establishing communications between the two devices.

Each package allows the tuning of the Tip/Ring interface to operate properly with a DEFINITY switch or the telephone network in the specific country. With a switch integration package, you can select the installed switch from the analog switch administration menu to be the current switch with which the system is interfacing. You can modify key parameters that affect the system-to-switch interface. Without an analog switch integration package, the system relies on built-in switch to system defaults.

Chapter 3, ‘‘Software’’ provides a listing of available country-specific analog switch packages.

Software and Hardware Requirements

In order to support this feature, at least one of the country-specific analog switch integration feature packages must be installed and operational.

NOTE:
Multiple switch integration packages can reside on a system, but only one package may be in use by the system at any one time.

For an extended list of table parameters and additional information on switch integration, see Chapter 5, “Switch Interface Administration,” in *INTUITY™ CONVERSANT® System Version 6.0 Administration*, 585-310-591. For specific values for each parameter, contact your technical support organization.

Dial Pulse Recognition

The Dial Pulse Recognition (DPR) feature package allows users with rotary telephones or push-button telephones that generate dial pulses to interact with system applications. DPR is available to all channels on the platform, both analog and digital, via the speech and signal processing card (SSP). DPR is accessible through Script Builder and Graphical Designer applications.

DPR accepts caller input from a telephone, as with touch tone input. DPR processes the caller input by using a recognizer that requires SSP resources, rather than using resources on the telephony interface circuit card as is done with touch tone input.

DPR recognizes digits 0 through 9, but *does not* recognize an asterisk (*) or a pound sign (#).

DPR can work simultaneously with either WholeWord or FlexWord™ speech recognition. The WholeWord and FlexWord recognizers are unable to work together. However, each of these recognizers can independently work with DPR. Combining DPR with a speech recognizer gives the caller the choice of using dial pulse or touch tone input, as well as spoken input.

The application developer selects individual recognition types. If the standard recognition types with this feature package do not meet your needs, Lucent Technologies can develop custom recognition types for you. For additional information, contact your Lucent Technologies representative.

NOTE:
Previous system releases have offered speech technologies on a per system basis. V6.0 offers speech technologies on a *channels per system* basis. The SSP, SP, NGTR, and IVC6 cards include basic playback and coding functions. DPR can be added on a channels per system basis to all supported analog and digital interfaces via the SSP.

Barge in, also referred to as “dial-through,” allows callers to interrupt system prompts for faster menu access by entering dial pulse input. At the initial release of the V6.0 system, barge in is not supported for DPR. However, there are plans to enhance the capability of this feature in the future. Contact your Lucent Technologies representative for information on further development of this feature.

Software and Hardware Requirements

This feature package requires the INTUITY CONVERSANT System V6.0 Dial Pulse Recognition feature package and an SSP card be installed and operational. For more information, see *INTUITY™ CONVERSANT® System Version 6.0 Speech Development, Processing, and Recognition*, 585-310-762, and *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760.

Enhanced Basic Speech

The enhanced basic speech vocabulary package (called standard speech in previous releases) includes simple words that are frequently used to provide information to callers during transactions. In V6.0, enhanced basic speech has been standardized to include the phrases needed to speak numeric, date, and monetary quantities. The range of numeric, date, and monetary quantities that can be spoken is the same as in previous releases.

NOTE:
A maximum of one language may be used per application, but you have the ability to install and use other languages.

Applications that you wish to convert from one language to another ***must be*** developed first with the US English enhanced basic speech package, and then converted to the other language(s) of your choice.

Enhanced basic speech is available in the following languages and voices:

- US English (female and male voices)
- UK English (female voice)
- Australian English (female voice)
- Dutch (female voice)
- French (female voice)
- Canadian French (female voice)
- Brazilian Portuguese (female voice)
- Japanese (female voice)
- Latin-American Spanish (female voice)
- Castilian Spanish (female voice)
- German (female voice)
- Mandarin Chinese (female voice)
- Cantonese Chinese (female voice)
- Hindi (female voice)

Software Requirements

This feature requires that at least one INTUITY CONVERSANT Enhanced Basic Speech optional software language package be installed and operational.

For more detailed information on Enhanced Basic Speech, see *INTUITY™ CONVERSANT® System Version 6.0 Speech Development, Processing, and Recognition*, 585-310-762.

Enhanced File Transfer

The Enhanced File Transfer feature package uses the file transfer system to interactively or directly transfer files between the system and a synchronous host processor on a designated logical unit (LU). File transfer can be performed directly from the UNIX system command line, a shell script, or a program using the system call. This feature package allows the transfer of speech, applications, and database data, and adds significant enhancements to the existing file transfer capabilities provided by the standard Synchronous Host Interface package.

Software and Hardware Requirements

This feature package requires that the 3270 Enhanced File Transfer software be installed and operational. Inherently, communications between the system and a host processor must be established through the installation of the Synchronous Host Interface package.

Table 5-3 lists enhanced file transfer capacities.

Table 5-3. Enhanced File Transfer Capacities

Item	Max. Number	Notes
Simultaneous enhanced file transfer sessions	1	Enhanced file transfer may only be initiated on a single logical unit of one link.
Transmission speed, in Kbps	56	Transmission speed is dependent on the actual hardware connections between the machines, operating at between 4.8 Kbps and 56 Kbps.

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

External Alarms

The External Alarms Interface package, used only on the MAP/100C, provides a means for administering external alarms in a central office environment. The alarm can use lights or audible alarm indicators depending on the hardware that is installed.

Most central office telecommunications equipment separate their system maintenance and alarm messages into three classes: critical, major, and minor. This feature package allows a programmer to classify each system message into one of the three previous classes, and to subsequently trigger a separate alarm corresponding to each alarm class.

The circuit card included with the External Alarms feature package includes eight relay contacts. One relay contact operates as a sanity timer control jumper and another relay contact operates as a power failure indicator. The remaining contacts are used to trigger specific alarms.

Software and Hardware Requirements

This feature requires the V6.0 External Alarms Package and External Alarms circuit card be installed and operational.

Table 5-4 lists the external alarms capacities.

Table 5-4. External Alarms Capacities

Item	Max. Number	Notes
Time between system sanity checks, in seconds	60	Any integer value, in seconds, can be specified in the UNIX file controlling this function, although 60 is the recommended maximum. 20 seconds is default.
Current capacity of external alarm interface hardware, in amps	5	Operating at 250 VAC
	1	Operating at 125 VDC
	5	Operating at 30 VDC

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

FlexWord Toolkit

The system provides enhancements to the FlexWord recognition feature package by providing a FlexWord Toolkit that separates FlexWord vocabularies from the FlexWord Recognition package.

This toolkit allows you to create your own words, wordlists, and vocabularies. The FlexWord Toolkit consists of the tools and documentation necessary to create FlexWord wordlists, to verify and fine tune the phonetic definitions of the words in the wordlists, and to package and install the customer-defined vocabularies.

The FlexWord Toolkit is a separate installable package from the FlexWord Speech Recognition package. You can either purchase the toolkit and create your own FlexWord vocabularies or purchase custom vocabularies from a custom vocabulary provider.

New to V6.0, the FlexWord Toolkit can run with the system still running. It is no longer a requirement to shut down the system to run the toolkit.

NOTE:
During the development of a US English FlexWord vocabulary, the developer should use the Text-to-Speech (TTS) feature package to ensure that errors are not introduced while editing the FlexWord phoneme strings. This checking helps avoid minor errors in FlexWord phoneme strings that can introduce a large degradation in recognition accuracy.

Software and Hardware Requirements

This feature package requires the following to be installed and operational:

- INTUITY CONVERSANT System V6.0 FlexWord Toolkit package
- INTUITY CONVERSANT System V6.0 Text-to-Speech
- At least one SSP or SP circuit card (AYC9 to support TTS) and an ASP driver
- Tip/Ring circuit card and Tip/Ring card driver
- Serial mouse

For more information on the FlexWord Toolkit, see *INTUITY™ CONVERSANT® System Version 6.0 Speech Development, Processing, and Recognition*, 585-310-762.

Form Filler Plus

The Form Filler Plus feature package allows application scripts to record callers' responses to prompts for later transcription and review. As many as ten 1-second through 999-second responses can be recorded per call session. Caller responses are recorded and then stored in the Form Filler Plus database, where they can be retrieved at a later time using the form retriever transcription script.

Application voice "forms" that prompt for and record caller input for Form Filler Plus are available through a high-level Script Builder application template, FFtemplate, provided with the Form Filler Plus package. Customized Form Filler Plus applications are developed by copying and modifying this template to suit individual needs.

Software and Hardware Requirements

This feature package requires that the INTUITY CONVERSANT System V6.0 Form Filler Plus and INTUITY CONVERSANT System V6.0 Script Builder software be installed and operational.

Table 5-5 lists Form Filler Plus capacities.

Table 5-5. Form Filler Plus Capacities

Item	Maximum Number	Notes
Channels simultaneously using Form Filler Plus	96	
Channels simultaneously running transcribe script	96	
Coding rates supported	4	16 SBC, 24 SBC, 16 ADPCM, 32 ADPCM
Responses recorded per call session (or application)	10	
Coded phrase length, in seconds	999	Default is 20 seconds
Talkfiles coded and stored	1	Talkfile 8 is dedicated to storage. Talkfile 9 is dedicated to transcription.
Initial time-out to detect speech during a code session, in seconds	5	
Interword time-out to detect silence during a code session, in seconds	5	

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760.

Graphical Designer Release 1.6

The Graphical Designer feature package allows you to design applications for the V6.0 system on your Windows-based PC, within a standard graphical interface (GUI). This tool allows you to develop applications by specifying every detail of interaction between the system and its callers.

For example, the greeting heard by callers when connecting with a service, the menu of options offered, the way callers are prompted for credit card numbers and other pertinent information, how long to wait for caller responses, and the relevant databases that need to be accessed are all parts of an application that you can define and implement with Graphical Designer.

In addition, you can develop a full range of interactive voice response services including banking by phone, processing insurance claims, paying bills, purchasing tickets, shopping by catalog, and registering for classes.

Graphical Designer includes a set of tools that allow you to design, test, generate, transfer, and install the applications that can run on the system.

Capabilities of the Graphical Designer feature package include the following:

- You can create applications on your Windows-based PC, instead of performing application development on your system, reducing the need to dedicate your system to application development.
- You can develop complex applications easier and faster by creating subroutines and menus.
- You can select speech phrases to play in an announcement from a directory callers set up.
- You can work within a standard graphical user interface (GUI).
- You can test call flow and hear what callers will hear if you have recorded speech.
- You can use context-sensitive and online help.
- You can access dial pulse recognition (DPR) if you have installed the optional DPR feature package on the system.
- You can access WholeWord and FlexWord languages if you have installed the optional speech recognition feature packages.

NOTE:
Since an application developed with Graphical Designer cannot be loaded into Script Builder, Script Builder's speech administration utility cannot be used with the Graphical Designer feature package. However, if you have purchased the optional Graphical Speech Editor feature package, you may use it to record and edit Graphical Designer speech after it has been moved to the system using the transfer module.

For more information on Enhanced Basic Speech language offerings with Graphical Designer, see the optional feature package, "Enhanced Basic Speech". For more information on WholeWord or FlexWord Speech Recognition offerings for use with Graphical Designer, see the "Speech Recognition" feature packages section.

Hardware and Software Requirements

This section includes all necessary hardware and software requirements, as well as performance issues, and a list of optional equipment.

Hardware Requirements for PC

The hardware listed below is required for the installation and operation of Graphical Designer:

- VGA monitor (or better)
- Microsoft-compatible mouse
- 486DX 33-MHz personal computer (or higher)

  Your personal computer requires at least 8-Mbyte of RAM and a hard drive with at least 20-Mbyte of available space.

  The required amount of available disk space depends on the number and complexity of the applications you plan to develop on your personal computer and whether or not you plan to record speech. The entire Graphical Design software package requires 10-Mbyte of space on the hard drive. Plan for at least 10-Mbyte of additional free space available for the applications you develop.

  NOTE:
  You should plan on considerably more disk space than previously mentioned above if you plan to record speech. For help on determining the hard drive requirements for your application, contact the Technical Support Center.

- 3 1/2-inch diskette drive designed for reading 1.44-MB diskettes

Performance Issues

Although it is possible for the Graphical Designer to run on a personal computer with less capacity than a 486DX, performance of the Graphical Designer is much slower. Lucent Technologies does not support this type of installation.

If you have any questions on the performance of Graphical Designer on your 486DX, call the Technical Support Center.

Software Requirements

Your personal computer must have the following software installed:

- Graphical Designer Release 1.6
- MS-DOS Version 3.1 or higher
- Microsoft Windows 95, Micosoft Windows Version 3.1, or Microsoft Windows for Workgroups 3.11

  In Graphical Designer the Microsoft Windows software programs are forward compatible only. For example, you *cannot* modify applications created in Microsoft Windows 95 using Microsoft Windows Version 3.1. However, you *can* modify applications created in Microsoft Windows Version 3.1 when you upgrade to Microsoft Windows 95.

Optional Equipment

This section includes information about equipment for recording speech and for transferring applications over a network.

- Sound Blaster compatible card

  The sound card allows you to listen to speech that you record with the Graphical Designer. You can use this speech during simulation, as well as on the system. You can run Graphical Designer without a sound card; however, you will not be able to record or listen to speech during the simulation mode.

  NOTE:
  Speech that you record may not have the fidelity of the professionally recorded speech available from Lucent Technologies. If you are interested in professionally recorded speech once you have installed your application on your system, contact your local Lucent Technologies account team.

- Microphone

  Although any microphone is sufficient for recording speech with the Graphical Designer, the quality of the microphone you choose dramatically affects the fidelity of speech you record with Graphical Designer.

- Speaker

  Although any speaker is sufficient for listening to recorded speech with the Graphical Designer, the quality of the speaker you choose affects the fidelity of recorded speech you will hear with Graphical Designer.

Optional Equipment for Transferring Applications Over a Network

The Graphical Designer provides a local area network (LAN) option that allows you to transfer your applications directly from your personal computer to your system. To use this option, you need a standard Ethernet card and a WinSock driver (winsock.dll) installed on your personal computer.

For more information on this feature package, see *INTUITY™ CONVERSANT® System Application Development with Graphical Designer*, 585-310-764.

Graphical Speech Editor

This feature package provides a simple way of making changes to existing speech phrases by allowing you to cut, copy, and paste speech segments in either a speech file or across multiple speech files, as well as the ability to change the volume of individual speech segments.

You can build your own graphical speech editing environments using a product such as BitWorks for editing speech phrases and using the edited speech in your application. The GSE uses X-Windows and Motif graphical user interface provided with UnixWare 1.1.

Software and Hardware Requirements

The GSE toolkit can be supported on any V6.0 platform. The V6.0 Graphical Speech Editor package must be installed and operational.

This feature package also requires a Tip/Ring card to receive audio input for recording and to output audio speech. Speech recording can be performed over a telephone line. The GSE supports all V6.0 supported Tip/Ring circuit cards.

Because of the user interface in the Graphical Speech Editor, a serial mouse is also required and is supplied with the package. The serial mouse connects to the second serial port.

Table 5-6 lists Graphical Speech Editor capacities.

Table 5-6. Graphical Speech Editor Capacities

Item	Max. Number
Length of speech phrase stored in buffer, in minutes	4

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Speech Development, Processing, and Recognition*, 585-310-762.

Line Side E1-DEFINITY ECS

The Line Side E1-DEFINITY ECS feature package provides a 32-channel interface (30 voice + 2 signaling) between a customer-based DEFINITY ECS (G3V5) and the V6.0 system. It significantly improves system connectivity and reduces the number of cards required to support multiple channels.

Feature highlights include:

- Support for 30 telephone network connections with touch-tone detection
- Support for Line Side E1 facilities of DEFINITY ECS
- Call Transfer capability
- Script Builder compatibility
- ASAI compatibility with DEFINITY ECS
- Voice Response Integration (VRI) compatibility with DEFINITY ECS private branch exchanges using the converse vector step
- Call origination support for DEFINITY ECS private branch exchanges
- Detection of “forward disconnect” from far end
- Dial-tone detection to increase the speed of call transfers
- Support for intelligent call transfer by detecting call progress tones produced by DEFINITY ECS

NOTE:
Line Side E1 uses international channel associated signaling (CAS) HDB3 protocol level software. As implemented by DEFINITY Enterprise Communications Server, channel 16 is used for CAS, channel 0 is used for framing and other related data. The other 30 channels are used for voice.

Software and Hardware Requirements

This feature package requires that one or more of the following software packages and hardware components be installed and operational:

- INTUITY CONVERSANT System V6.0 Line Side E1 Interface Package — DEFINITY ECS
- E1 board driver
- ASP driver
- AYC21 circuit card
- At least one SSP or SP circuit card

Platform Maximums

Platform maximums, if the system is all E1, are:

- MAP/40 – Two E1 cards, for a maximum of 60 telephone network connections
- MAP/100(C) – Three E1 cards, for a maximum of 90 telephone network connections

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

Line Side T1-DEFINITY ECS

The Line Side T1-DEFINITY ECS feature package provides a 24-channel, digital interface between a customer-based PBX and the system. Line Side T1 uses existing T1 circuit card technology with new protocol-level software and user-interface modifications to significantly improve system connectivity and reduce the amount of hardware required to support 24 channels of digital service. This feature package is compatible with DEFINITY Generic 3 and Galaxy 8 and 9 Automatic Call Distributing (ACD) systems.

The highlights of the Line Side T1-DEFINITY ECS feature package include:

- Call Transfer capability
- Script Builder compatibility
- Full Call Classification Analysis (CCA) compatibility, including detection of intercept tones used by private branch exchanges for invalid extensions
- ASAI compatibility with DEFINITY switches
- Voice Response Integration compatibility with DEFINITY switches

The capabilities of the Line Side T1 vary depending on the implemented circuit card. For example, with Line Side T1 operating on the AYC21 circuit card, it supports intelligent transfer. With Line Side T1 operating on the AYC21 circuit card, it supports only blind transfer.

Software and Hardware Requirements

This feature package requires that one or more of the following software packages and hardware components be installed and operational:

- INTUITY CONVERSANT System V6.0 Line Side T1 Interface Package — DEFINITY ECS
- INTUITY CONVERSANT System V6.0 Line Side T1 Interface Package — Galaxy
- T1 board driver
- SSP board driver or SP board driver
- At least one SSP or SP circuit card

This feature package can be implemented on two different circuit cards:

- AYC21 circuit card
- AYC11 circuit card

Table 5-7 lists Line Side T1 capacities.

Table 5-7. Line Side T1 Capacities

Item	Max. Number	Notes
Telephone network connections	24	Per T1 circuit card (AYC21, AYC11, or AYC11)
T1 circuit cards	2–5	2 per MAP/40 5 per MAP/100C or MAP/100

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

Local Area Network Connectivity

In order to accommodate the flexibility needs for data connectivity and host interface, the data connectivity architecture of the system was changed in V5.0 to separate the physical connectivity from the access protocols. This change allows you to independently choose both a physical connectivity type (for example, SDLC) and an access method (for example, TCP/IP or SNA) in combinations that are compatible with their current data networks.

Transmission Control Protocol/Internet Protocol (TCP/IP) is a process-to-process protocol. TCP/IP within the system provides high speed data transmission over an Ethernet or Token Ring network.

Software and Hardware Requirements

This feature package requires the driver specific to the card be installed and operational:

- SMC Ethernet Streams Device Driver — supports the SMC ISA EtherCard circuit card
- SMC EtherPower Device Driver PCI — supports the SMC PCI Ethernet LAN circuit card
- Token Ring Hardware Support — supports the Token Ring circuit card

The hardware required on your system for using the TCP/IP protocol depends on your physical link layer (both may installed in the same system, but both are not needed):

- SMC Elite 16 Ultra Combo Adapter (EtherCard)
- SMC PCI Ethernet LAN circuit card (10 Mbps or 10/100 Mbps versions)
- IBM 16/4 ISA-16 Adapter (Token Ring card)

Table 5-8 lists Local Area Network Connectivity capacities.

Table 5-8. Local Area Network (LAN) Connectivity Capacities

Item	Max. Number
Number of remote database systems	4
Number of sessions per remote database connection	3

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

Multi-Port Asynchronous Communications Interface

This feature package provides hardware and software for additional asynchronous serial data connections to the platform. These connections can be used to support asynchronous host computers, serial printers, on-site and remote monitoring systems, or an extra modem in addition to the modem connected to the remote maintenance board.

The system provides two asynchronous communication ports as standard equipment. These ports, labeled COM1 and COM2, are separate and fully functional in addition to the eight ports provided by this feature package.

Software and Hardware Requirements

This feature package requires the Equinox Megaport/Megaplex STREAMS device driver and the Equinox Megaport Asynchronous Communications card be installed and operational.

In older existing platforms, the IPC-900 or CTC Gemini-1000 (with 8-port T-bar adapter hardware) and the Intelligent Ports Card driver are still supported, as these provide the same functionality.

Table 5-9 lists multi-port asynchronous communications capacities.

Table 5-9. Multi-Port Asynchronous Communications Capacities

Item	Max. Number	Notes
Additional physical asynchronous ports	8	These connections are in addition to the standard system COM1 and COM2 serial ports.
Data speed, in Kbps	9.6	

For more information on asynchronous communications, see *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

NetView Alarm Interface

The NetView Alarm Interface feature package interacts with V6.0 system software to allow you to monitor the system message as part of your current NetView environment. The system logs alarms and events that occur during voice system operations. The maintenance transmitter process scans this log to determine when the errors occurred and transmits critical, major, or minor errors to the host as operator-generated alerts (OGAs) over the 3270 host link.

Software and Hardware Requirements

This feature package requires the INTUITY CONVERSANT System V6.0 3270 NetView Alarm Interface package be installed and operational.

Table 5-10 lists NetView Alarms Interface capacities.

Table 5-10. NetView Alarms Interface Capacities

Item	Max. Number	Notes
OGAs accepted by the FIFO/SIB circuit card, per second	1	The maintenance transmitter sends OGAs as soon as possible in a first-in/first-out order.
Time between status checks when host connection is lost	5	Status checks are initiated by the maintenance transmitter.
Time required to resume sending OGAs once a connection is established	5	Transmission is controlled by the maintenance transmitter.
OGAs the maintenance transmitter can spool during period of host disconnection	100	The oldest spooled OGA will be discarded for each OGA over the first 100 received.

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

Primary Rate Interface

The primary rate interface feature package allows the system to communicate directly with a Lucent Technologies or AT&T private branch exchange or switch using the AT&T ISDN Primary Rate Interface (PRI). The ISDN PRI is a digital interface and therefore only supports E1 or T1 line usage.

Supported switches include:

- 4ESS®
- 5ESS®

  NOTE:
  5ESS does not support Non-Facility Associated Signalling (NFAS), so AYC21s must be used for support of more than 1 D-channel.

- DEFINITY — G3i, System 85, and System 75
- Phase 1 or Phase 2 Service Node Controller
- ISDN Network Controller

There are two different versions of the primary rate interface feature package that can be used with V6.0. The versions include:

- ISDN Primary Rate Interface

  This version of PRI supports ISDN-PRI at both the E1 and T1 rate and supports the older T1-only boards (AYC3B and AYC11) and the newer E1/T1 board (AYC21). It combines most of the features of the V5.0 Commercial and General PRI feature packages. It supports ISDN-PRI interfaces at the Script Builder, TAS Script, IRAPI, and General PRI library levels.

- Advanced PRI

  This version requires the preceding ISDN Primary Rate Interface version and provides a developer's toolkit for more advanced PRI services. It includes support for Flexible Alerting (equivalent to the Flexible Alerting provided in the V5.0 Network PRI version). It includes a developer's guide and sample applications that show how to go beyond the built-in features of the ISDN Primary Rate Interface version. There are sample applications that extend the IRAPI library to get or send additional Information Elements (IEs), exchange additional information messages with the switch, and use the General PRI library to more flexibly exchange messages with the switch.

  Due to the potential for signalling errors or fraud, and the development expertise required, this package is limited to Lucent Technologies, AT&T, or others with a need for this level of control. Development organizations within these companies may use the Advanced PRI version to develop other add-on applications that meet specific customer needs.

Software and Hardware Requirements

The PRI feature package requires that the INTUITY CONVERSANT System V6.0 ISDN Primary Rate Interface package is installed and operational.

This feature package also requires at least one E1 circuit card or T1 circuit card be installed. When an AYC21 card is used, the D-channel protocol processing can be done on the AYC21 that has the D-channel. An SP assigned to PRI is not required when using an AYC21. If an AYC11 or AYC3B (older T1-only cards) has the D-channel, then an SP card (AYC2C or AYC9, but not AYC43) must be assigned to PRI to perform the D-channel protocol processing. Only one SP can be assigned to PRI, hence support for more than one D-channel requires use of an AYC21.

ISDN-PRI is supported at the E1-rate on AYC21 circuit cards when using separately purchased protocol converters (by ACULAB Ltd.) for DASS-2 and DPNSS protocols in the UK. A maximum of three AYC21 cards may be used at the E1 rate, each supporting a 30B+D configuration.

Table 5-11 lists primary rate interface capacities.

Table 5-11. Primary Rate Interface Capacities

Item	Max. Number	Notes
Data channels on AYC21, per system	5	For example, up to five 23B+D interfaces are supported when at least four use an AYC21.
Supported voice channels per system at the T1 rate	119	119 B-channels are supported when using 1 D-channel (for example, 119B +D) OR 115 B-channels are supported when using five 23B+D interfaces Depends on the capability of the switch. Not all switches support all PRI configurations.
Supported voice channels per system at the E1 rate	90	One, two, or three 30B+D interfaces are supported.
SSP or SP cards required to support PRI	1 or more	An SP or SSP is required for voice coding or playback with all E1 or T1 boards. An SP, but not an SSP, assigned to PRI is required only for AYC11 or AYC3B circuit cards. Existing V5.0 configurations using AYC11 are still supported, but expanding the number of D-channels requires an AYC21.

NOTE:
PRI on the DEFINITY G3i supports a maximum of 95B+D interfaces and 23B+D. PRI on 5ESS requires a separate D-channel for each T1 (for example, five 23B+D can be used).

For more information on ISDN PRI, see *INTUITY™ CONVERANT® System Version 6.0 Communication Development*, 585-310-763. For more information about Advanced PRI, consult a Lucent Technologies sales representative.

Script Builder

The Script Builder feature package is an application generator for the system. With it, you can create applications that run on the V6.0 system. It is menu-driven. You can create applications with Script Builder using intuitive windows, forms and keys.

It is targeted toward application designers that are familiar both with the specific application and with programming concepts. Specifically, the designer should be familiar with high-level programming methods used in languages such as BASIC, COBOL, Pascal, and C language. Experience with a database application such as dBASE, LOTUS 1-2-3, or ACCESS would be helpful. Although not required, it is helpful to have some basic knowledge of the UnixWare operating system. A basic knowledge of telephony is also beneficial when working with the system and Script Builder.

Script Builder enables you to access Dial Pulse Recognition (DPR) through its application menu if you have purchased the optional DPR feature package. Script Builder also allows you to select intelligent call transfer when the Line Side E1 or Line Side T1 is assigned to the AYC21.

Software and Hardware Requirements

This feature package requires the INTUITY CONVERSANT System V6.0 Script Builder package be installed and operational. No additional hardware is required.

There are many subtle application capacities that provide limits or constraints while performing application development using Script Builder. These capacities are listed in Table 5-12.

Table 5-12. Script Builder Application-Related Capacities

Item	Maximum Number	Notes
Characters in application name	11	
Characters in field names	24	
Applications on system	Restricted only by disk space	
Call data events per application	100	For numeric or 12-character fields
	50	For 7-character strings (telephone numbers)
	33	For 8-character dates
	25	For 14-character credit card numbers
	14	For 24-character names
Transaction statements	1000	Action steps (for example, “Answer Phone,” “Announce” only) recommended, not currently enforced in software)
Script labels per application	2400	Label maximum per application
Length of comment line (characters)	50	
Arguments passed between external function and transaction	5	
Label name length (characters)	20	
Digits accepted for a prompt and collect action step	64	Either touch tones or spoken
Tries to collect in prompt and collect	9	
Initial time-out in prompt and collect	60 sec	
Interdigit time-out in prompt and collect	60 sec	
Cases of correct input within the non-standard checklist of a prompt and collect	12	
Touch tones accepted for call transfer	16	Minimum is 1

Continued on next page

Table 5-12. Script Builder Application-Related Capacities — *Continued*

Item	Maximum Number	Notes
Channels that can simultaneously use background feature	48	See *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760, for additional information.
Digits used in phone number of call bridge	24/16	T1 (all types) has a limit of 15 digits for outdialing; minimum is 1
Digits used in DNIS number passed from central office	16	Incoming DNIS limited to 15 for PRI; configured in switch administration screens; see *INTUITY™ CONVERSANT® System Version 6.0 Administration,* 585-310-591
Arguments passed between applications using “Execute External Action”	10	
Data space available per channel using “Execute External Action,” in bytes	552	Characters used in argument passing
External function names length (characters)	12	
Phrase length for coding messages, in seconds	999	If 0 is specified, coding continues indefinitely
Phrases coded per system	48,000	
Talkfiles coded and stored	256	
Initial time-out to detect speech during a code session, in seconds	30	Minimum is 0; default is 5.
Completion time-out to detect silence during a code session, in seconds	30	Minimum is 0; default is 5.

Capacities and constraints are also referenced in *INTUITY™ CONVERSANT® System Version 6.0 Application Design Guidelines*, 585-310-670, and *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760.

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760.

Script Builder FAX Actions

The Script Builder FAX Action feature package allows you to send faxes to callers of system applications. You can also receive faxes from system application callers.

The Script Builder FAX Actions package is easy to use and can be incorporated into any Script Builder application.

FAX Actions allows you to:

- Transmit a stored graphic image to the caller.
- Transmit dynamically created text information to the caller.
- Attach a customized cover page to the fax information requested by the caller.
- Receive a fax from the caller.
- Develop applications that send faxes to callers or receive faxes from callers quickly and easily.
- Integrate fax capabilities into existing INTUITY CONVERSANT applications.
- Automatically retry numbers if the called fax machine is busy.
- Optionally transmit faxes when toll rates are lower, for example, after 5 p.m.
- Support both Tip/Ring and T1 callers.
- Transmit multiple faxes to callers.

NOTE:
The FAX_Current, FAX_Get, and FAX_CNG actions cannot be used on T1 channels. The FAX_Current and FAX_Get actions can work on Line Side T1 channels if the transfer operation does not require the presence of a dial tone.

Software and Hardware Requirements

To use the Script Builder FAX Actions package, you will need:

- A functional V6.0 or V5.0 system that can answer incoming calls
- Script Builder (or Global Script Builder)
- Script Builder FAX Actions software
- At least one fax circuit board (Brooktrout TR114+I4L or TR114-I4L)

NOTE:
The V6.0 system will not support FAX Attendant. If you currently have FAX Attendant installed, you may upgrade to V6.0, but you must remove the FAX Attendant software package from your system.

The Script Builder FAX Actions package consists of the actual actions that work with Script Builder to provide fax functionality and the "run-time" environment necessary to support applications that use the actions. You *can* install the Script Builder FAX Actions package on a system without Script Builder. In this case, you will be able to run applications developed on other systems that contain Script Builder. Without Script Builder, however, you will not be able to use Script Builder FAX Actions to develop applications.

Table 5-13 lists Script Builder FAX Actions application-related capacities.

Table 5-13. Script Builder FAX Actions Application-Related Capacities

Attribute	Max. Number	Notes
Talkfiles coded and stored	256	
Initial time-out to detect speech during a code session, in seconds	30	Minimum is 0; default is 5.
Completion time-out to detect silence during a code session, in seconds	30	Minimum is 0; default is 5.

The actions that come with Script Builder FAX Actions work like any other Script Builder actions that appear in the Script Builder Actions List. Use the actions to incorporate fax functionality into your system application. You use the Script Builder FAX Actions administrative windows to load, view, and print the graphical images your application transmits to the caller. Text files can be created in advance or "in real-time" based upon caller input, if desired, and then transmitted to the caller. Faxes can be received from callers and placed into any directory specified by your application.

Some Uses for Script Builder FAX Actions in Your Applications

The following list suggests how to use Script Builder FAX Actions in various applications:

- Company brochures

  Callers interact with an application to request product brochures by fax transmission. The product brochures may be sent immediately or at a later time when the telephone rates are lower. They may also be sent on the current call if the caller is calling from a fax machine.

- Bank account records

  Callers enter an account number and then receive a fax of that account status including a list of the last 20 checks that were cleared through the account. Callers can fax their loan application into the system.

- Real estate information

  Prospective home buyers notice a sign in the front yard of a house they are interested in purchasing. They call the number on the sign, enter the house identification code, then receive a fax of the house data sheet including a floor plan, asking price, and the name of the real estate agent.

- Company savings plan records

  Employees call the automated administrator of their company savings plan and request the most current account statement. They can then get their latest account statements immediately via fax, instead of waiting until the next quarterly statement.

- Medical records

  Physicians call a single telephone number and listen via text-to-speech (TTS) to up-to-date patient records supplied by the hospital, pharmacy, or laboratory. They can then have the medical records faxed to them in their automobile or office.

- Customer service information

  Customers call an application that allows them to receive faxes about product/system maintenance issues and the resolutions to those issues. They can listen to the issue resolutions via audiotext or TTS or can request a fax of the issue resolution. If they want immediate attention, they can transfer to a customer service agent.

- Hotel/conference services

  A hotel simultaneously hosting two industry conferences can provide an automated service to organizers of both conferences. These services allow conference attendees to automatically register and pay for the conference, receive a fax of their confirmed reservation, and receive a fax of a map that provides instructions on how to get to the hotel. The service also allows attendees to hear conference agendas and descriptions of technical sessions, receive faxes about both conferences, register for technical tutorials, receive a faxed registration confirmation, and listen to a replay of the conference keynote speech which is automatically added to their room charge.

- Tax form distribution

  Corporate and individual tax payers call into an application that allows them to retrieve tax forms and directions for their use. Callers may also leave their completed tax form on the system.

- Callers queued in ACD

  Callers who reach a service bureau are placed in an automatic call distributor (ACD) queue awaiting the availability of an organization representative. While in the ACD, callers listen to information about new products and services and can elect to receive information about these products and services via fax.

- Travel/airline reservations

  An airline or travel agency offers customers the option of receiving a fax of all flights that are consistent with their travel needs. Once a reservation is made, the customer can receive a faxed confirmation of the travel arrangement.

- News/wire service

  Subscribers to a newspapers, other publications, and wire service can receive late-breaking news reports via fax by dialing a voice-response application.

- Brokerage services

  A brokerage house offers its callers a voice-response service that allows the caller to buy and sell stocks and bonds. The caller receives a fax confirming the transaction.

- Shipping

  Shipping company customers dial a voice-response application and request a fax with the latest status information about their shipping job and/or a duplicate of their bill of lading.

- Order entry/verification

  A manufacturer's representative contacts a supplier via the supplier's voice-response application and requests several spare parts. The representative receives a fax with the order confirmation.

  For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Application Development with Script Builder*, 585-310-760.

Software Upgrade Assistance Package

This optional feature package assists in the task of software upgrades to the V6.0 system platform (V6.0 Update 1). The software generic upgrades supported by this package include V3.1, V4.0, V4.0i, and V5.0.

V6.0 Update 1 introduces the concept of an unattended upgrade. This tool runs automatically and unattended after the initial setup. The initial setup takes approximately 5 minutes. The tool almost fully automates the following upgrades:

- V6.0 to V6.0 Update 1
- V5.0 with no hardware changes or operating system reload to V6.0 Update 1

NOTE:
Additional upgrade steps may be required on systems with third party applications.

The software upgrade assistance packages automates the following steps during an unattended upgrade

1. Removes any patches to Intuity CONVERSANT packages.
2. Backs up the ORACLE database on another part of the hard disk.
3. Removes ORACLE packages and database.
4. If ASAI packages exist on the system, it preserves the configuration data and removes the packages.
5. Overlays all packages that have changed in V6.0 Update 1 and preserves existing configuration data.
6. Restores the ORACLE database.

The software upgrade assistance package also partially automates the following upgrades:

- V3.1, V3.1.1, V4.0, V4.0i to V6.0 Update 1
- V5.0 with hardware changes or an operating system reload to V6.0 Update 1

For complete information about performing an upgrade, see *INTUITY CONVERSANT System Version 6.0 Upgrade*, 585-310-183.

Speech Recognition

Speech recognition is a capability that allows the system to recognize and respond to spoken voice responses from the caller. Certain applications require minimal or no touch-tone input for a number of reasons, including the fact that the caller does not have access to DTMF facilities (they are using a rotary dialed phone) or would rather utilize a more simple method of data input.

Because of the differences in speech recognition applications, there are two distinct methods of providing this feature package:

- WholeWord speech recognition
- FlexWord speech recognition

NOTE:
Previous system releases have offered speech technologies on a per system basis. V6.0 offers speech technologies on a *channels per system* basis. WholeWord and FlexWord can be added on a channels per system basis.

For more information on both WholeWord and FlexWord speech recognition, see *INTUITY™ CONVERSANT® System Version 6.0 Speech Development, Processing, and Recognition*, 585-310-762.

WholeWord Speech Recognition

WholeWord speech recognition provides a *whole word* method of recognition by comparing an entire spoken word with a statistical model of the same word spoken by thousands of different people.

NOTE:
All WholeWord speech recognition language packages now support connected digit recognition and barge-in.

WholeWord speech recognition is best suited to tasks where the required vocabulary is available. If a WholeWord vocabulary that meets your specific needs is not available, FlexWord may be more appropriate to your needs. FlexWord speech recognition is described in "FlexWord Speech Recognition."

WholeWord custom vocabulary packages are also available. If special words such as "checking," "savings," etc need to be recognized, Lucent Technologies can develop the software to recognize those requested words by collecting speech samples of those requested words, and creating statistical models of each word.

Standard vocabularies for WholeWord speech recognition are available in the following languages:

- US English
- Canadian French
- Latin-American Spanish
- Brazilian Portuguese*
- UK English
- Australian English
- German
- Castilian Spanish
- Japanese
- French*
- Dutch*

NOTE:
An asterisk (*) denotes WholeWord languages new to V6.0. They are supported *only* on the SSP, not on the SP.

The V6.0 system also supports bilingual WholeWord speech recognition on the SSP for all languages supported.

In addition, the following languages are supported for bilingual WholeWord speech recognition on the SP:

- US English
- Canadian French
- Latin-American Spanish
- Australian English
- Castilian Spanish

Software and Hardware Requirements

This software package requires that at least one of the speech recognition software packages, as well as at least one SSP card (for languages new to V6.0 and previously offered languages) or one SP circuit card and one CMP circuit card (for previously offered languages) be installed and operational.

Table 5-14 lists WholeWord speech recognition capacities.

Table 5-14. WholeWord Speech Recognition Capacities

Item	Max. Number	Notes
Supported languages in use per SP	1	German, UK English, Japanese
Supported languages in use per SP	2	US English, Canadian French, Latin-American Spanish, Australian English, Castilian Spanish
Supported languages in use per SSP	2	Any two WholeWord packages can be in use simultaneously
Channels of simultaneous speech recognition per SSP card without barge-in	15	SSP dedicated exclusively to WholeWord
Channels of simultaneous speech recognition per SSP card with barge-in	10	SSP dedicated exclusively to WholeWord
Channels of simultaneous speech recognition per CMP card	6	SP dedicated exclusively to WholeWord
Connected digits recognized (using standard recognition types)[1]	10	Application dependent; recognition accuracy improves significantly if fixed length is used
Custom recognition types per SP	20	Application dependent
Custom vocabulary words per SP		Application dependent on quality of the model

1. 24 connected digits are recognized, using standard recognition types, in *US English only*.

For more information on the appropriate number of digits (0-9) and commonly used synonyms for each WholeWord standard vocabulary package, see Chapter 4, “Recognizing WholeWord Speech Input,” in *INTUITY™ CONVERSANT® Speech Development, Processing, and Recognition*, 585-310-762.

For more information on WholeWord speech recognition capacities, see Chapter 4, “Recognizing WholeWord Speech Input,” in *INTUITY™ CONVERSANT® Speech Development, Processing, and Recognition,* 585-310-762.

FlexWord Speech Recognition

FlexWord speech recognition provides a different method of constructing and recognizing speech vocabularies than WholeWord does. The FlexWord speech recognition package relies on phonemic recognition.

The English language is made of approximately 40 phonemes. These phonemes are units of sound that, when strung together in particular orders, form recognizable words. The word “sales,” for example, consists of four phonemes: “s-A-l-z.” The FlexWord speech recognition package operates on this principle so that custom vocabularies can be created much more easily and cheaply than if done with WholeWord technologies. Other languages are also available for FlexWord speech recognition.

FlexWord vocabularies are produced on a per-customer basis. Because FlexWord vocabularies are much easier and less time consuming to construct, it provides customers with a cost-effective method of designing large, customized vocabularies.

The system also incorporates FlexWord technology improvements, namely, word spotting and phrase screening, into the FlexWord Speech Recognition package. Word spotting provides the ability to search past extraneous speech input during recognition. Phrase screening provides the ability to reject speech that is outside the FlexWord vocabulary.

V6.0 provides enhancements to the FlexWord recognition feature by providing a FlexWord Toolkit feature package that enables customers to define application-specific vocabularies. For more information, see ‘‘FlexWord Toolkit’’ in this chapter.

FlexWord speech recognition is available in the following languages:

- US English
- German
- Spanish
- French*
- Japanese*

NOTE:
An asterisk (*) denotes a FlexWord language new to V6.0. It is supported *only* on the SSP, not on the SP.

Software and Hardware Requirements

This software package requires that one of the Speech Recognition software packages, as well as at least one SSP card (for languages new to V6.0 and previously offered languages) or one SP circuit card and one CMP circuit card (for previously offered languages) and the ASP driver be installed and operational.

Table 5-15 lists FlexWord speech recognition capacities.

Table 5-15. FlexWord Speech Recognition Capacities

Item	Max. Number	Notes
Words in a wordlist	500	
Wordlists	200	
Total words(phrases)	2000	If you have an application that requires more than 2000 words/phrases, contact your Lucent Technologies representative for assistance.
Channels of simultaneous speech recognition per SSP card	15	SSP card dedicated exclusively to FlexWord, without barge-in
Channels of simultaneous speech recognition per SP/CMP pair	4	SP card dedicated exclusively to FlexWord, without barge-in
Supported languages	1	One language package in use per system: US English, Japanese[1], French[1], German, Spanish

1. FlexWord languages new to V6.0. Supported only on the SSP card, not on the SP card.

For more information on the FlexWord speech recognition feature package, see Chapter 5, “Recognizing FlexWord Speech Input,” of *INTUITY™ CONVERSANT® Speech Development, Processing, and Recognition,* 585-310-762.

Synchronous Host Interface

The synchronous host interface is a combination of hardware and software designed to allow the transmission of information over the network. The host interface software allows up to 128 logical units (that is, 3278 Model 2 terminals) connected to it. The host interface card is typically linked to a front-end processor and uses either synchronous data link control (SDLC) or token ring data streams.

The host interface provides the ability for application to get data from the host computer through the use of a host DIP.

The customer can develop methods to integrate the system OA&M with network management procedures provided by the host, such as NetView. Additional file transfer capabilities can be obtained with the Enhanced File Transfer feature package.

Software and Hardware Requirements

The software that must be installed are various combinations of the following Host Interface software packages:

- Link levels — The link level package(s) needed depend on the type of protocol that is being used and the type of interface card (hardware).
  - — linkix_sib, Link Level — For use with the FIFO/SIB circuit card
  - — linkix_coproc, Link Level — For use with the PC/XL circuit card (must be Revision D or later)
  - — linkix_tkrn, Link Level — For use with the Token Ring circuit card

  NOTE:
  The SDLC link level and Token Ring link level packages can be installed and operate on the same system. However, two SDLC packages (sib and coproc) *cannot* be installed on the same system. The installation procedure prevents these packages from being installed on the same system.

- SNA levels (installable only *after* the link level package)
  - — linkix_sna_128lu, SNA Level — For support of 128 LUs

- Feature Level 1 packages — The packages below, except for NetView Alarms (netman), are used in all SNA configurations. The NetView package is used only in NetView Alarms monitoring systems.
  - — linkix_3270, Feature Level 1 — The LINKix 3270 feature package
  - — linkix_netman, Feature Level 1 — The LINKix management utilities feature package
  - — linkix_mgmt, Feature Level 1 — The LINKix NetView feature package
- Feature Level 2 packages (installable only *after* the feature level 1 packages)
  - — linkix_hte, Feature Level 2 — The LINKix HLLAPI TE feature package
- System host packages (must be installed in this order) — These packages work with the LINKix software to give you host interface capabilities.
  - — INTUITY CONVERSANT V6.0 Synchronous Host Interface
  - — INTUITY CONVERSANT V6.0 3270 Enhanced File Transfer
  - — INTUITY CONVERSANT V6.0 3270 NetView Alarm Interface
- Token Ring Hardware Support — To support the Token Ring circuit card (UnixWare 1.1.2 base software)

The hardware required for this feature package is one of the following combinations:

- One FIFO/SIB circuit card or one PC/XL (Revision D or later) circuit card to support 128 LUs
- Two FIFO/SIB circuit cards to support dual host connectivity
- One Token Ring circuit card
- One or two FIFO/SIB circuit cards and one Token Ring circuit card
- One PC/XL circuit card (Revision D or later) and one Token Ring circuit card

NOTE:
V6.0 does not support two PC/XL circuit cards or a PC/XL circuit card and a FIFO/SIB circuit card in the same system.

This feature package may also require the following additional equipment:

- RS-232-to-V.35 interface converter
- External modem
- RS-232 extension cable
- Other appropriate cables

Table 5-16 lists host interface capacities.

Table 5-16. Host Interface Capacities

Item	Maximum Number	Notes
Host screen initial time-out	300 sec	Amount of time to wait for any screen to arrive from host (10 is recommended; default is 60)
Logical Unit availability time-out	300 sec	Time to wait for Logical Unit to become available while phone rings before answering
Unrecognized screen time-out	300 sec	Time to wait for valid screens to become available after GET_HOST (returns invalid screen)
Number of Logical Units	128	Requires 1 PC/XL circuit card (Revision D or later) or 1 FIFO/SIB circuit card
Logins/passwords for host interface	128	Must have same amount as Logical Units specified
Shared host applications	8	Multiple applications sharing same host application
Host screen identifier length in characters when defining host screens	128	
Field length in characters when used in host screens	128	
Data passed per host screen, in bytes	988 - X	X = no. of fields defined (application dependent). Define a second screen if additional bytes required

For more information on this feature, and other features that use host interface communications, see *INTUITY™ CONVERSANT® System Version 6.0 Administration,* 585-310-591.

T1 E&M Protocol

The T1 E&M protocol feature package provides both T1 and E1 signaling types and three addressing types:

- DTMF
- MF
- Dial pulse

NOTE:
The T1 E&M protocol feature package is no longer included with the E1/T1 driver.

Software and Hardware Requirements

This feature package requires that the INTUITY CONVERSANT System V6.0 T1 E&M package be installed and operational.

It supports the AYC21 circuit card, and offers software and firmware to operate older AYC11 and AYC3B circuit cards.

For more information on this feature, and other features that use the T1 E&M protocol, see *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

Text-to-Speech

The Text-to-Speech (TTS) feature package allows an application to play US English speech (in male voice only) directly from ASCII text by converting that text to synthesized speech. The text can be used for text retrieved from a database or host, or for prompts, and can be spoken in an application with synthesized speech. TTS application development is supported through the Script Builder software package.

NOTE:
Previous system releases have offered speech technologies on a per system basis. V6.0 offers speech technologies on a *channels per system* basis. Text-to-Speech can be added on a channels per system basis.

TTS is an alternative to using prerecorded phrases for voice response. It can be essential in some applications that must speak dynamic text (for example, names and addresses) and that have large speakable text (for example, electronic news). Without TTS, these types of applications can require many hours of recording and much disk space. These applications can also use TTS for static text for consistency.

The TTS technology constructs speech by concatenating speech items for synthesis. When constructing speech, parameters such as pitch and duration are adjusted to make the outcome sound more natural. In addition, the ASCII text is preprocessed to expand abbreviations. For example, “Dr.” would be expanded to “doctor” or “drive,” depending on the context.

Software and Hardware Requirements

This feature package requires that the INTUITY CONVERSANT System V6.0 Text-to-Speech package, as well as an SSP circuit card or SP circuit card be installed and operational.

Table 5-17 lists Text-to-Speech capacities.

Table 5-17. Text-to-Speech Capacities

Item	Max. Number	Notes
Concurrent instances of TTS on one dedicated SSP card	60	
Concurrent instances of TTS on one dedicated SP card (AYC9 only)	6	An error is generated if a script attempts to use TTS and the maximum number of TTS channels are being used. An attempt is made every 2 seconds to access an SP resource.

For more information on this feature package, see *INTUITY™ CONVERSANT® System Version 6.0 Speech Development, Processing, and Recognition*, 585-310-762.

Requirements and Specifications

6

Overview

This chapter provides information on the requirements and specifications that each V6.0 system requires for proper operation.

These requirements include:

- Platform specifications including:
  - Power requirements
  - Space requirements
  - Environmental considerations
  - System specifications
- Telephone network characteristics
  - Tip/Ring telephony interface specifications
  - T1/PRI telephony interface specifications
- Data communication characteristics

Purpose

The purpose of this chapter is to

- Present the requirements and specifications for each platform and telephone network.
- Describe data communications characteristics.

Platform Specifications

This section presents the following specifications:

- Power requirements for platforms, printers, and monitors
- Space requirements
- Environmental specifications, including temperature and humidity requirements

Power Requirements

This section describes the power requirements for each multi-application platform (MAP). Certain power cabling and requirements are standard across all platforms:

- Each MAP, modem, and printer should be located near a power receptacle.
- The AC power output receptacle on the back of each unit is to be used *only* for a monitor. Never plug any other device into this receptacle.
- Communication cables must be kept separate from power cables. Installation of communication and power cables must be in accordance with National Electrical Codes (NEC) and country-specific requirements.

Table 6-1 lists the power that must be available for each MAP/100C, MAP/100, MAP/40, or MAP/5P.

Table 6-1. Power Requirements for MAPs

Attribute	MAP/100C	MAP/100	MAP/40	MAP/5P
Volts (VAC)	110-130 +/-5%	110-250 +/-5%	110-250 +/-5% switch selectable	100-120 +/-5% 200-240 +/-5% switch selectable
Volts (VDC)	-48	none	none	none
Hertz (Hz) (power)	60	50–60	47-63	50-60
Phase	Single	Single	Single	Single
Breaker amps	20(AC), 25(DC)	15(AC)	8(AC)	4(AC)
Nominal current draw (amps)	7(AC), 15(DC)	7(AC)	4(AC)	1.5 (AC)
Power input	NEMA 5–15P	NEMA 5–15P	NEMA 5–15P	NEMA 5-15P
Power output	600 watts	600 watts	325 watts	200 watts
Heat dissipation	2500 BTU	2500 BTU	1100 BTU	700 BTU

Table 6-2 lists the power that must be available for each optional printer and monitor:

Table 6-2. Power Requirements for Printer and Monitor

Attributes	Printer	Monitor
Volts (VAC)	110-220 +/-5%[1]	110–240 +/5% auto sensing
Hertz (Hz) (power)	50–60 Hz[1]	50–87 Hz
Phase	Single	Single
Breaker amps	2(AC)	1(AC)
Input cord	NEMA 5–15P (6 feet)[1]	Included with monitor (3 feet)
Unit input	IEC-320[1]	IEC-320

1. Varies with printer selected. See Chapter 2, ‘‘Hardware’’ for list of supported printers.

Space Requirements

Table 6-3 details the space requirements for the MAP/100C, MAP/100 and MAP/40, including the following considerations:

- The MAP/100C is only capable of rack-mounting in a standard, 24-inch commercial frame.
- The MAP/100 can be mounted in a 19-inch commercial frame or can sit desk-side on the floor.
- The MAP/40 is used in a desk-side, tower fashion.
- The MAP/5P is used in a desk-side, mini-tower configuration.

Table 6-3. Space Requirements for MAPs

Platform	Width	Height	Depth	Weight
MAP/100C in frame	22.6 in.	24 in.	14.5 in.	140 lbs.
MAP/100 in frame	19.5 in.	24 in.	22 in.	140 lbs.
MAP/100 desk-side	17.5 in.	21.5 in.	22 in.	140 lbs.
MAP/40 desk-side	12.6 in.	17.7 in.	20 in.	37 lbs.
MAP/5P desk-side	28 cm (11 in.) with stabilizing feet	41 cm (16 in.) with stabilizing feet	46 cm (18 in.)	13 kg (29 lbs)

Environmental Considerations

Locate each of the platforms in an area able to maintain the temperature and humidity requirements shown in Table 6-4 and Table 6-5, respectively.

Table 6-4. Temperature Requirements for MAPs

Operating State	Temperature
Operating	+10 to +38C
Nonoperating	-40 to +60C

Table 6-5. Humidity Level Requirements for MAPs

Operating State	Humidity
Nonoperating	5 to 95%, noncondensing
Continuous operating	20 to 55%, noncondensing
Short-term operating	20 to 80%, noncondensing

Telephone Network Characteristics

Table 6-6 details the general telephone network characteristics for the V6.0 system.

Table 6-6. Telephone Network Characteristics for V6.0 System

Attribute	Characteristic
Telephone network connections	■ MAP/100 and MAP/100C: — 90 maximum transactions when system is all E1 — 96 maximum transactions when system is all T1 — Telephone network connections not used for transactions are available for bridging ■ MAP/40: — 60 maximum transactions when system is all E1 — 48 maximum transactions when system is all T1 — Telephone network connections not used for transactions are available for bridging ■ MAP/5P:
Connectors	Analog: RJ21X or RJ25C
	Digital: ■ AYC11 or AYC3B — 15-pin D subminiature ■ AYC21 — RJ48C modular or 75 Ohm BNC Coaxial
Lines	Analog — (loop start) signaling Digital E1 — (CAS) signaling Digital T1 — (E&M) signaling Line Side E1 Line Side T1 Digital ISDN — ISDN PRI Layer 1 signaling

Tip/Ring Telephony Interface Specifications

Table 6-7 through Table 6-12 detail the various Tip/Ring telephony interface specifications.

Table 6-7. Tip/Ring Circuit Card General Specifications

Attribute	Value
Type of service	Loop-start POTS
Loop current detection	15 mA minimum
Ringing voltage detection	88 VRMS at 20 Hz (nominal)
Ringer equivalence for Tip/Ring	■ 0.5 B for AYC5, AYC5B, AYC6 and AYC6B ■ 0.8 B for AYC28, AYC10
Wink detection[1]	80–800 msec
Flash duration[1]	40–1550 msec
Register recall[1]	Timed break/earth recall
Answer delay[1]	0–10 rings

1. These attributes are adjustable through analog switch interface (ASI) packages.

For more information on changing these attributes via an analog interface screen, see Chapter 5, “Switch Interface Administration,” in *INTUITY™ CONVERSANT® System Version 6.0 Administration*, 585-310-591.

Table 6-8. Tip/Ring Circuit Card DTMF Tone Detection Specifications

Attribute	Value
Digits	0–9, asterisk (*), pound sign (#), A–D
Amplitude[1]	+1 to -30 dBm total power (nominal tones)
On/off timing	80 msec minimum on, 23 msec off
Gaps bridged	23 msec
Signal/noise ratio	23 dB (nominal tones at -19 dBm total power)
Twist	+4 to -8 dB (high to low tone)
Frequency deviation	+/-1.5%

1. This attribute is adjustable through analog switch interface (ASI) packages.

Table 6-9. Tip/Ring Circuit Card Transmission Level Plan

Attribute	Value
Input gain	0 dB fixed
Output gain	0 dB fixed
IVOL (card voice coding only)	Input gain selectable from -9 to +12 dB
OVOL (card voice playback only)	Output gain selectable from -9 to +12 dB

Table 6-10. Tip/Ring Circuit Card DTMF Addressing Specifications

Attribute	Default Value
Digits	0–9, asterisk (*), pound sign (#), A–D
On/off timing[1]	100 msec on, 60 msec off
Frequency	Precise tones
Twist[1]	0 dB
Amplitude[1]	-6 dBm per frequency

1. These attributes are adjustable through analog switch interface (ASI) packages.

Table 6-11. Tip/Ring Circuit Card Dial Pulse Addressing Specifications

Attribute	Default Value
Break time[1]	60 msec
Make time[1]	40 msec
Inter-digit time[1]	600 msec

1. These attributes are adjustable through analog switch interface (ASI) packages.

Table 6-12. Tip/Ring Circuit Card Default Progress Tone Detection Specifications

Tone	Frequency [1] (Hz)	Amplitude [1](dBm)	S/N Ratio (dB)	Maximum Twist (dB)	Frequency Deviation (%)	Cadence[1]
Dial tone	350 + 440	+1 to -24	55	+3	+/-0.5	Present for 1 sec
Recall dial tone (stutter dial tone)	350 + 440	+1 to -24	55	+3	+/-0.5	3 cycles of 120–150 msec on, 120–150 msec off, followed by 1 sec on
Ringback	440 + 480	+1 to -24	55	+3	+/-0.5	1000–2000 msec on, 3000-4000 msec off
Busy	480 + 620	+1 to -24	55	+3	+/-0.5	60 IPM, 350–500 msec on, 500–650 msec off
Reorder (Fast busy)	480 + 620	+1 to -24	55	+3	+/-0.5	120 IPM, 180–250 msec on, 250–350 msec off

1. These attributes are adjustable through analog switch interface (ASI) packages.

See Chapter 2, “Analog Telephony Interfaces” in *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763, for more information on Tip/Ring circuit card transmission level plans.

See Chapter 5, “Switch Interface Administration,” in *INTUITY™ CONVERSANT® System Version 6.0 Administration*, 585-310-591, for more information on how to change Tip/Ring circuit card attributes via the Analog Switch Interface (ASI) packages.

Digital Telephony Interface Specifications

Table 6-13 through Table 6-18 detail the various digital interface specifications for all T1/E1 protocols.

Table 6-13. Digital Telephony Interface General Specifications

Attribute	Specifications	
	AYC11 and AYC3B	**AYC21 Circuit Card**
Physical connector	Subminiature DB-15 male receptacle	8-pin modular RJ-48C
FCC registration	AS593M-17926-VM-E	Pending
Safety approval	■ UL 1459 type approval for US markets ■ CSA 22.2 type approval for Canadian markets ■ EN 60950 type approval for European markets ■ AS3260 and TS-001 for Australian markets ■ JATE for Japanese markets ■ NOM for Mexican markets	
Signal regeneration	CSU required over 200 meters (655 feet)	
Loopback capability	CSU required for remote capability	
TLP at DS-1 interface	0 ELP, 0 DLP	
TLP at TDM interface	0 ELP, 0 DLP	
Call progress tone frequency[1]	Precise tone frequencies	Precise tone frequencies can be tuned to accomodate local standards
Call progress tone generation levels[1]	-6 dBm total (nominal)	Same, but can be tuned through digital switch interface packages
Call progress tone timing[1]	Ringing: 2 sec on, 4 sec off Busy: 0.5 sec on, 0.5 sec off	Same, but can be tuned through digital switch interface packages

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Table 6-13. Digital Telephony Interface General Specifications — *Continued*

Attribute	Specifications	
	AYC11 and AYC3B	**AYC21 Circuit Card**
Call progress tone detection[1]	Not supported, must use optional CCA feature if this capability is required (even with full CCA, Line Side T1 does not detect dial tone	Supported with Line Side DEFINITY® protocol (either at T1 or E1 transmission rate)
DS-1 timing source	Slave to DS-1 source (loop timed)	
DS-1 timing (free running)	Stratum 4	
Suggested CSU types	Paradyne (PEC 21581-ESF), Verilink 551VST List 2, or equivalent	
Supported configurations	Tie trunk (robbed-bit E&M), ISDN-PRI, Line Side T1	Tie trunk (robbed-bit E&M), E1 (CAS), ISDN-PRI (E1/T1), Line Side E1, Line Side T1
Dual tone multifrequency (DTMF) output timing	70 msec on, 70 msec off	Same, but is tunable through digital switch interface packages
DTMF output levels	-8 dBm per frequency (nominal)	Same, but is tunable through digital switch interface packages

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Table 6-13. Digital Telephony Interface General Specifications — *Continued*

Attribute	Specifications	
	AYC11 and AYC3B	**AYC21 Circuit Card**
DTMF receivers	LATA Switching Systems Generic Requirements (LSSGR) compatible Note: If DTMF muting is on for a call, the DTMF receiver's minimum on time for detection is increased and may not meet LSSGR requirements DTMF muting does not impact LSSGR compatibility of DTMF receivers during call setup (S-digits)	Same, but is tunable through digital switch interface packages
Number of receivers: T1	24 (one per DS-0 channel)	
Number of receivers: E1	E1 not supported on AYC11 or AYC3B	30 (one per B-channel)

Continued on next page

1. These attributes are adjustable via the digital switch interface (DSI) package.

Table 6-14. T1 Telephony Interface Specifications for T1 E&M Type Configurations Only

Attribute	Specification	
	AYC11 or AYC3B	**AYC21**
DS-1 framing	D4 type only	To be assigned
DS-1 line coding	Zero code suppression (ZCS)	To be assigned
Protocol	Robbed-bit (4-wire) E&M	
Alerting in/out	Wink/wink	
Wink generation	230 msec default (Selectable: 20–2500 msec)	
Wink detection range	100–350 msec	
Addressing (outgoing)	DTMF (touch tone)	DTMF (touch tone) or MF
DTMF output timing	70 msec on, 70 msec off	
DTMF output levels	-8 dBm per frequency (nominal)	
Number of digits	16-digit maximum	
Number of digits for outdialing	15-digit maximum	
Addressing (incoming)	DTMF (touch tone)	DTMF (touch tone) or MF
DTMF receivers	LSSGR compatible	
Number of receivers	24 (one per DS-0 channel)	
Number of digits (DNIS)	Will wait for up to 15 digits (selectable) Also can be provisioned not to wait for digits	
Initial digit timer	Will wait up to 4 seconds for first digit (can be provisioned not to wait for digits)	
Interdigital timer	Will wait up to 2 seconds between digits	
Audible ring starts	As soon as selected number of digits is received, or when one of the above timers expire (whichever occurs first)	
DNIS capacity	0–16 digits	
ANI capacity	Not supported	
Transfer capability	Not supported	

Table 6-15. Digital Telephony Interface Specifications for ISDN-PRI Type Configurations

Attribute	Specification	
	AYC11 or AYC3B	**AYC21**
DS-1 framing	ESF or D4 (selectable)	ESF or D4 (selectable) for T1 rate, CEPT for E1
DS-1 line coding	■ B8ZS (with ESF framing only) ■ ZCS (with D4 framing only)	■ ZCS (with D4 framing only) ■ B8ZS (with ESF framing only) ■ HDB3 (with CEPT framing only)
B-channel capacities[1]	Up to 119 B+D when five T1 cards are used	23 B+D per board for T1, 30 B+D per board for E1
D-channel capacities	Maximum of 1 D-channel per system without AYC21 cards (additional D-channels are supported by AYC21 cards)	Multiple D-channels are supported up to the maximum number of E1/T1 boards (5 channels for 5 T1 boards, 30 channels for E1 boards)
Interface ID	1 (for card with a D-channel, not selectable) 2–5 (for card without a D-channel)	
DNIS capacity	0–15 digits	
ANI capacity	0–15 digits	
D-channel backup	Not supported	
Transfer capability	Not supported	

1. These configurations are switch dependent as not all switches support all configurations.

See Chapter 3, “Digital Telephony Interfaces,” in *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763, for additional information on T1 telephony interfaces.

Table 6-16. E1 (AYC21) Telephony Interface Specifications

Attribute	Specification	Notes	ITU No.[1]
Physical connector	■ RJ-48C modular jack with shielded connector shell OR ■ 2 75-Ohm BNC jacks	Receive signal in: pins 1 & 2 Transmit signal out: pins 4 & 5 Connector choice is switch-selectable on AYC21	
Bit rate line coding	2.048 Mbits/second		G.703
Line coding	HDB3		G.703
Framing	256 bits grouped in 32, 8-bit timeslots	16-frame multiframe	G.704
CRC	CRC-4	May be enabled or disabled by the user to match network equipment	G.704
Frame alignment			G.705 G.706
Alarm conditions	Loss of signal and loss of framing	Supports remote alarm indication (RAI)	G.704
Signaling channel	CAS or 1 ISDN-PRI D-channel	In timeslot 16	
Voice channels	30 channels	64 Kbits/second each	
PCM voice encoding	A-law or mu-law	Selectable by user	

1. International Telecommmunications Union number

For additional information on T1 telephony interfaces, see Chapter 3, “Digital Telephony Interfaces” in *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

Table 6-17. E1 (CAS) Telephony Interface Specifications

Attribute	Specification	Notes
Line signaling	System R2	Compatible with ITU Q.421
Register signaling	Multifrequency-compelled signaling (supports forward groups I, II, III and backward groups A, B, C)	Compatible with ITU Q.440
Called number (DNIS)	Maximum number of 16 digits received	Expected number of DNIS digits is settable by the user
Calling number (ANI)	Maximum number of 16 digits received or translated	Programmable to request/ignore ANI from network Programmable to send originating ANI if requested by the network on a per-system or a per-call basis
Protocol variations	Table driven line and register signaling	Supports country-specific variations of ITU Q.421 and Q.440

For additional information on T1 telephony interfaces, see Chapter 3, “Digital Telephony Interfaces,” in *INTUITY™ CONVERSANT® System Version 6.0 Communication Development*, 585-310-763.

Table 6-18. Digital Telephony Interface Specifications for Line Side Configurations

Attribute	Specification	
	AYC11 or ACY3B	**AYC21**
DS-1 framing	D4 type only	CEPT for E1 D4 for T1
DS-1 line coding	ZCS	HDB3 for E1 ZCS for T1
Wink-disconnect interval	300 msec default (selectable within a range of 10–2500 msec)	
Dial-tone delay	1000 msec default (selectable within a range of 20–5100 msec)	
Switch-hook-flash duration	700 msec default (selectable within a range of 10–2500 msec)	
DNIS capacity	Not supported unless used with converse vector step (CVS) or ASAI	
ANI capacity	Not supported unless used with CVS or ASAI	
Transfer capability	Flash transfers supported	

Data Communications Characteristics

Table 6-19 details the data communications characteristics for the V6.0 system platforms.

Table 6-19. Data Communications Characteristics for V6.0 System Platforms

Attribute	Asynchronous	Synchronous
Ports	1–9	1–2
Ports available for host communication	1–2	1–2
Simultaneous host sessions (LUs)	N/A	0–128
Mode	Full duplex	Half/full duplex
Protocols	Xon/Xoff	3270 SNA ■ Token Ring ■ SDLC
Data rates	To 9600 bps	SDLC: 9.6k–56k bps Token Ring: 4/16 Mbyte
Interface	EIA-232C	EIA-232C

Performance Information

7

Overview

This chapter provides information to help ensure proper sizing of the system, and includes performance considerations for:

- System architecture
- Software components
- Other processes

Also included are sections on performance tips and general conclusions about performance.

NOTE:
Understanding the performance considerations aid in identifying and resolving performance-related problems in applications. Use this chapter in conjunction with the repair procedure, “Reducing the Load,” in Chapter 1, “Troubleshooting,” of the maintenance book specific to your platform, to help pinpoint the root cause of a particular performance problem.

Purpose

The purpose of this chapter is to

- Provide guidelines for performance ratings.
- Clarify the limitations for some applications.
- Suggest possible solutions or options to improve performance.

Performance Considerations

The performance of a system depends greatly on factors such as amount of memory, amount of speech, size of the application or applications, call volume, etc. Since performance is a function of customer application, it is not possible to predict the performance of a given customer setup in the scope of this section. However, some general conclusions can be made based on performance and load tests done of a representative system.

System Architecture

The following sections provide performance information in relation to the system architecture.

Voice Processing Architecture

With respect to performance, the most important aspect of the system architecture is the technique used to move speech data from disk to main memory to voice processing cards (assume for simplicity voice play as opposed to voice code in which case the direction is reversed). Coded speech requires 4 Kbytes of memory for every second of speech with the ADPCM32 coding algorithm. With 96 telephone network connections of voice processing activity, the main central processing unit (CPU) could be required to move up to 384 Kbytes of data per second. (The figure is twice what you might expect to allow for reading from disk and writing to the voice card.) Once the data is on the speech card, the cards themselves have digital signal processors (DSP) which then convert that speech data into a form suitable for telephony.

It is important to note the significance of the buffer cache. The buffer cache is an area in memory set aside for speech data. Once speech is read off the disk it resides in the buffer cache indefinitely. Since some applications may play the same speech over many telephone network connections, the speech data only has to be read into memory once. From that point, speech data will be written directly out to the voice cards from memory and the extra step of reading the speech data off of the disk will be eliminated. Speech data is removed from the buffer cache if it is least recently used and there is not enough room in memory to accommodate new speech required by the application.

The size of the buffer cache is tunable by adding the nbufs parameter in the **/vs/data/spchconfig** file. VROP sets this value dynamically based on the number of telephone network connections in the system. The entry in the **/vs/data/spchconfig** file overrides the VROP setting. Note that you may not set this value to more than 250.

Once the data is on the voice card, the DSPs process the data and send it out over the telephone network.

Effect of Real Time Requirements

Speech must be played in real time. Therefore, speech data must be available when it needs to be played. With voice processing, speech cannot be sputtered on the telephone line as conventional multitasking computer systems can do with other data when sending it to an output device. If speech data is sent in this manner to the caller, the information is unintelligible and it can not be reviewed by the caller.

UnixWare is a time-shared operating system as it tries to satisfy all tasks of the applications running on it on request. The UnixWare system is not concerned of what gets done when from the system perspective. The UnixWare system queues may lead to unacceptable delays in voice processing. Therefore, the CPU must always be available to service voice processing requests. When processes are queued on the CPU for any significant amount of time, the real-time requirement is violated. Experience has shown that when CPU occupancy rates approach 60%, performance-related problems begin to appear.

Effect of Memory Requirements

The 486 and P5 120 CPUs are capable of satisfying 96 simultaneous requests for data at a rate of 32 Kbit/second (or 200 Kbytes/second) total system throughput. Additional testing shows that these CPUs are capable of loads of 300 Kbytes/sec. Processes, if resident in memory, can satisfy a great quantity of voice processing. If, however, a process (or part of it) is forced out of disk due to insufficient memory resource, and then needed later, the time it takes to retrieve the process from the disk may be too great. If this process is in a real-time computational path, speech processing delays can occur. Therefore, it is imperative that all processes and data required to meet an application's needs fit in the core memory simultaneously. It is more important to consider memory usage than CPU or disk usage when combining features or developing data interface processes (DIPs).

Paging

Excessive paging can lead to swapping; a much more serious problem than paging depending on which processes are swapped. Increasing the amount of CPU memory (for example, going from 32 Mbyte to 48 Mbyte) solves the paging problem.

TDM Bus

The TDM bus provides 240 timeslots for use. Every transaction consumes a minimum of two timeslots for the duration of the transaction. These two timeslots support speech playback, coding, and speech recognition during the transaction. Two timeslots are adequate for these features because the transaction cannot do all of the above functions at the same time.

Certain other functions, namely background audio require additional timeslots. However, this function may not be in effect during the entire transaction nor is it required by every transaction. If you clearly understand the characteristics of the application, your system can be engineered to make maximum use of the 240 available timeslots.

Software Components

The following sections detail the features identified as having major impacts on system performance. Each section includes a description of the feature (that is, how it works) and the feature's effect on performance, memory resources, CPU resources, and disk resources.

Speech Playback

Speech playback is the most widely used feature of the system. It poses some difficult performance issues due to the architecture of the system, the real-time nature of speech, and the great variability that can be found in how applications use speech. Variables that affect play performance include phrase length, active speech pool size, and speech coding rate:

- Phrase length — Affects play performance in two ways. The concatenation of several short phrases requires the system to process several talk requests. This involves retrieving several different phrases from the speech file system. The initial talk request is retrieved from disk and stored in core memory for quicker access at a later time if the phrase is played again. With a single longer phrase, a single talk instruction is processed by the system and only one initial retrieval from disk is necessary.

  Phrase length also affects the utility of speech buffers. Longer phrases typically make more efficient use of speech buffers. Inefficient use of speech buffers requires more data to be moved than what is actually used, causing wasted speech buffer cache memory and SP window buffer contention. The best way to enhance speech buffer utilization is to eliminate unnecessary short phrases from applications. Do not use short phrases for silence if the silence can be concatenated with longer phrases. Avoid trimming phrases to the absolute minimum and then speaking silence phrases between other phrases. Record phrases that are always used together as a single phrase. Also, note that speech buffer efficiency cannot be calculated by taking the average of the phrases in the application talk file, but must be calculated by considering the frequency that each phrase is used during a typical execution of the application.

- Active speech pool — The active speech pool is a list of all phrases used during system operation. The size of this pool is the quantity (in bytes or seconds) of the speech. If a large quantity of unique speech is required by the applications running on the system, it is unlikely that the system speech buffer cache can be used effectively. As new phrases are

required for speech, old phrases are flushed out of the cache and must be reread from disk when needed later. It is best to share speech across applications and reuse speech in applications wherever possible.

- Speech coding rate — By default, the voice system can store 720 seconds of speech in the buffer cache. However, due to speech buffer inefficiencies, the actual value is likely to be closer to 360 seconds.

  The speech coding rate affects voice play in two ways: bytes per second of speech required, and digital Signal Processor (DSP) resource requirements. Coding rates requiring fewer bytes per second (for example, SBC16) lessen the load on the CPU and the disk and reduce the memory requirements if phrases would have required more than a single block with the standard coding algorithm (ADPCM32). Coding rates also reduce storage space. The drawback of SBC-type algorithm occurs in DSP requirements. To avoid DSP overload, do not exceed any of the capacities shown in Table 4-3. DSP resources are adequate with IVP circuit cards to handle any coding type, but when using SP circuit cards for voice, capacities are reduced

  Higher coding rates generally provide better quality recording, but use more disk space to store the message. CELP16 offers excellent quality with minimum disk space, but uses more of the SSP processing resources than does the ADPCM, about four times as much for coding and about 2 times as much for playback. Table 7-1 provides coding type, rate, quality and disk space requirements.

Table 7-1. Message Coding Performance

Type	Rate (Kbps)	Quality	Disk Space Requirements (K-bytes/Second)
PCM	64	Excellent	8
ADPCM	32	Excellent	4
CELP	16	Excellent	2
SBC	24	Very good	3
SBC	16	Good	2
ADPCM	16	Fair	2

Speech Playback Usage Summary

The following information summarizes the speech playback feature usage on the system.

CPU — Usage varies widely among applications. Copying for play is typically the most CPU intensive activity in the entire system. Using 16Kb/s code speech, ensuring efficient use of speech buffers and maintaining speech in the speech buffer cache can help alleviate CPU load due to play.

Disk — Disk usage may increase not only to copy coded speech to disk but also to reclaim speech for play which was over written in the buffer cache to make room for the newly coded speech. Also be aware of capacity limitations.

Memory — Be sure that too big a buffer cache is not forcing paging on the system. See ''System Architecture'' earlier in this chapter. If a wide variety of speech is played (greater than 20% of max_phrases with the default setting of 32,000), a large amount of memory may be used by phrase list blocks (PLBs). Consider making max_phrases as small as possible, particularly if speech requirements are not expected to grow. Phrase list blocks are used to find the address of a phrase on disk.

Voice Code

Voice coding requires more resources than voice play. Additional resources are required for setting up the code, and since coding does not benefit from the system buffer cache, it tends to increase disk activity and reduce the effectiveness of the system buffer cache. The ADPCM coding types also require more SP resources for coding than playing speech. However, voice coding does not generally share the same complexities found in play due to the combination of buffer efficiency and phrase concatenation. CPU usage is increased during voice coding since an available phrase-id from the requested talkfile must be found, and speech buffers must be allocated in core memory prior to code start. The voice coding algorithm also effects load for the same reasons discussed under play. Code length also effects the likelihood of problems. Code is a continuous process, the longer the code, the more likely that the system will get bogged down performing some other activity.

Voice Coding Usage Summary

The following information summarizes the voice coding feature usage on the system.

CPU — Copying data from the voice cards to memory to disk is the main CPU resource consumer. Denser coding algorithms can be used to lessen this load.

Disk — Disk usage may increase not only to copy coded speech to disk but also to reclaim speech for play which was over written in the buffer cache to make room for the newly coded speech. Also be aware of capacity limitations. A system coding on 96 telephone network connections continuously and simultaneously using the ADPCM32 coding algorithm will easily fill a 600 Mbyte speech file system to capacity in less than one hour.

Memory — Memory requirement increase by about 20 pages for coding over play alone. More of the Phrase List Block structure will be required in memory.

Events

In general, a reasonable number of script events (8 events on calls with a hold time of 2 minutes over 96 telephone network connections) can be handled without any serious performance degradation. As scripts process more events, however, event processing costs can become significant. This is due to heavy use of disk resources. The processing of events impedes the voice system from retrieving speech from the disk fast enough to avoid speech breaks. Since event processing is spawned from the script when the call completes, it is also possible to overload the system with calls having relatively few events but very short call hold times. That is, the load introduced by Events is a function of both the call rate and the number of Events per script. For applications under very tight performance specifications, call data logging can be turned off by starting cdh with the *-ns* option. This change should be made to the files **/etc/inittab** and **/vs/data/CONVERSANT**.

Events Usage Summary

The following information summarizes the events feature usage on the system.

CPU — CPU usage will increase at the rate of about 0.67% CPU utilization per event per second for 486/50 MHz CPUs and 0.37% CPU utilization per event per second for P5 120 CPUs.

Disk — Disk throughput, assuming basic voice system play and touch tone type activity, will be saturated at about 16 events per second on a SCSI system.

Memory — No effect measured.

Touch Tones

Although the system is efficient and accurate in processing touch tones, this processing overhead can be significant under load conditions. Each touch tone results in a message sent from the board interface process to TSM. Processing of these messages can get expensive if touch tones are received at very high rate (greater than 2 touch tones per second per channel over 96 telephone network connections). Applications are not likely to see performance related problems resulting from touch tone overloads, but keep in mind that they do have a cost.

Touch Tone Usage Summary

The following information summarizes the touch-tone feature usage on the system.

CPU — The system requires approximately 0.66% per touch tone per second for 486/50 MHz CPUs and 0.21% per touch tone per second for P5 120 CPUs.

Disk — No effect measured.

Memory — No effect measured.

Local Database

The local database is difficult to characterize since applications can vary widely. In general, all tables should be indexed on the primary key. Other things to watch out for are tables which change in size as the database never reclaims the space for a table after it has grown and shrunk. This is true for system tables such as events and cdh. Rollback segments also grow in this manner and can cause space problems.

Since the Script Builder database querying capabilities do not support many of the features found in high level database query languages, views could be used to encapsulate common queries across tables, thereby eliminating processing required at the script level. Through the use of views, there exists a potential of increasing the amount of work ORACLE has to do.

Complicated ORACLE interaction takes more time than sets of simple interactions. The time to update a particular field is roughly proportional with the overall complexity of the database request. That is, it takes much less time to performs 30 simple updates that it takes to perform 1 update with 30 components.

Local Database Usage Summary

The following information summarizes the local database feature usage on the system.

CPU — Depends too heavily on application to attempt a figure.

Disk — Depends too heavily on application to attempt a figure.

Memory — Additional 3 to 6 MBytes of memory required for applications using the local database. This is the expected increment for most small database applications.

Feature Packages

The following section details the performance impact of some features packages available with the V6.0 system. Due to the enormity of features available with the system, all feature packages are not formally characterized. Performance assessment of these features can be made under the following assumptions:

- Features are used in such a way that the load they place on the system is proportional to the number of active channels on the system.
- The use of the feature is no more disk or CPU intensive than if the telephone network connection using the feature was performing voice code or play.

Most features meet these assumptions as the sections explain below. Memory cannot be put under these assumptions. In real time, all processes cannot run on the CPU or access the disk, but all processes required to meet the needs of an application must be resident in memory at all times.

Features Using SP Circuit Cards

Speech Recognition, Text-to-Speech (TTS), Call Classification Analysis (CCA), and Primary Rate Interface (PRI) use the processors on the Signal Processor (SP) and Companion (CMP) circuit cards to perform the computations required to provide the feature functionality. The SP circuit cards contain a microprocessor similar in power to the processor of the main voice system plus some DSP chips which are used to perform the signal processing portion of their operations. The voice system software understands the limits of the SP circuit cards for operations they perform, and SP circuit cards are guaranteed to perform with no performance related problems up to those limits.

Thus, the SP circuit cards themselves will never show any load related problems. It is up to the application designer to ensure that there are enough SP resources available to handle the application at hand. In the case of Speech Recognition, TTS and CCA, an SP can be thought of as a multiple server resource, it can be modeled with standard queuing theory techniques. Knowing the rate at which service for the SP resource will arrive, the mean service time and the number of telephone network connections of service an SP can deliver, the probability of insufficient SP resources can be calculated for any number of SP's. Note that queuing models assume that blocked jobs will be queued, this is provided automatically by TTS but must be programmed with Speech Recognition and CCA, presumably through some retry strategy. For additional information about performance issues on features using SP circuit cards see "Optional Features Effects on Performance" below.

Optional Features Effects on Performance

Most of these features will have a no effect on the performance or will actually improve performance when compared with applications using standard voice system functionality unless the DIPs introduced with these features cause paging problems.

- Speech Recognition improves system performance since this feature, as a data gathering technique, is much slower than touch-tone input. As a result, the CPU will spend more time waiting for an Speech Recognition response than waiting for a touch-tone response.
- TTS also improves performance. Rather than the system moving around 4,000 bytes per channel per second with voice play, it only has to move a few bytes with TTS, those being the English text of the phrase. While the TTS SP circuit card is playing, the main system remains idle for that channel.
- CCA is used to improve the accuracy of outbound call classification. The performance effect of CCA depends on two concepts: Firstly, in comparison to intelligent calls, full CCA calls which fail will return more quickly. Secondly, during Call Classification, no other system resources are being used. The combined effect is that idle time will be reduced. How much depends on call rates and the probability of call failure.
- The PRI SP is used only to perform protocol analysis from the PRI D channel. Load on the SP from PRI protocol analysis will be proportional to the rate of calls to the system. The call rate will be throttled by the main CPU before the PRI SP resources are exhausted. The throttling of the call rate by the CPU exists independently of PRI.
- Form Filler is simply an application over the existing voice system with a small database. The bulk of the work in form filler is with voice code. Form filler will not use resources at a level significantly greater than those being used by standard voice code applications.
- Host is not any worse than local database in terms of resource consumption. Response times depend heavily on the number of concurrent host activities being generated by the system, the number of sessions, and the response time of the host. Low bandwidth communications channels (9600 baud), will have difficulty supporting 30 telephone network connections of host access. The host uses CPU and memory resources primarily. Faster links (56K or token ring) place more burden on CPU and memory resources.
- Remote database, in comparison to a local database application, will have the following performance impact: slower response times unless the database server is much faster than the system, less disk utilization since database access will be performed on a remote system, and less CPU usage. Use of a system for voice processing and as a centralized database server is not recommended for systems with high voice traffic. Remote database is an attractive feature for systems which are currently heavily loaded with simultaneous voice and local database activity.

- The effect of the network will depend largely on the application. Note the effect of background process performing activities on the system in parallel for call processing. For example, copying phrases coded from an earlier call to a centralized machine, yet allowing new calls to continue to code speech. The ability of the system will be reduced by as much as half since, in aggregate, the system will be performing twice the work per coded phrase.

Other System Processing

With a properly written application, the voice system usually operates without any performance problems. The introduction of non-voice system activities to the system, however, can degrade voice processing performance. Although the additional processing may seem light in terms of disk and CPU use, memory usage is impacted significantly.

When new processes are started on the system, they force other processes or data, or at least parts of them, to be placed on disk. This is referred to as swapping or paging. If a critical part of a voice system process is placed on disk, it will not be able to run when the system needs it and delays in speech processing will occur. The UnixWare system does what it can to keep the most important or active process or data in memory but it can only guess what will be needed next. Therefore, logging onto the system during call processing may result in user perceptible delays and speech breaks. Operational, administration and maintenance activities should be done during off hours. Script development (with Script Builder, etc) should also be done in off hours or on a development machine.

IRAPI scripts and application DIPs should be written to consume as little memory as possible. They should also avoid forks and execs. The use of shell scripts for call processing is discouraged. Non-system processes that take up excessive amounts of memory (like X-windows) should be avoided. If utilities are written for administration and other activities, they should be run during off hours. Shell scripts are very dangerous since they typically execute many processes. As processes are formed in UnixWare, they consume memory. This memory consumption forces other processes out of memory, potentially critical voice system processes.

After the processes are running for some time they will find their working set, and assuming sufficient memory, will perform adequately. With shell scripts however, processes are typically spawned off very frequently and continuously. This behavior is likely to force critical processes out of core memory. Shell scripts are also wasteful of CPU resources. If shell scripts are written, they should be used sparingly and only to control operations at a very high level. Scripts which contain looping constructs with process executions within the body of loops are typically poor performers. ksh features to perform mathematical and lexical operations should be used over standard UnixWare commands.

Performance Tips

Applications engaged in the following types of activities can severely impact system performance. The system can support these activities, but only at reduced channel counts or with carefully-tuned applications. Where appropriate, a recommended telephone network connection capacity is given for the application type. Application designers should be aware of these as potential pitfalls. Reference prior sections of this document for more details about some of these application types in their respective sections. The P5 120-MHz CPU reduces the impact to the application.

- Applications making inefficient use of speech buffers — This includes applications playing many small phrases in such a variety that they cannot be contained in memory simultaneously.
- Applications using PCM64 coding algorithm — If PCM64 is used for most speech processing and the application spends the majority of call connect time doing voice code or play, systems should be limited to approximately 72 telephone network connections.
- Applications with memory intensive dips or non-voice system processes — If these processes force paging (check memory usage data), channel count should be decreased to free up memory used for speech processing and script data space. Typically, reducing channel count will not free memory in a linear manner if at all. If memory usage cannot be reduced, the only recourse may be to reduce load enough so the system can live with the paging.
- Applications with large numbers of call data events — See the section on "Events" earlier in this chapter.
- Systems used simultaneously for both application development and call processing — If your system is used simultaneously for application development and call processing, you are strongly encouraged to purchase low end development systems to support script development (or to hang onto your old systems). If you are doing your own script development on production systems then you should be warned about the performance impacts to your system. Since script development is a memory consumer and activity will be sporadic, a suggested reduction in capacity cannot be given.
- Applications taking calls during hours when call data records are summarized — If you expect high traffic volumes overnight, you should move the call data summary cron jobs to the lowest call volume time of the day.
- Systems experiencing OA&M and voice processing simultaneously — Such activities are similar to script development and carry the same risks. Running reports via cvis_menu is extremely memory intensive.
- X-windows
- ASCII to FAX conversions when using Script Builder FAX Actions

- Applications that contain several execution paths, for example, multiple languages. It is recommended that large, complex applications be modularized for each of the execution paths. Create several smaller applications that can be executed from the main application. For example, if you have an application that allows you to choose one of five different languages, the main application can contain the language selection and the user input selects the language application executed from the main application.

General Conclusions About Performance

There are two general conclusions which are important to the understanding of performance on the V6.0 system.

- Performance limitations are probabilistic numbers.
- The system is a general purpose computing device.

The limitations advertised for the system are numbers that are acceptable for most applications. The vast majority of field applications will never see any performance related problems. For those that do see problems, it is likely that tweaking the application, with the understanding of the underlying architecture and how it effects performance, can remove those problems.

The idea of the system as a general purpose computing device lends the system to all the same performance issues of any other general purpose computing device. Since the system is programmable, there is nothing that prevents application designers from writing applications that can seriously effect performance. These applications, in most cases, can also lend themselves to more intelligent solutions aided through the understanding of the principles discussed here.

Documentation Guide

A

Overview

The System Description is designed to supplement all other documents in the V6.0 system set. This section provides information about the documentation that supports the V6.0 system.

Purpose

The purpose of this section is to refer you to the appropriate document for specific information on

- Installation and maintenance
- Alarms and log messages
- Upgrades
- Administration
- Application design and development
- Speech and communication development
- Software tools

V6.0 Documentation Set Listing

Each document in the V6.0 set is listed in Table A-1 and a brief description of each available document is provided following the table.

NOTE:
All document titles begin with *INTUITY™ CONVERSANT® System Version 6.0.*

Table A-1. V6.0 System Documentation Set Listing

Title	Language	Document Number	Comcode
System Description	English	585-310-241	108005471
System Description	French	585-310-241FR	107852196
System Description	Spanish	585-310-241SP	107852204
System Description	Brazilian Portuguese	585-310-241PTB	107852212
System Description	Dutch	585-310-241NL	107852220
System Description	Japanese	585-310-241JA	107852238
System Description	German	585-310-241DE	107852246
MAP/100 New System Installation	English	585-310-176	108037771
MAP/100C New System Installation	English	585-310-177	108037763
MAP/40 New System Installation	English	585-310-178	108037755
MAP/5P New System Installation	English	585-310-191	108034748
MAP/100 Maintenance	English	585-310-179	108037722
MAP/100C Maintenance	English	585-310-180	108037714
MAP/40 Maintenance	English	585-310-181	108037706
MAP/5P Maintenance	English	585-310-192	108037730
System Alarms and Log Messages	English	585-310-182	107852311
Upgrade	English	585-310-183	108037862
Administration	English	585-310-591	108037854
Application Design Guidelines	English	585-310-670	107852345
Application Design Guidelines	French	585-310-360FR	107852352
Application Design Guidelines	Spanish	585-310-670SP	107852360

Continued on next page

Table A-1. V6.0 System Documentation Set Listing — *Continued*

Title	Language	Document Number	Comcode
Application Design Guidelines	Brazilian Portuguese	585-310-670PTB	107852378
Application Design Guidelines	Dutch	585-310-670NL	107852386
Application Design Guidelines	Japanese	585-310-670JA	107852394
Application Design Guidelines	German	585-310-670DE	107852402
Application Development with Script Builder	English	585-310-760	108002809
Application Development with Advanced Methods	English	585-310-761	107852428
Speech Development, Processing, and Recognition	English	585-310-762	107852436
Communication Development	English	585-310-763	107852444
Application Development with Graphical Designer	English	585-310-764	107852451
Veritas Documentation	English	585-350-906	107287153
Veritas Volume Manager	English	585-350-907	107307175
Novell UnixWare Documentation Set	English	585-350-908	407298587
CLEO LINKix Documentation Set	English	585-350-912	407299072
ORACLE Administration Guide	English	585-350-909	407298603
ORACLE Messages and Code Manual	English	585-350-910	407298611
*ORACLE SQL*PLUS User's Guide*	English	585-350-911	407298629
*ORACLE SQL*NET TCP/IP Documentation*	English	585-350-913	407298637
*ORACLE SQL*MENU User's Guide*	English	585-350-914	407298645
*ORACLE SQL*FORMS Operator's Guide*	English	585-350-915	407298660
*ORACLE SQL*FORMS Designer's Reference*	English	585-350-916	407298678
*ORACLE SQL*REPORTWriter*	English	585-350-917	407298686
ORACLE Programmer Guide	English	585-350-918	407298702

V6.0 Documentation Set Descriptions

- *System Description*

  Available in English, French, Spanish, Brazilian Portuguese, Dutch, Japanese, and German. (See Table A-1 for specific document and comcode numbers.)

  June 1997 for English (Issue 2.0)
  December 1996 for translated languages (Issue1.0)

  Provides a technical description of the V6.0 system. This document is intended primarily for sales and sales support organizations, administrators, product design organizations, and account executives. Other audiences include the Technical Service Center (TSC), training, and development.

  Topics include: voice response basics, hardware, software, features and feature package descriptions, requirements and specifications, performance information, and a documentation guide.

- *MAP/100 New System Installation*

  Document number 585-310-176
  Issue 3.0
  June 1997

  Describes procedures to install a new MAP/100 platform and peripherals, make connections, and perform initial administration and acceptance testing of the system. This document is intended primarily for on-site technical personnel who are responsible for installing the system and performing initial administration and acceptance testing.

  Topics include: getting started, unpacking the platform and installing nonassembled hardware, making cable connections, connecting peripherals and powering up, and verifying system status.

  Appendices include: a system installation checklist, troubleshooting procedures, pinouts, and cable connectivity.

- *MAP/100C New System Installation*

  Document number 585-310-177
  Issue 3.0
  June 1997

  Describes procedures to install a new MAP/100C platform and peripherals, make cable connections, and perform initial administration and acceptance testing of the system. This document is intended primarily for on-site technical personnel who are responsible for installing the system and performing initial administration and acceptance testing.

  Topics include: getting started, unpacking the platform and installing nonassembled hardware, making cable connections, connecting peripherals and powering up, and verifying system status.

  Appendices include: a system installation checklist, troubleshooting procedures, pinouts, and cable connectivity.

- *MAP/40 New System Installation*

  Document number 585-310-178
  Issue 3.0
  June 1997

  Describes procedures to install a new MAP/40 platform and peripherals, make cable connections, and perform initial administration and acceptance testing of the system. This document is intended primarily for on-site technical personnel who are responsible for installing the system and performing initial administration and acceptance testing.

  Topics include: getting started, unpacking the platform and installing nonassembled hardware, making cable connections, connecting peripherals and powering up, and verifying system status.

  Appendices include: a system installation checklist, troubleshooting procedures, pinouts, and cable connectivity.

- *MAP/5P New System Installation*

  Document number 585-310-191
  Issue 2.0
  June 1997

  Describes procedures to install a new MAP/40 platform and peripherals, make cable connections, and perform initial administration and acceptance testing of the system. This document is intended primarily for on-site technical personnel who are responsible for installing the system and performing initial administration and acceptance testing.

  Topics include: getting started, unpacking the platform and installing nonassembled hardware, making cable connections, connecting peripherals and powering up, and verifying system status.

  Appendices include: a system installation checklist, troubleshooting procedures, pinouts, and cable connectivity.

- *MAP/100 Maintenance*

  Document number 585-310-179
  Issue 2.0
  June 1997

  Provides a single source of information and procedures needed to maintain a MAP/100 platform. This document is intended primarily for the personnel responsible for installing the system and performing routine and scheduled maintenance. This book is also useful to the system administrator who wants to troubleshoot the system.

  Topics include: troubleshooting, diagnostics, common system procedures, getting inside the computer, replacing, installing, or upgrading circuit cards, replacing the hard disk, replacing other components, installing optional components, installing operating system software, installing base system software, and installing optional feature software.

- *MAP/100C Maintenance*

  Document number 585-310-180
  Issue 2.0
  June 1997

  Provides a single source of information and procedures needed to maintain a MAP/100C platform. This document is intended primarily for the personnel responsible for installing the system and performing routine and scheduled maintenance. This book is also useful to the system administrator who wants to troubleshoot the system.

  Topics include: troubleshooting, diagnostics, common system procedures, getting inside the computer, replacing, installing or upgrading circuit cards, replacing the hard disk, replacing other components, installing optional components, installing operating system software, installing base system software, and installing optional feature software.

- *MAP/40 Maintenance*

  Document number 585-310-181
  Issue 2.0
  June 1997

  Provides a single source of information and procedures needed to maintain a MAP/40 platform. This document is intended primarily for the personnel responsible for installing the system and performing routine and scheduled maintenance. This book is also useful to the system administrator who wants to troubleshoot the system.

  Topics include: troubleshooting, diagnostics, common system procedures, getting inside the computer, replacing, installing, or upgrading circuit cards, replacing the hard disk, replacing other components, installing optional components, installing operating system software, installing base system software, and installing optional feature software.

- *MAP/5P Maintenance*

  Document number 585-310-192
  Issue 2.0
  June 1997

  Provides a single source of information and procedures needed to maintain a MAP/5P platform. This document is intended primarily for the personnel responsible for installing the system and performing routine and scheduled maintenance. This book is also useful to the system administrator who wants to troubleshoot the system.

  Topics include: troubleshooting, diagnostics, common system procedures, getting inside the computer, replacing, installing, or upgrading circuit cards, replacing the hard disk, replacing other components, installing optional components, installing operating system software, installing base system software, and installing optional feature software.

- *System Alarms and Log Messages*

  Document number 585-310-182
  Issue 1.0
  December 1996

  Provides procedures to determine the action you should take if system messages alert you to problems, potential problems, or a change in the state of the system. This document is primarily intended for the on-site technician or system administrator.

  Topics include: getting started and alarm log entries.

- *Upgrade*

  Document number 585-310-183
  Issue 2.0
  June 1997

  Provides upgrade procedures and related information. This document is intended primarily for on-site service technicians who perform upgrades at the customer site and end customers who choose to upgrade their own systems. Other audiences include personnel from the Technical Service Organization (TSO) who support the on-site technician or customer who is performing an upgrade.

  Topics include: an overview of the upgrade process, software upgrade assistance package, upgrade prerequisites, upgrade checklists, upgrade procedures, hardware upgrades, verification, and troubleshooting.

- *Administration*

  Document number 585-310-590
  Issue 3.0
  June 1997

  (Formerly “Operations” and “Command Reference” documents in V5.0 documentation.) Provides ongoing administration, operations, and command reference information about the system. This document is intended primarily for the customer who uses the administrative interface screens and menus. Other audiences include field support, Technical Service Organization, Sales and Technical Response Center, and helpline personnel.

  Topics include: user interface, application package administration, configuration management, feature packages, reports, switch interfaces, system monitor, system administration features, database environment, and disk operations.

  An appendix includes a summary of commands.

- *Application Design Guidelines*

  Available in English, French, Spanish, Brazilian Portuguese, Dutch, Japanese, and German. (See Table A-1 for specific document and comcode numbers.)

  Issue 1.0
  December 1996

  Provides introductory information to an end-user about the capabilities of the system and guidelines for designing a voice response application. This document is intended primarily for end-users who are new to the product. Other audiences include development, sales support, service support, and training.

  Topics include: general considerations, caller inputs, system processes, outputs to callers, designing the transaction, and deploying the transaction.

- *Application Development with Script Builder*

  Document number 585-310-760
  Issue 3.0
  June 1997

  Provides detailed procedures for using the Script Builder feature to create application programs, including external functions that can be activated by Script Builder. This document is intended primarily for application developers who are responsible for creating and maintaining application programs. Other audiences include development, sales support, service support, and training.

Topics include: Script Builder overview, script builder user interface, Script Builder data management, defining the host interface, creating database tables, defining parameters, defining the transaction, using optional features, speech administration, application administration, and using advanced features.

- *Application Development with Advanced Methods*

  Document number 585-310-761
  Issue 1.0
  December 1996

  Serves as a reference for those who develop applications for the system using the TSM script level language and/or C-language, and provides information about designing software applications, processing speech, and writing programs that integrate the application and the generic software. This book is intended primarily for those who write application scripts. Other audiences include development, sales and service support, and training.

  Topics include: application design, development guidelines, script instructions, data interface process, adding and modifying system messages, and IRAPI programming, including sample applications, TAS Script instructions and C-library functions.

- *Speech Development, Processing, and Recognition*

  Document number 585-310-762
  Issue 1.0
  December 1996

  Serves as a reference for those who develop applications for the system using speech development features. This book is intended primarily for application developers. Other audiences include service support technicians, research and development teams, and marketing and sales groups.

  Topics include: developing and editing speech, recognizing speech input, including WholeWord Speech Recognition, FlexWord™ Speech Recognition, and Dial Pulse Recognition, putting it together, enhanced basic speech phrases, speech file formats, computing channel numbers, and advanced Text-to-Speech features.

- *Communication Development*

  Document number 585-310-763
  Issue 1.0
  December 1996

  Serves as a reference for those who are responsible for establishing the communication interface between the caller, administrators, and the system. This book is intended primarily for application developers. Other audiences include field support, Technical Service Organization (TSO), helpline personnel, and voice processing comarketers.

Topics include: communication architecture, analog telephony interfaces, digital telephony interfaces, adjunct/switch application interface, converse vector step routing, call classification analysis, data network communications, and data network connectivity alarms.

- *Application Development with Graphical Designer*

  Document number 585-310-764
  Issue 1.0
  December 1996

  Provides end-users with information about installing Graphical Designer, creating call flow applications, and transferring the application to the system. This document is intended primarily for application developers. Other audiences include field support, Technical Service Organization, and helpline personnel.

  Topics include: an overview of Graphical Designer, installing and using Graphical Designer, preparing and installing an application, keyboard shortcuts, sample call flows, and troubleshooting.

- *VERITAS Documentation*

  Document number 585-350-906
  March 1995

  Provides information relating to VxFS system administration as well as diagnostics and error messages. This book is intended primarily for system administrators responsible for installing, configuring, and maintaining UNIX systems.

- *VERITAS Volume Manager*

  Document number 585-350-907
  March 1995

  Provides installation, user, and system administration information for the VERITAS Volume Manager. This book is intended primarily for volume manager users and system administrators.

- *Novell UnixWare Documentation Set*

  Document number 585-350-908
  March 1995

  Provides a complete set of documentation on how to use UnixWare, including the following books:

  - *Installation Handbook*
  - *Introduction to System Administration*
  - *System Performance Administration*
  - *System Setup and Configuration*
  - *User and Group Management*
  - *Backup and Restore Services*
  - *Print Service Administration*
  - *File System Administration*
  - *System Performance Administration*
  - *Basic UNIX System Networking*
  - *TCP/IP Administration*
  - *NFS/RPC/INIS Administration*
  - *User Handbook*

- *CLEO LINKix Documentation Set*

  Document number 585-350-912
  March 1995

  Provides the following information:

  — *Hardware Installation* - describes the steps involved in installing and configuring CLEO's PC/SIB board in an IBM AT-style 386.

  — *Administration Guide* - explains the procedures for installing and configuring the product, installation troubleshooting, setting up system files, and monitoring and tracing program execution.

  — *Common Service Verbs Programmer's Guide* - contains the information needed to incorporate CLEO's Common Service Verbs (CSV) API in C-language application programs.

  — *3270 User's Guide* - describes product features, architecture, connectivity, configuration options, and the user interface of 3270LINKix.

  — *HLLAPI Programmer's Guide* - provides information about writing transaction programs, testing and troubleshooting, HLLAPI functions, OIA image, and the hapi_c.h header file.

  — *NetView User's Guide* - lists NetView commands and describes the network management API.

- *ORACLE Administration Guide*

  Document number 585-350-909
  March 1995

  Describes how to manage the ORACLE7 Server RDBMS, including basic database administration, ORACLE server configuration, database storage, database security, distributed processing and distributed databases, database backup and recovery, and database and instance tuning. This book is intended primarily for those responsible for administering the operation of an ORACLE database system (database administrators).

- *ORACLE Messages and Code Manual*

  Document number 585-350-910
  March 1995

  Lists messages generated by the ORACLE server, PL/SQL, ORACLE pre-compilers, SQL*DBA, import/export utilities, and SQL*Loader. This book is intended primarily for all ORACLE users.

- *ORACLE SQL*PLUS User's Guide*

  Document number 585-350-911
  March 1995

  Describes the SQL*Plus program and its uses, and provides a detailed description of each SQL *Plus command. This book is intended primarily for a range of individuals with varying SQL language and ORACLE database experience, from programmers to nonprogrammers.

- *ORACLE SQL*NET TCP/IP Documentation*

  Document number 585-350-913
  March 1995

  Describes how to use SQL*NET on a TCP/IP network to exchange information among ORACLE databases and application. This book is intended primarily for system and database administrators. Other audiences include anyone who wants to communicate over a TCP/IP network with ORACLE products.

- *ORACLE SQL*MENU User's Guide*

  Document number 585-350-914
  March 1995

  Contains a detailed description of how to use SQL*Menu, including how to run menu-based software applications, how to design menus and menu structures, and how to administer SQL*MENU. This book is intended primarily for application operators, application designers, and database administrators.

- *ORACLE SQL*FORMS Operator's Guide*

  Document number 585-350-915
  March 1995

  Demonstrates how to run forms, use the keyboard to make selections and edit entries, retrieve records from the ORACLE database, enter records, modify records, delete records, and record transactions in the ORACLE database. This book is intended primarily for the novice operator.

- *ORACLE SQL*FORMS Designer's Reference*

  Document number 585-350-916
  March 1995

  Demonstrates how to implement specific SQL*Forms functionality in an application. This book is intended primarily for the advanced designer.

- *ORACLE SQL*REPORTWriter*

  Document number 585-350-917
  March 1995

  Contains a detailed description of the components of SQL*ReportWriter and provides a tutorial and conceptual material to help users learn how to use SQL*ReportWriter. This book is intended primarily for application developers and readers who want to create reports for their own use. Readers should have a working knowledge of SQL or ORACLE database concepts. Includes Introduction to SQL*ReportWriter and SQL*Report-Writer Reference Manual.

- *ORACLE Programmer Guide*

  Document number 585-350-918
  March 1995

  Provides a guide to the ORACLE Precompilers and shows how to develop applications that use SQL to access and manipulate ORACLE data. This book is intended primarily for programmers, but may also be useful to systems analysts and project managers.

Glossary

Numerics

23B+D
23 bearer (communication) and 1 data (signaling) channel on a T1 PRI circuit card.

30B+D
30 bearer (communication) and 1 data (signaling) channel (plus framing channel 0) on an E1 PRI circuit card.

3270 interface
A link between one or more INTUITY™ CONVERSANT® machines and a host mainframe. In INTUITY CONVERSANT system documentation, the 3270 interface specifically means the link between one or more system machines and an IBM host mainframe.

47B+D
47 bearer (communication) and 1 data (signaling) channel on two T1 PRI circuit cards.

4ESS®
A large Lucent central office switch used to route calls through the telephone network.

A

AC
alternating current

ACD
automatic call distributor

AD
application dispatch

AD-API
application dispatch application programming interface

adaptive differential pulse code modulation
A means of encoding analog voice signals into digital signals by adaptively predicting future encoded voice signals. This adaptive modulation method reduces the number of bits required to encode voice. See also "pulse code modulation."

adjunct products
Products (for example, the Adjunct/Switch Application Interface) that the INTUITY system administers via cut-through access to the inherent management capabilities of the product itself; this is in opposition to the ability of the INTUITY CONVERSANT system to administer the switch directly.

Adjunct/Switch Application Interface
An optional feature package that provides an Integrated Services Digital Network-based interface between Lucent Technologies PBXs and adjunct processors.

ADPCM
adaptive differential pulse code modulation

ADU
asynchronous data unit

advanced speech recognition
A speech recognition ability that allows the system to understand WholeWord and FlexWord® inputs from callers.

affiliate
A business organization that Lucent controls or with which Lucent is in partnership.

AGL
application generation language

alarm relay unit
A unit used in central office telecommunication arrangements that transmits warning indicators from telephone communications equipment (such as an INTUITY CONVERSANT system) to audio.

ALERT
System alerter process

alerter
A system process that responds to patterns of events logged by the "logdaemon" process.

American Standard Code for Information Interchange
A standard code for data representation that represents alphanumeric characters as binary numbers. The code includes 128 upper- and lowercase letters, numerals, and special characters. Each alphanumeric and special character has an ASCII code (binary) equivalent that is 1 byte long.

analog
An analog signal, such as voice or music, that varies in a continuous manner. An analog signal may be contrasted with a digital signal, which represents only discrete states.

ANI
automatic number identification

announcement
A message the system plays to the caller to provide information. The caller is not asked to give a response. Compare to "prompt."

API
Application programming interface

application
The automated transaction (interactions) among the caller, the voice response system, and any databases or host computers required for your business. See also "application script."

application administration
The component of the INTUITY CONVERSANT system that provides access to the applications currently available on your system and helps you to manage and administer them.

application installation
A two-step process in which the INTUITY CONVERSANT system invokes the TSM script assembler for the specific application name and moves files to the appropriate directories.

application script
The computer program that controls the application (the transaction between the caller and the system). The INTUITY CONVERSANT system provides several methods for creating application scripts, including Graphical Designer, Script Builder, Transaction Assembler Script (TAS) language, and the Intuity Response Application Programming Interface (IRAPI).

application verification
A process in which the INTUITY CONVERSANT system verifies that all the components needed by an application are complete.

ASCII
American Standard Code for Information Interchange

ASI
analog switch integration

ASR
advanced speech recognition

asynchronous communication
A method of data transmission in which bits or characters are sent at irregular intervals and spaced by start and stop bits rather than by time. Compare to "synchronous communication."

asynchronous data unit
An electronic communications device that allows computer systems to communicate over asynchronous lines more than 50 feet (15 m) in length.

automatic call distributor
That part of a telephone system that recognizes and answers incoming calls and completes these calls based on a set of instructions contained in a database. The ACD can send the call to an operator or group of operators as soon as the operator has completed a previous call or after the system has played a message to the caller.

automatic number identification
A method of identifying the calling party by automatically receiving a string of digits that identifies the calling station of a particular customer.

AYC2C
The signal processor (SP) circuit card.

AYC3B
A T1 (digital) circuit card.

AYC5B
The IVP6 Tip/Ring (analog) circuit card.

AYC6B
The IVP4 Tip/Ring (analog) circuit card.

AYC7
The companion (CMP) circuit card.

AYC9
The Text-to-Speech circuit card.

AYC10
The IVC6 Tip/Ring (analog) circuit card.

AYC11
A T1 (digital) circuit card.

AYC16
The IVP6-IU Tip/Ring (analog) circuit card.

AYC21
The E1/T1 (digital) circuit card.

AYC26
The IVP6-IA Tip/Ring (analog) circuit card.

AYC27
The IVP6-ID Tip/Ring (analog) circuit card.

AYC28
The IVP6 Tip/Ring (analog) circuit card.

AYC30
The NGTR (analog) circuit card.

AYC43
The speech and signal processor (SSP) circuit card.

B

back up
The preservation of the information in a file in a different location, so that the data is not lost in the event of hardware or system failure.

backing up an application
Using a utility that makes an archive copy of a completed application or an interim copy of an application in progress. The back-up copy can be restored to the system if the on-line version is damaged, or if you make revisions and want to go back to the previous version.

barge-in
A capability provided by WholeWord speech recognition and Dial Pulse Recognition (DPR) that allows callers to speak or enter their responses during the prompt and have those responses recognized (similar to the Speak with Interrupt capability). See also "echo cancellation."

batch file
A file containing one or more lines, each of which is a command executable by the UNIX shell.

BB
bulletin board

binary synchronous communications
A character-oriented synchronous link protocol.

blind transfer protocol
A protocol in which a call is completed as soon as the extension is dialed, without having to wait to see if the telephone is busy or if the caller answered.

bps
bits per second

BRDG
call bridging process

bridging
The process of connecting one telephone network connection to another over the INTUITY CONVERSANT system TDM bus. Bridging decreases the processing load on the system since an active bridge does not require speech processing, database access, host activity, etc., for the transaction.

BSC
binary synchronous communications

bundle
In the context of the Enhanced File Transfer package, this term is used to denote a single file, a group of files (package), or a combination of both.

byte
A unit of storage in the computer. On many systems, a byte is 8 bits (binary digits), which is the equivalent of one character of text.

C

call classification analysis
A process that enables application designers to use information available within the system to classify the disposition of originated and transferred calls. Intelligent CCA is provided with the system. Full CCA is an optional feature package.

call data event
A parameter that specifies a list of variables that are appended to a call data record at the end of each call.

call data handler process
A software process that accumulates generic call statistics and application events.

called party number
The number dialed by the person making a telephone call. Telephone switching equipment can use this number to selectively route an incoming call to a particular department or agent.

caller
The party who calls for a service, gets connected to the INTUITY CONVERSANT system, and interacts with it. As the INTUITY CONVERSANT system can also make outbound calls for service, the caller can also be the person who responds to those outbound calls.

call progress tones
Standard telephony sounds that indicate the status of the call. These sounds include busy, fast busy, ringback, reorder, etc.

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

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

CAS
channel associated signalling

caution
An admonishment or advisory statement used in INTUITY CONVERSANT system documentation to alert the user to the possibility of a service interruption or a loss of data.

CCA
call classification analysis

CDH
call data handler process

CELP
code excited linear prediction

central office
An office or location in which large telecommunication devices such as telephone switches and network access facilities are maintained. These locations follow strict installation and operation requirements.

central processing unit
See "processor."

CGEN
Voice system general message class

channel
See "port."

channel associated signaling
A type of signaling that can be used on E1 circuit cards. It occurs on channel 16.

CICS
Customer Information Control System

circuit card upgrade
A new circuit card that replaces an existing card in the platform. Usually the replacement is an updated version of the original circuit card to replace technology made obsolete by industry trends or a new system release.

cluster controller
A bisynchronous interface that provides a means of handling remote communication processing.

CMP (AYC7)
The companion circuit card to the signal processor (SP).

CMS
Call Management System

CO
central office

code excited linear prediction
A means of encoding analog voice signals into digital signals that provides excellent quality with use of minimum disk space.

command
An instruction or request the user issues to the system software to make the system perform a particular function. An entire command consists of the command name and options.

configuration
The arrangement of the software and hardware of a computer system or network. The INTUITY CONVERSANT system configuration includes either a standard or custom processor, peripheral equipment (for example, printers and modems), and software applications. Configuration also refers to the way the switch network is set up; that is, the types of products that are in the network and how those products communicate.

configuration management
The component of the system that allows you to manage the current configuration of voice channels, host sessions, and database connections, assign scripts to run on specific voice channels or host sessions, assign functionality to SSP and E1/T1 circuit cards, and perform various maintenance functions.

connect and disconnect (C and D) tones
DTMF tones that inform the system when the attendant has been connected (C) and when the caller has been disconnected (D).

connected digits
A sequence of digits that the system can process as a group, rather than requiring the caller to enter the digits one at a time.

Converse Data Return (conv_data)
A Script Builder action that supports the DEFINITY® call vectoring (routing) feature by enabling the switch to retain control of vector processing in the system environment. It supports the DEFINITY "converse" vector command to establish a two-way routing mechanism between the switch and the system to facilitate data passing and return.

controller circuit card
A circuit card used on a computer system that controls its basic functionality and makes the system operational. These circuit cards are used to control magnetic peripherals, video monitors, and basic system communications.

copying an application
A utility in which information from a source application is directed into the destination application.

coresidency
The ability of two products or services to operate and interact with each other on a single hardware platform. An example of this is the use of an INTUITY CONVERSANT system along with a package from a different vendor on the same system platform.

CPE
customer provided equipment or customer premise equipment

CPN
called party number

CPT
call progress tones

CPU
central processing unit

crash
An interactive utility for examining the operating system core and for determining if system parameters are being exceeded.

CSU
channel service unit

custom speech
Unique words or phrases to be used in INTUITY CONVERSANT system voice prompts that Lucent Technologies custom records on a per-customer basis.

custom vocabulary
A specialized package of unique words or phrases created on a per-customer basis and used by WholeWord or FlexWord speech recognition.

Customer Information Control System
Part of the operating system that manages resources for running applications (for example, IND$FILE). Note that TSO and CMS provide analogous functionality in other host environments.

CVS
converse vector step

D

danger
An admonishment or advisory statement used in INTUITY CONVERSANT system documentation to alert the user to the possibility of personal injury or death.

data interface process
A software process that communicates with Script Builder applications.

database
A structured set of files, records, or tables.

database field
A field used to extract values from a local database and form the structure upon which a database is built.

database record
The information in a database for a person, product, event, etc. The database record is made up of individual fields for each information item.

database table
A structure, made up of columns and rows, that holds information in a database. Database tables provide a means of storing information that changes too often to "hard-code," or store permanently, in the transaction outline.

dB
decibel

DB
database

DBC
database checking process

DBMS
database management system

DC
direct current

DCE
data communications equipment

DCP
digital communications protocol

debug
The process of locating and correcting errors in computer programs; also referred to as "troubleshooting."

default
The way a computer performs a task in the absence of other instructions.

default owner
The owner of a channel when no process takes ownership of that channel. The default owner holds all idle, in-service channels. In terms of the IRAPI, this is typically the Application Dispatch process.

diagnose
The process of performing diagnostics on a bus or on Tip/Ring, E1/T1, or SSP circuit cards.

dial ahead
The ability to collect and process touch-tone inputs in sequence, even when they are received before the prompts.

dial pulse recognition
A method of recognizing caller pulse inputs from a rotary telephone.

dialed number identification service
A service that allows incoming calls to contain information about the telephone number for which it is destined.

dial through
A capability provided by touch-tone and dial pulse recognition that allows callers to enter their responses during the prompt and have those responses recognized (similar to the Speak with Interrupt capability). See also "barge-in" and "echo cancellation".

dictionary
A reference book containing an alphabetical list of words, with information given for each word including meaning, pronunciation, and etymology.

DIMM
dual in-line memory module

DIO
disk input and output process

DIP
data interface process

directory
A type of file used to group and organize other files or directories.

display errdata
A command that displays system errors sent to the logger.

DMA
direct memory address

DNIS
dialed number identification service

DPR
dial pulse recognition

DSP
digital signal processor

DTE
data terminal equipment

DTMF
dual tone multi-frequency

DTR
data terminal ready

dual 3270 links
A feature that provides an additional physical unit (PU) for a cost-effective means of connecting to two host computers. The customer can connect a system to two separate FEPs or to a single FEP shared by one or more host computers. Each link supports a maximum of 32 LUs.

dual tone multi-frequency
A touch-tone sound that is an audio signal including two different frequencies. *DTMF feedback* is the process of the "switch" providing this information to the system. *DTMF muting* is the process of ignoring these tones (which might be simulated by human speech) when they are not needed for the application.

dump space
An area of the disk that is fixed in size and should equal the amount of RAM on the system. The operating system "dumps" an image of core memory when the system crashes. The dump can be fetched after rebooting to help in analyzing the cause of the crash.

E

E&M
Ear and Mouth

E1 / T1
Digital telephony interfaces, commonly called *trunks*. E1 is an international standard at 2.048 Mbps. T1 is a North American standard at 1.544 Mbps.

Ear and Mouth
A common T1 trunking protocol for connection between two "switches."

EBCDIC
Extended Binary Coded Decimal Interexchange Code

echo cancellation
The process of making the channel quiet enough so that the system can hear and recognize WholeWord and dial pulse inputs during the prompt. See also "barge-in."

ECS
Enterprise Communications Server

editor system
A system that allows speech phrases to be displayed and edited by a user. See "Graphical Speech Editor."

EFT
Enhanced File Transfer

EIA
Electronic Industries Association

EISA
Extended Industry Standard Architecture

EMI
electromagnetic interference

Enhanced Basic Speech
Pre-recorded speech available from Lucent Technologies in several languages. Sometimes called "standard speech."

Enhanced File Transfer
A feature that allows the transferring of files automatically between the INTUITY CONVERSANT system and a synchronous host processor on a designated logical unit.

Enhanced Serial Data Interface
A software- and hardware-controlled method used to store data on magnetic peripherals.

Enterprise Communications Server
The telephony equipment that connects your business to the telephone network. Sometimes called a "switch."

error message
A message on the screen indicating that something is wrong with a possible suggestion of how to correct it.

ESD
electrostatic discharge

ESDI
Enhanced Serial Data Interface

ESS
electronic switching system

EST
Enhanced Software Technologies, Inc.

ET
error tracker

Ethernet
A name for a local area network that uses 10BASE5 or 10BASE2 coaxial cable and InterLAN signaling techniques.

event
The notification given to an application when some condition occurs that is generally not encountered in normal operation.

EXTA
external alarms feature message class

external actions
Specific predefined system tasks that Graphical Designer or Script Builder can call or *invoke* to interact with other products or services. When an external action is invoked, the systems displays a form that provides choices in each field for the application developer to select. Examples are Call_Bridge, Make_Call, SP_Allocate, SR_Prompt, etc.

external functions
Specific predefined (or customer-created) system tasks that can Graphical Designer or Script Builder can call or *invoke* to interact with other products or services. The function allows the application developer to enter the argument(s) for the function to act on (they are not provided in a choices list). Examples are concat, getarg, length, substring, etc.

F

FAX Actions
An optional feature package that allows the system to send fax messages.

FCC
Federal Communications Commission

FDD
floppy disk drive

feature
A function or capability of a product or an application within the INTUITY CONVERSANT system.

feature package
An optional package that may contain both hardware and software resources to provide additional functionality to a standard system.

feature_tst script package
A standard INTUITY CONVERSANT system software program that allows a user to perform self-tests of critical hardware and software functionality.

FEP
front end processor

FFE
Form Filler Plus feature message class

field
See "database field."

FIFO
first-in-first-out processing order

file
A collection of data treated as a basic unit of storage.

file transfer
An option that allows you to transfer files interactively or directly to and from UNIX using the file transfer system (FTS).

filename
Alphabetic characters used to identify a particular file.

FlexWord™ speech recognition
A type of speech recognition based on subword technology that recognizes phonemes or parts of words in a specific language. See also "subword technology."

foos
facility out-of-service state

Form Filler Plus
An optional feature package that provides the capability for application scripts to record a caller's responses to prompts for later transcription and review.

FTS
file transfer process message class

Full CCA
A feature package that augments the types of call dispositions that Intelligent CCA can provide.

function key
A key, labeled F1 through F8, on your keyboard to which the INTUITY CONVERSANT system software gives special properties for manipulating the user interface.

G

GEN
PRISM logger and alerter general message class

grammar
The inputs that a recognizer can match (identify) from a caller.

Graphical Speech Editor
A window-driven, X Windows/Motif based, graphical user interface (GUI) that can be accessed to perform different functions associated with the creation and editing of speech files for applications.

Graphical Designer
An optional software package that provides a graphical interface to assist in development of voice response applications on the INTUITY CONVERSANT system (see also "Script Builder").

GSE
Graphical Speech Editor

GUI
graphical user interface

H

hard disk drive
A high-capacity data storage/retrieval device that is located inside a computer platform. A hard disk drive stores data on nonremovable high-density magnetic media based on a predetermined format for retrieval by the system at a later date.

hardware
The physical components of a computer system. The central processing unit, disks, tape, and floppy drives, etc., are all hardware.

Hardware Resource Allocator
A software program that resolves or blocks the allocation of CPU and memory resources for controlling and optional circuit cards.

hardware upgrade
Replacement of one or more fundamental platform hardware components (for example, the CPU or hard disk drive), while the existing platform and other existing optional circuit cards remain.

HDD
hard disk drive

High Level Language Applications Programming Interface
An application programming interface that allows a user to write custom applications that can communicate with a host computer via an API.

HLLAPI
High Level Language Applications Programming Interface

HOST
host interface process message class

host computer
A computer linked to a network to provide a range of services, such as database access and computation. The host computer operates in a time-sharing manner with other computers linked to it via the network.

hwoos
hardware out-of-service state

Hz
Hertz

I

IBM
International Business Machines

iCk or ICK
The system integrity checking process.

ID
identification

IDE
integrated disk electronics

idle channel
A channel that either has no owner or is owned by its default owner and is onhook.

IE
information element

IND$FILE
The standard SNA file transfer utility that runs as an application under CICS, TSO, and CMS. IND$FILE is independent of link-level protocols such as BISYNC and SDLC.

independent software vendor
A company that has an agreement with Lucent Technologies to develop software to work with the INTUITY CONVERSANT system to provide additional features required by customers.

indexed table
A table that, unlike a nonindexed table, can be searched via a field name that has been indexed.

industry standard architecture
A PC bus standard that allows processors and other circuit cards to communicate with each other.

INIT
voice system initialization message class

initialize
To start up the system for the first time.

inserv
in-service state

Integrated Services Digital Network
A network that provides end-to-end digital connectivity to support a wide range of voice and data services.

Integrated Voice Processing (IVP) circuit card
The IVP4 or IVP6 circuit card that provides Tip/Ring connections. The NGTR (AYC30) card also provides the same functions.

intelligent CCA
Monitoring the line after dialing is complete to determine whether a busy, reorder (fast busy), or other failure has been encountered. It also recognizes when the extension is answered or if the extension is not answered after a specified number of rings. The monitoring capabilities are dependent on the network interface circuit card and protocol used

interface
The access point of a system. With respect to the INTUITY CONVERSANT system, the interface is designed to provide you with easy access to the software capabilities.

interrupt
The termination of voice and/or telephony functions when some condition occurs.

INTUITY Response Application Programming Interface
A library of commands that provide a standard development interface for voice-telephony applications.

IPC
interprocess communication

IPC
intelligent ports card (IPC-900)

IPCI
integrated personal computer interface

IRAPI
Intuity Response Application Programming Interface

IRQ
interrupt request

ISA
industry standard architecture

ISDN
Integrated Services Digital Network

ISV
independent software vendor

ITAC
International Technical Assistance Center

IVC6 circuit card (AYC10)
A Tip/Ring (analog) circuit card with six channels.

IVP4 circuit card (AYC6 or AYC6B)
A Tip/Ring (analog) card with four channels.

IVP6 circuit card (AYC5, AYC5B, or AYC28)
A Tip/Ring (analog) card with six channels.

K

Kbps
kilobites per second

Kbyte
kilobyte

keyboard mapping
In emulation mode, this feature enables the keyboard to send 3270 keyboard codes to the host according to a configuration table set up during installation.

keyword spotting
A capability provided by WholeWord speech recognition that allows the system to recognize a single word in the middle of an entire phrase spoken by a caller in response to a prompt.

L

LAN
local area network

LDB
local database

LED
light-emitting diode

library states
The state information about channel activities maintained by the IRAPI.

LIFO
last-in-first-out processing order

line side E1
A digital method of interfacing an INTUITY CONVERSANT system to a PBX or “switch” using E1-related hardware and software.

line side T1
A digital method of interfacing an INTUITY CONVERSANT system to a PBX or “switch” using T1-related hardware and software.

listfile
An ASCII catalog that lists the contents of one or more talkfiles. Each application script is typically associated with a separate listfile. The listfile maps speech phrase strings used by application scripts into speech phrase numbers.

local area network
A data communications network in a limited geographical area. The LAN provides communications between computers and peripherals.

local database
A database residing on the INTUITY CONVERSANT system.

LOG
INTUITY CONVERSANT system logger process message class

logical unit
A type of SNA Network Addressable Unit.

logdaemon
A UNIX system information and error logging process.

logger
See "logdaemon."

logging on/off
Entering or exiting the INTUITY CONVERSANT system software.

LSE1
line side E1

LST1
line side T1

LU
logical unit

M

magnetic peripherals
Data storage devices that use magnetic media to store information. Such devices include hard disk drives, floppy disk drives, and cartridge tape drives.

main screen
The INTUITY CONVERSANT system screen from which you are able to enter either the System Administration or Voice System Administration menu.

maintenance process
A software process that runs temporary diagnostics and maintains the state of circuit cards and channels.

manoos
manually out-of-service state

MAP/100
multi application platform 100

MAP/100C
multi application platform 100C

MAP/40
multi application platform 40

MAP/5P
multi application platform 5P

masked event
An event that an application can ignore (that is, the application can request not to be informed of the event).

master
A circuit card that provides clock information to the TDM bus.

Mbps
megabits per second

MByte
megabyte

megabyte
A unit of memory equal to 1,048,576 bytes (1024 x 1024). It is often rounded to one million.

menu
Options presented to a user on a computer screen or with voice prompts.

MF
multifrequency

MHz
megahertz

Microsoft
A manufacturer of software products, primarily for IBM-compatible computers.

mirroring
A method of data backup that allows all of the data transactions to the primary hard disk drive to be copied and maintained on a second identical drive in near real time. If the primary disk drive crashes or becomes disabled, all of the data stored on it (up to 1.2 billion bytes of information) is accessible on the second mirrored disk drive.

ms
millisecond

msec
millisecond

MS-DOS
A personal computer disk operating system developed by the Microsoft Corporation.

MTC
maintenance process

multifrequency
Dual tone digit signalling (similar to DTMF), used for trunk addressing between network switches or by network operators.

multithreaded application
A single process/application that controls several channels. Each thread of the application is managed explicitly. Typically this means state information for each thread is maintained and the state of the application on each channel is tracked.

N

NCP
Network Control Program

NEBS
Network Equipment Building Standards

NEMA
National Electrical Manufacturers Association

netoos
network out-of-service state

NetView
An optional feature package that transmits high-priority (major or critical) messages to the host as operator-generated alerts (OGAs) over the 3270 host link. The NetView Alarm feature package does not require a dedicated LU.

next generation Tip/Ring (AYC30) circuit card
An analog circuit card with six channels.

NFAS
non-facility associated signalling

NFS
network file sharing

NGTR
next generation Tip/Ring (AYC30) circuit card

NM-API
Network Management - Application Programming Interface

NMVT
network management vector transport

nonex
nonexistent state

nonindexed table
A table that can be searched only in a sequential manner and not via a field name.

nonmasked event
An event that must be sent to the application. Generally, an event is nonmaskable if the application would likely encounter state transition errors by trying to it.

NRZ
non return to zero

NRZI
non return to zero inverted

null value
An entry containing no value. A field containing a null value is normally displayed as blank and is different from a field containing a value of zero.

O

obsolete hardware
Hardware that is no longer supported on the INTUITY CONVERSANT system.

OEM
original equipment manufacturer

OGA
operator-generated alert

on-line help
Messages or information that appear on the user's screen when a "function key" (F1 through F8) is pressed.

operator-generated alert
A system-monitoring message that is transmitted from the INTUITY CONVERSANT system or other computer system to an IBM host computer and is classified as critical or major.

option
An argument used in a command line to modify program output by modifying the execution of a command. When you do not specify any options, the command executes according to its default options.

ORACLE
A company that produces relational database management software. It is also used as a generic term that identifies a database residing on a local or remote system that is created and maintained using an ORACLE RDBMS product.

P

P&C
Prompt and Collect Script Builder action step

PBX
private branch exchange

PC
personal computer

PCB
printed circuit board

PCI
peripheral component interconnect

PCM
pulse code modulation

PEC
price element code

peripheral (device)
Equipment such as printers or terminals that is in addition to the basic processor.

peripheral component interconnect
A newer, higher speed PC bus that is gradually displacing ISA for many components.

permanent process
A process that starts and initializes itself before it is needed by a caller.

phoneme
A single basic sound of a particular spoken language. For example, the English language contains 40 phonemes that represent all basic sounds used with the language. The English word "one" can be represented with three phonemes, "w" - "uh" - "n." Phonemes vary between languages because of guttural and nasal inflections and syllable constructs.

phrase filtering (screening)
The rejection of unrecognized speech. The WholeWord and FlexWord speech recognition packages can be programmed to reprompt the caller if the INTUITY CONVERSANT system does not recognize a spoken response.

phrase tag
A string of up to 50 characters that identifies the contents of a speech phrase used by an application script.

platform migration
See "platform upgrade."

platform upgrade
The process of replacing the existing platform with a new platform.

pluggable
A term usually used with speech technologies, in particular standard speech, to indicate that a basic algorithmic technique has been implemented to accept one or more sets of parameters that tailors the algorithm to perform in one or more languages.

poll
A message sent from a central controller to an individual station on a multipoint network inviting that station to send if it has any traffic.

polling
A network arrangement whereby a central computer asks each remote location whether it wants to send information. This arrangement enables each user or remote data terminal to transmit and receive information on shared facilities.

port
A connection or link between two devices that allows information to travel to a desired location. See "telephone network connection."

PRI
Primary Rate Interface

Primary Rate Interface
An ISDN term for connections over E1 or T1 facilities that are usually treated as trunks.

private branch exchange
A private switching system, either manual or automatic, usually serving an organization, such as a business or government agency, and usually located on the customer's premises.

processor
In INTUITY CONVERSANT system documentation, the computer on which UnixWare and INTUITY CONVERSANT system software runs. In general, the part of the computer system that processes the data. Also known as the "central processing unit."

prompt
A message played to a caller that gives the caller a choice of selections in a menu and asks for a response. Compare to "announcement."

prompt and collect (P and C)
A message played to a caller that gives the caller a choice of selections in a menu and asks for a response. The responses is collected and the script progresses based on the caller's response.

pseudo driver
A driver that does not control any hardware.

PS&BM
power supply and battery module

PSTN
public switch telephone network

pulse code modulation
A digital modulation method of encoding voice signals into digital signals. See also "adaptive differential pulse code modulation."

R

RAM
random access memory

RDMBS
ORACLE relational database management system

RECOG
speech recognition feature message class

recognition type
The type of input the recognizer can understand. Available types include touch-tone, dial pulse, and Advanced Speech Recognition (ASR), which includes WholeWord and FlexWord speech recognition.

recognizer
The part of the system that compares caller input to a grammar in order to correctly match (identify) the caller input.

record
See "database record."

recovery
The process of using copies of the INTUITY CONVERSANT system software to reconstruct files that have been lost or damaged. See also "restore."

remote database
Information stored on a system other than the INTUITY CONVERSANT system that can be accessed by the INTUITY CONVERSANT system.

remote maintenance circuit card
An INTUITY CONVERSANT system circuit card, available with a built-in modem, that allows remote personnel (for example, field support) to access all INTUITY CONVERSANT system machines. This card is standard equipment on all new MAP/100, MAP/40, and MAP/5P purchases.

REN
ringer equivalence number

reports administration
The component of INTUITY CONVERSANT system that provides access to system reports, including call classification, call data detail, call data summary, message log, and traffic reports.

restore
The process of recovering lost or damaged files by retrieving them from available back-up tapes or from another disk device. See also “recovery.”

restore application
A utility that replaces a damaged application or restores an older version of an application.

reuse
The concept of using a component from a source system in a target system after a software upgrade or platform migration.

RFS
remote file sharing

RM
resource manager

RMB
remote maintenance circuit card

roll back
To cancel changes to a database since the point at which changes were last committed.

rollback segment
A portion of the database that records actions that should be undone under certain circumstances. Rollback segments are used to provide transaction rollback, read consistency, and recovery.

RTS
request to send

S

SBC
sub-band coding

screen pop
A method of delivering a screen of information to a telephone operator at the same time a telephone call is delivered. This is accomplished by a complex chain of tasks that include identifying the calling party number, using that information to access a local or remote ORACLE database, and pulling a “form” full of information from the database using an ORACLE database utility package.

script
The set of instructions for the INTUITY CONVERSANT system to follow during a transaction.

Script Builder
An optional software package that provides a menu-oriented interface designed to assist in the development of custom voice response applications on the INTUITY CONVERSANT system.

SCSI
small computer system interface

SDLC
synchronous data link control

SDN
software defined network

shared database table
A database table that is used in more than one application.

shared speech
Speech that is a part of more than one application.

shared speech pools
A parameter that allows the user of a voice application to share speech components with other applications.

SID
station identification

signal processor circuit card (AYC2, AYC2B, AYC2C, or AYC9d)
A speech processing circuit card that is an older, lower-capacity version of the speech and signal processor (SSP) circuit card (AYC43).

SIMMs
single inline memory modules

single inline memory modules
A method of containing random access memory (RAM) chips on narrow circuit card strips that attach directly to sockets on the CPU circuit card. Multiple SIMMs are sometimes installed on a single CPU circuit card.

single-threaded application
An application that runs on a single voice channel.

slave
A circuit card that depends on the TDM bus for clock information.

SLIP
serial line interface protocol

small computer system interface
A disk drive control technology in which a single SCSI adapter circuit card plugged into a PC slot is capable of controlling as many as seven different hard disks, optical disks, tape drives, etc.

SNA
systems network architecture

SNMP
simple network management protocol

software
The set or sets of programs that instruct the computer hardware to perform a task or series of tasks — for example, UnixWare software and the INTUITY CONVERSANT system software.

software upgrade
The installation of a new version of software in which the existing platform and circuit cards are retained.

source system
The system from which you are upgrading (that is, your system as it exists *before* you upgrade).

SP
signal processor circuit card (AYC2, AYC2B, AYC2C, or AYC9d)

speech and signal processor circuit card (AYC43)
The high-performance signal processing circuit card introduced in V6.0 capable of simultaneous support for various speech technologies.

speech energy
The amount of energy in an audio signal. Literally translated, it is the output level of the sound in every phonetic utterance.

speech envelope
The linear representation of voltage on a line. It reflects the sound wave amplitude at different intervals of time. This envelope can be plotted on a graph to represent the oscillation of an audio signal between the positive and negative extremes.

speech file
A file containing an encoded speech phrase.

speech filesystem
A collection of several talkfiles. The filesystem is organized into 16-Kbyte blocks for efficient management and retrieval of talkfiles.

speech modeling
The process of creating WholeWord speech recognition algorithms by collecting thousands of different speech samples of a single word and comparing them all to obtain a statistical average of the word. This average is then used by a WholeWord speech recognition program to recognize a single spoken word.

speech space
An area that contains all digitized speech used for playback in the applications loaded on the system.

speech phrase
A continuous speech segment encoded into a digital string.

speech recognition
The ability of the system to understand input from callers.

SPIP
singal processor interface process

SPPLIB
speech processing library

SQL
structured query language

SR
speech recognition

SSP
speech and signal processor circuit card (AYC43)

standard speech
The speech package available in several languages containing simple words and phrases produced by Lucent Technologies for use with the INTUITY CONVERSANT system. This package

includes digits, numbers, days of the week, and months, each spoken with initial, medial, and falling inflection. The speech is in digitized files stored on the hard disk to be used in voice prompts and messages to the caller. This feature is also called Enhanced Basic Speech.

standard vocabulary
A standard package of simple word speech models provided by Lucent Technologies and used for WholeWord speech recognition. These phrases include the digits “zero” through “nine,” “yes,” “no,” and “oh,” or the equivalent words in a specific local language.

string
A contiguous sequence of characters treated as a unit. Strings are normally bounded by white spaces, tabs, or a character designated as a separator. A string value is a specified group of characters symbolized by a variable.

structured query language
A standard data programming language used with data storage and data query applications.

subword technology
A method of speech recognition used in FlexWord recognition that recognizes phonemes or parts of words. Compare to “WholeWord speech recognition (SR).”

switch
A software and hardware device that controls and directs voice and data traffic. A customer-based switch is known as a “private branch exchange.”

switch hook
The device at the top of most telephones that is depressed when the handset is resting in the cradle (in other words, is *on hook*). The device is raised when the handset is picked up (in other words, when the telephone is *off hook*).

switch hook flash
A signaling technique in which the signal is originated by momentarily depressing the “switch hook.”

switch interface administration
The component of the INTUITY CONVERSANT system that enables you to define the interaction between the INTUITY CONVERSANT system and switches by allowing you to establish and modify switch interface parameters and protocol options for both analog and digital interfaces.

switch network
Two or more interconnected telephone switching systems.

synchronous communication
A method of data transmission in which bits or characters are sent at regular time intervals, rather than being spaced by start and stop bits. Compare to “asynchronous communication.”

SYS
UNIX system calls message class

sysgen
system generation

System 75
An advanced digital switch supporting up to 800 lines that provides voice and data communications for its users.

System 85
An advanced digital switch supporting up to 3000 lines that provides voice and data communications for its users.

system administrator
The person assigned the responsibility of monitoring all INTUITY CONVERSANT system software processing, performing daily system operations and preventive maintenance, and troubleshooting errors as required.

system architecture
The manner in which the INTUITY CONVERSANT system software is structured.

system message
An event or alarm generated by either the INTUITY CONVERSANT system or end-user process.

system monitor
A component of the INTUITY CONVERSANT system that tests to verify that each incoming telephone line and its associated Tip/Ring or T1 circuit card is functional. Through the "System Monitor" component, you are able to see displays of the Voice Channel and Host Session Monitors.

T

T1
A digital transmission link with a capacity of 1.544 Mbps.

table
See "database table."

talkfile
An ASCII file that contains the speech phrase tags and phrase tag numbers for all the phrases of a specific application. The speech phrases are organized and stored in groups. Each talkfile can contain up to 65,535 phrases, and the speech filesystem can contain multiple talkfiles.

talkoff
The process of a caller interrupting a prompt, so the prompt message stops playing.

target system
The system to which you are upgrading (that is, your system as you expect it to exist *after* you upgrade).

TAS
transaction assembler script

TCC
Technology Control Center

TCP/IP
transmission control protocol/internet protocol

TDM
time division multiplexing

TE
terminal emulator

telephone network connection
The point at which a telephone network connection terminates on an INTUITY CONVERSANT system. Supported telephone connections are Tip/Ring, T1, and E1.

terminal emulator
Software that allows a PC or UNIX process to look like a specific type of terminal. In particular, it allows the INTUITY CONVERSANT system to temporarily transform itself into a "look alike" of an IBM 3270 terminal. In addition to providing full 3270 functionality, the terminal emulator enables you to transfer files to and from UNIX.

Text-to-Speech
An optional feature that allows an application to play US English speech directly from ASCII text by converting that text to synthesized speech. The text can be used for prompts or for text retrieved from a database or host, and can be spoken in an application with prerecorded speech. Text-to-Speech application development is supported through Graphical Designer and Script Builder.

ThickNet
A 10-mm (10BASE5) coaxial cable used to provide interLAN communications.

ThinNet
A 5-mm (10BASE2) coaxial cable used to provide interLAN communications.

time-division multiplex
A method of serving a number of simultaneous channels over a common transmission path by assigning the transmission path sequentially to the channels, with each assignment being for a discrete time interval.

Tip/Ring
Analog telecommunications using four-wire media.

token ring
A ring type of local area network that allows any station in the network to communicate with any other station.

trace
A command that can be used to monitor the execution of a script.

traffic
The flow of information or messages through a communications network for voice, data, or audio services.

transaction
The interactions (exchanges) between the caller and the voice response system. A transaction can involve one or more telephone network connections and voice responses from the INTUITY CONVERSANT system. It can also involve one or more of the system optional features, such as speech recognition, 3270 host interface, FAX Actions, etc.

transaction assembler script
The computer program code that controls the application operating on the voice response system. The code can be produced from Graphical Designer, Script Builder, or by writing directly in TAS code.

transaction state machine process
A multi-channel IRAPI application that runs applications controlled by TAS script code.

transient process
A process that is created dynamically only when needed.

TRIP
Tip/Ring interface process

troubleshooting
The process of locating and correcting errors in computer programs. This process is also referred to as debugging.

TSO
Technical Services Organization

TSO
time share operation

TSM
transaction state machine process

TTS
Text-to-Speech

TWIP
T1 interface process

U

UK
United Kingdom

US
United States of America

UNIX Operating System
A multiuser, multitasking computer operating system originally developed by Lucent Technologies.

UNIX shell
The command language that provides a user interface to the UNIX operating system.

upgrade scenario
The particular combination of current hardware, software, application and target hardware, software, applications, etc.

usability
A measurement of how easy an application is for callers to use. The measurement is made by making observations and by asking questions. An application should have high usability to be successful.

USOC
universal service ordering code

UVL
unified voice library

V

VDC
video display controller

vi editor
A screen editor used to create and change electronic files.

virtual channel
A channel that is not associated with an interface to the telephone network (Tip/Ring, T1, LSE1/LST1, or PRI). Virtual channels are intended to run "data-only" applications which do not interact with callers but may interact with DIPs. Voice or network functions (for example, coding or playing speech, call answer, origination, or transfer) will not work on a virtual channel. Virtual channel applications can be initiated only by a "virtual seizure" request to TSM from a DIP.

vocabulary
A collection of words that the INTUITY CONVERSANT system is able to recognize using either WholeWord or FlexWord speech recognition.

vocabulary activation
The set of active vocabularies that define the words and wordlists known to the FlexWord recognizer.

vocabulary loading
The process of copying the vocabulary from the system where it was developed and adding it to the target system.

voice channel
A channel that is associated with an interface to the telephone network (Tip/Ring, T1, E1, LSE1/LST1, or PRI). Any INTUITY CONVERSANT system application can run on a voice channel. Voice channel applications can be initiated by being assigned to particular voice channels or dialed numbers to handle incoming calls or by a "soft seizure" request to TSM from a DIP or the **soft_szr** command.

voice processing co-marketer
A company licensed to purchase voice processing equipment, such as the INTUITY CONVERSANT system, to market and sell based on their own marketing strategies.

voice response output process
A software process that transfers digitized speech between system hardware (for example, Tip/Ring and SSP circuit cards) and data storage devices (for example, hard disk, etc.)

voice response unit
A computer connected to a telephone network that can play messages to callers, recognize caller inputs, access and update a databases, and transfer and monitor calls.

voice system administration
The means by which you are able to administer both voice- and nonvoice-related aspects of the system.

VPC
voice processing co-marketer

VROP
voice response output process

VRU
voice response unit

W

warning
An admonishment or advisory statement used in INTUITY CONVERSANT system documentation to alert the user to the possibility of equipment damage.

WholeWord speech recognition (SR)
An optional feature, available in several languages, based on whole-word technology that can recognize the numbers one through zero, “yes”, and “no” (the key words). This feature is reliable, regardless of the individual speaker. This feature can identify the key words when spoken in phrases with other words. A string of key words, called *connected digits*, can be recognized. During the prompt announcement, the caller can speak or use touch tones (or dial pulses, if available). See also “whole-word technology.”

whole-word technology
The ability to recognize an entire word, rather than just the phoneme or a part of a word. Compare to “subword technology.”

wink signal
An interruption of current to a busy lamp indicating that there is a line on hold.

word
A unique utterance understood by the recognizer.

wordlist
A set of FlexWords that are available for recognition by an application during a Prompt & Collect action step.

word spotting
The ability to search through extraneous speech during a recognition.

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