

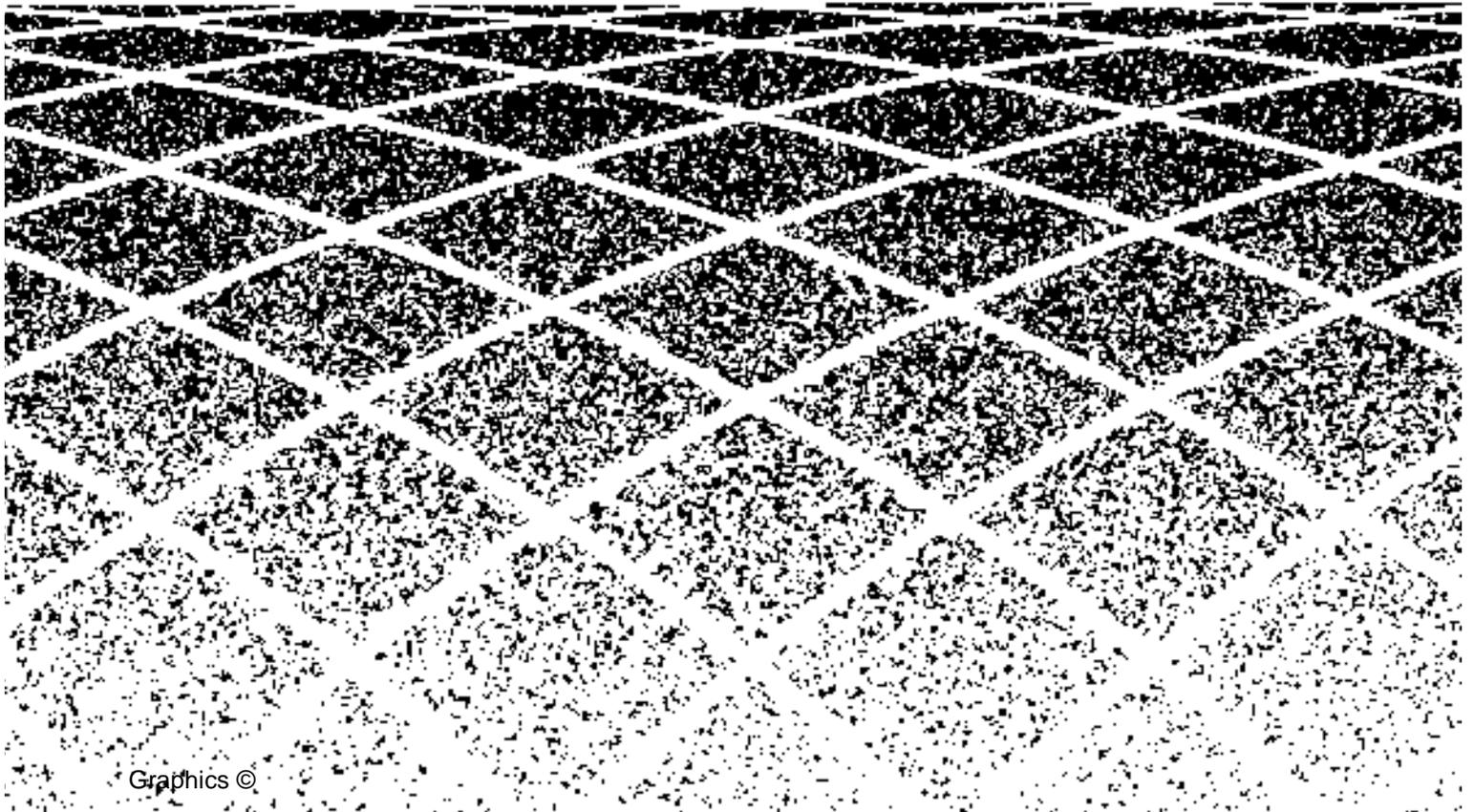


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CONVERSANT Voice Information System Version 4.0 Operations



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About This Book

Purpose

This book, *CONVERSANT VIS V4.0 Operations*, 585-350-703, is a reference tool for an operator administering the Intuity CONVERSANT® Voice Information System (VIS). A functioning VIS that handles touch-tone input, voice response, and line transfer is described in this book. The VIS uses a screen-based, menu-driven user interface to interact with the system operator or administrator. Whenever you see “VIS” in this book, it refers to the central processing unit (CPU). The CPU is based on one of the following platforms:

- Multi-Application Platform 100 (MAP/100)
- Multi-Application Platform 100C (MAP/100C)
- Multi-Application Platform 40 (MAP/40)

For information on the hardware and software supported by the VIS, refer to Chapter 2, “CONVERSANT VIS Hardware,” and Chapter 3, “CONVERSANT VIS Software,” in *CONVERSANT VIS System Description*, 585-350-207, or the *Voice Processing Hardware Installation* book specific to the above mentioned platforms.

Intended Audiences

This book, *CONVERSANT VIS V4.0 Operations*, is intended for United States (U.S.) and non-U.S. customers. Your system may or may not have all of the functionality described throughout this book. Furthermore, some features may only apply to customers in the U.S. If you are not sure whether or not a particular feature is available to you, please contact your local AT&T representative. If you are a non-U.S. customer, please contact the International Technical Assistance Center (ITAC) on 1-303-538-4666.

This book is aimed at the person who will be administering the CONVERSANT VIS on a daily basis. This individual performs the following functions:

- Executes procedures that change the internal configuration when equipment is added or removed
- Enters the service data
- Follows the daily operation routine
- Backs up the system according to a schedule
- Starts and stops the system as required
- Observes line traffic and hardware status
- Requests data to be displayed at the monitor or printed
- Monitors the progress of an individual transaction as provided by system messages
- Starts diagnostic tests on the hardware
- Performs maintenance procedures as scheduled
- Ensures that the proper operating environment is maintained

How This Book Is Organized

The organization of this book follows the order of the Voice System Administration screen, a branch of the CONVERSANT VIS VERSION 4.0 screen. The Voice System Administration screen lets you choose one of the seven menu items to administer at a given time. With the exception of Feature Packages and Script Builder Applications, each of the menu choices are described in one of the main chapters of this book. Chapter 2, "Application Administration", Chapter 3, "Configuration Management", Chapter 4, "Reports Administration", Chapter 5, "Switch Interface Administration", and Chapter 6, "System Monitor". "Feature Packages" provides administrative information for optional feature packages installed on the system that require a separate set of screens, for example, AT&T Adjunct/Switch Application Interface. Consequently, the Feature Packages screen will display feature package information only if you have one of these optional packages installed on your system. For the sake of convenience, "Starting Script Builder Application Administration" is discussed in Chapter 2, "Application Administration".

It is suggested that you read through the book in order, chapter by chapter. Once you have gone through the entire book, Chapters 1–6 probably will be the most helpful with day-to-day operations of the VIS.

Be sure to refer to the chapters in this book as needed if you have any questions while working with the VIS.

This book is organized into the following chapters:

- Chapter 1, "User Interface"

This chapter describes the visible portion of the VIS, the user interface. You will learn about the various screens in the system and how to maneuver through them.

- Chapter 2, "Application Administration"

This chapter gives a complete description of the application administration utilities that accompany the VIS.

- Chapter 3, "Configuration Management"

This chapter provides information on displaying and administering screens for Database Administration Host Links, Host Sessions, System Control, System Message Administration, and Voice Equipment.

- Chapter 4, "Reports Administration"

This chapter contains information on call classification reports, call data reports, traffic reports, and message log reports.

- Chapter 5, "Switch Interface Administration"

This chapter gives information on how to define the system and switch interaction by establishing and modifying switch interface parameters.

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- Chapter 6, "System Monitor"
This chapter provides details on the Voice Channel and Host Session Monitors.
 - Appendix A, "FACE Features"
This appendix explains the Framed Access Command Environment (FACE) and how to establish various parameter settings.
 - Appendix B, "UNIX System Basics"
This appendix describes the basic features needed to work with the UNIX operating system.
 - Appendix C, "Database Environment"
This appendix provides you with information on how to establish various environmental settings regarding the database component.
 - Appendix D, "Information for Advanced Users"
This chapter contains a variety of tips for the expert user of the VIS, from monitoring system performance to the transmission level plan.
 - Appendix E, "Performance Information"
This chapter contains information to assist you in evaluating performance issues that arise with the VIS.

This book also includes a list of Abbreviations, a Glossary and an Index.

Conventions Used in This Book

The following typographic conventions are used in this book:

- The word “enter” means to type a value and press `ENTER`. For example, an instruction to type `y` and press `ENTER` is shown as

Enter `y` to continue.

- The word “select” is used to mean the following: move to the desired menu item using the arrow keys and press `ENTER`.
- Terminal keys are shown in rounded boxes. For example, an instruction to press the enter key is shown as

Press `ENTER`.

- Function keys (also known as “soft” keys) are shown in square boxes followed by the actual name of the key on the keyboard in parentheses. For example, an instruction to press the choices key is shown as

Press `CHOICES` (F2).

- Two or three keys that you press at the same time (that is, you hold down the first key while pressing the second and/or third key) are shown as a series of rounded boxes. For example, an instruction to press and hold `ALT` while typing the letter `d` is shown as

Press `ALT` `D`.

- Information that is displayed on your terminal screen — including screen displays, field names, prompts, and error messages — is shown in typewriter-style constant-width type; for example

```
Installation is in progress -- do not remove the floppy disk.
```

- Information that you enter from your terminal keyboard is shown in **bold type**, for example

```
Enter root at the Console Login: prompt.
```

- Command and file names and their parameters are shown in **bold** type. Variable parameters are shown in **bold italic** type when they are part of a user input and in *regular italic* type when they are not. All are illustrated in the following example:

Use the **print** command to print your report. The command syntax is **print *reportname***, where *reportname* is the name of the report to be printed.

Related Resources

The following books should be used in conjunction with this book:

- *CONVERSANT VIS Version 4.0 Software Installation*, 585-350-111
- *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112

Refer to *CONVERSANT VIS Documentation Guide*, 585-350-002, for a complete list of associated documentation.

Customer Training

Customer training is available through the GBCS Training Center for CONVERSANT VIS. Contact your AT&T CONVERSANT VIS account executive/sales representative or call 1-800-255-8988 for details about the courses available.

Technical Updates

Every effort was made to ensure that the information contained in these books is technically accurate, and will guide readers in the normal operation of the system. There are instances however, when the CONVERSANT VIS Version 4.0 product behaves differently than is documented in the core library.

To help with this, an online bulletin board is available to all CONVERSANT VIS Version 4.0 customers that provides supplemental information about this product in an electronic mail format. These updates include hints, tips, and exception conditions about all aspects of the CONVERSANT VIS V4.0 product that were discovered after the core library was published.

This service is called Access, and is available 24 hours-a-day, seven days-a-week to anyone who subscribes to it. To begin receiving electronic CONVERSANT VIS Version 4.0 Access articles, call 1-800-242-6005, and ask for department 186.

Trademarks and Service Marks

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- CLEO and DataTalker are trademarks of CLEO Communications, Inc.
- UNIX is a registered trademark of Novell, Inc.
- ORACLE, Easy*SQL, SQL*Plus, SQL*Net, SQL*FORMS, SQL*Menu, ORACLE*Terminal, OBJECT*SQL, PRO*C, and SQL*ReportWriter are registered trademarks of the Oracle Corporation.
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User Interface Overview

The CONVERSANT Voice Information System (VIS) is designed to be flexible and easy to use. It is a sophisticated package, only part of which is ever directly seen by the operator. Although the unseen portions of the VIS are extremely crucial to its operation, it is the segment you work with, the user interface, that determines the ease with which the VIS may be used.

This chapter describes the visible portion of the VIS, the user interface. The VIS screen and its components are shown. Many examples are included in this chapter as well as in other chapters of this document.



NOTE:

The UNIX system tool, **vtlmgr**, is not supported with the VIS screen interface.

What Is a User Interface?

Although many different kinds of activities are involved in creating, modifying, and maintaining an application, they all share a common “user interface,” or method of interaction. This means that whether you are modifying the switch interface administration or displaying the current status of the voice channel monitor, displays and commands follow a consistent format and style.

This chapter includes descriptions of:

- VIS screen layout
- Screens/frames
- Function keys
- Using data within the VIS

There are a few activities that require slight variations from the normal user interface. These exceptions are noted where appropriate.

The Voice System Screen

The video monitor is the primary means of communication between you and the VIS. Although the information on the monitor screen often changes, the way the information is arranged does not change. The screen is divided into four areas, shown in Figure 1-1. The areas are:

- Work area

This is the largest portion of the screen. It contains one or more screens at any given time. Each screen is a workspace where you provide information about a specific aspect of your application.

"Screens/Frames" are described in more detail later in this chapter.

- Screen title

The screen title is displayed along the top portion of the screen.

- Message line

This is the next-to-the-last line on the screen. Normally, it contains a brief instruction to help you decide what to do next. Sometimes, the message line reports the successful or unsuccessful completion of a task.

- Function key labels

The boxed labels at the bottom of the screen correspond to function keys on your keyboard. The label describes the VIS command conveyed to the VIS when you press the corresponding function key. This is the primary means of giving instructions to the VIS. The commands, and, therefore, the labels, that are available at any given time vary depending on the screen being used.

"Function Keys" are described in more detail later in this chapter.

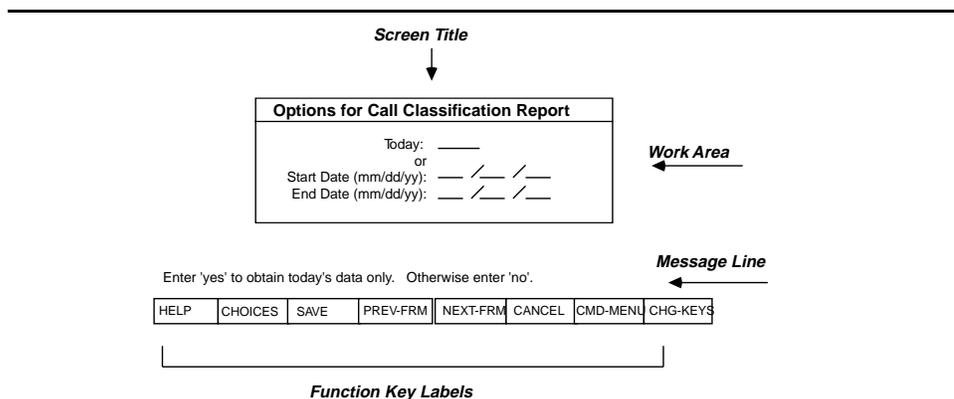


Figure 1-1. VIS Screen

Screens/Frames

Screens, also referred to as “frames,” are the medium through which you exchange information with the VIS. This may involve activities such as filling in a form or choosing an item from a menu.

There are different types of screens to accommodate these different types of activities. However, all screens have the same basic components. Screen structure, screen types, and certain “special-purpose” screens are described in the following sections.

Screen Components

Since the work area may contain more than one screen at the same time, each screen is boxed so that it is clear what information the screen contains.

Each screen has a unique name, which appears at the top of the box. The screen name describes the kind of information contained within the screen, or the kind of activity you may accomplish using the screen. In this book, screen names are shown with the first letter of each word capitalized, followed by the word “screen.” Sample screen names include Voice System Administration, System Reports, and Assign Service to Called Number.

There is always at least one screen in the work area. At any given time, only one of the screens in the work area is designated the active screen. It is usually the most recently opened screen.

Both monochrome and color monitors are supported. On monochrome monitors, the screen name and the box around the active screen are brighter than the name and box of other screens. With color monitors, you can specify that the active screen be one color while any other inactive screens are another color.

The area within the screen box is reserved for the information being exchanged between you and the VIS, which varies from screen to screen.

There is a scroll bar that indicates whether there is additional text in the screen to be displayed. Located on the right side of the screen, the scroll bar contains (▲) and (▼) symbols. These characters indicate whether there is additional data below or above what is currently displayed in the screen. The (▼) means you can use the cursor movement keys to view information below what is presently shown on the screen. The (▲) means the cursor movement keys can be used to view information above what is currently displayed on the screen.

⇒ **NOTE:**

Use (SHIFT) (BREAK) to stop a VIS process and return to the UNIX system prompt. Never use the (RESET) key on the central processing unit (CPU) to interrupt or restart the VIS as this may damage the software and result in the loss of the work you have done in that session.

⇒ **NOTE:**

Be careful that you do not create multiple, simultaneous screens as this could severely impact performance and may ultimately lock up the system. Following is an example of what you should avoid: if you have a VIS screen displayed and you press (FRM-MGMT) to access the UNIX system prompt and then you invoke **cvis_menu** from the system prompt to display another screen and then proceed to press (FRM-MGMT) to access the system prompt again, several simultaneous layers of software are created.

Types of Screens

Screens are grouped into three types based on the kind of information they contain and the manner in which it is presented. All screens operate in a similar fashion. However, there are differences in the way you maneuver through a form compared to the way you move through a menu screen. Therefore, you may find it helpful to be acquainted with the different screen types.

The three screen types are:

- Menu
- Text
- Form

Each of these types are explained on the following pages.

Menu Screen

A menu screen contains a set of items, one of which you choose to execute an action. One example of a menu screen is the Voice System Administration screen, which contains a menu of the items used to administer the VIS (Figure 1-2). Another example of a menu screen is the System Reports screen, which contains a menu of the items used to administer call data information (Figure 1-3).

Voice System Administration Help
Use the PREVPAGE and NEXTPAGE function keys to move through this help window. Press the CANCEL function key to close this window.
The Voice System Administration menu lists the six primary types of administration.
OPTIONS
<u>Configuration Management</u> - display and administers host sessions and voice channels, diagnose cards or bus, display system status, stop and start the system.

HELP	PREVPAGE	NEXTPAGE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	----------	----------	----------	----------	--------	----------	----------

Figure 1-2. Menu Screen — Voice System Administration Screen

System Reports
Call Classification Report
Call Data Detail Report
Call Data Summary Report
Message Log Report
Traffic Report

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 1-3. Menu Screen — System Reports Screen

To choose an item, highlight it, then press **(ENTER)**. Typically, there are two ways to highlight an item:

1. Use your keyboard cursor movement keys to move the highlight bar.
 - Press the **(▼)** key to move the highlight bar down
 - Press the **(▲)** key to move the highlight bar up
2. Type the first character of the item.

As soon as you type a single letter, the first item beginning with that letter is highlighted. If more than one item begins with the same letter, then type enough letters to identify the desired item.

For example, in Figure 1-2, if you want to highlight Switch Interfaces, typing an **s** would be sufficient. The cursor will move within the highlight bar to indicate how many letters have been typed in order to highlight the given item. By typing a **y** from this point, the next item highlighted would be System Monitor.

Using Figure 1-3 as an example, if you type **c**, Call Classification Report will be highlighted. Now from this point, if you typed in **all d**, the next component to be highlighted would be Call Data Detail Report.

Other aspects of this feature worth noting are:

- This feature is not case-sensitive; that is, an “A” in a menu is the same as an “a”, so typing an **A** is the same as typing an **a**.
- If you type a letter for which there is no eligible item, the system sounds a “beep” and the cursor does not move.
- If you type a legal character and want to “back up” to type the first letter of a different item instead of the second letter of the same item, then you must press **(BACK SPACE)** a sufficient number of times to return the cursor to the beginning of the line.
- Menu screens have a “rollover” feature. When the cursor reaches the last item of the menu, press **(▼)** to return to the first menu item. If the cursor is located at the first menu item, press **(▲)** to move to the last menu item.

Text Screen

Text screens provide you with information or instructions too long to fit in the message line near the bottom of the screen.

Figure 1-4 shows an example of the Options for Voice Equipment Display text screen.

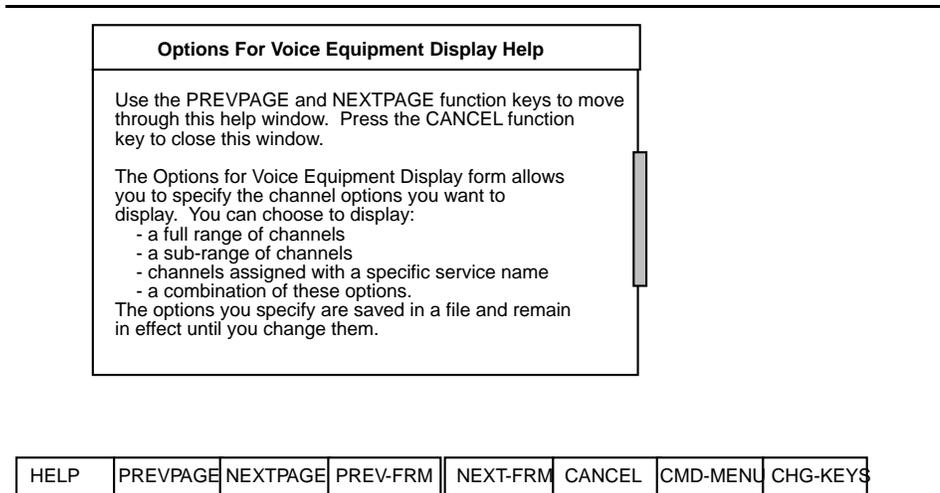


Figure 1-4. Text Screen — Help Screen

Form Screen

Form screens are used widely throughout the VIS. They are similar to paper forms and provide assorted information, all related to a single subject. The typical form contains prompts that describe the information you must provide, and “blanks” in which to type this information.

Figure 1-5 shows the Options for Call Data Detail Report screen used to tailor the call data report.

Options for Call Data Detail Report	
Number of Call Records:	<u>1-100</u>
Date (mm/dd/yy):	<u>04/19/92</u>
Service:	<u>spadm</u>
Include Call Data Fields?	<u>no</u>

Enter a number or range of records to be searched. Otherwise enter 'all'

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 1-5. Form Screen — Options for Call Data Detail Report Screen

Online Help

Most screens have a companion text screen available that contains helpful reference information. Figure 1-6 shows the help screen associated with the Voice System Administration screen.

VIS help screens are not designed to be a substitute for this user document. They briefly describe each of your options for a given screen. They are intended to “jog” your memory from any point within the VIS as you decide what to do next.

Voice System Administration Help
Use the PREVPAGE and NEXTPAGE function keys to move through this help window. Press the CANCEL function key to close this window.
The Voice System Administration menu lists the six primary types of administration.
OPTIONS
<u>Configuration Management</u> - display and administers host sessions and voice channels, diagnose cards or bus, display system status, stop and start the system.

HELP	PREVPAGE	NEXTPAGE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	----------	----------	----------	----------	--------	----------	----------

Figure 1-6. Online Help Screen

Moving within Screens

There are several ways to maneuver through the various VIS screens. The following information reviews the different ways to move about in the screens.

Cursor Movement

Table 1-1 lists the most commonly used keys and key combinations used to maneuver within a screen. They are referred to throughout this document as the cursor movement keys.

There generally is more than one way to accomplish the same cursor movement. In this case, all of the alternatives are shown, separated by commas.

Table 1-1. Common Keys and Key Combinations

Type of Movement	Keys
Next line in menu, list or text	▼
Previous line in menu, list or text	▲
Slide menu, list or text down one "screenful"	PgDn
Slide menu, list or text up one screen length	PgUp
Move to beginning of menu, text, or list	HOME
Move to end of menu, text, or list	END
Next blank in a form	▼, TAB or ENTER
Previous blank in a form	▲ or (SHIFT) and TAB
"Wrap" from first blank to last blank in a menu or form	▲
"Wrap" from last blank to first blank in a menu or form	▼
Next character within a form blank	▶
Previous character within a form blank	◀
Delete character to the left of the cursor	BACK SPACE
Delete character on which cursor is placed	DELETE

Menu Selection Alternatives

1. Highlight desired menu item, using one of the following:
 - Use cursor movement keys.
 - Type the first letters of the item. The item which matches what you have typed is highlighted, or the VIS sounds a beep if no match is found.
2. Press (ENTER).

"Menu Screen" is described earlier in this chapter.

Form Fill-In Alternatives

- Alternative where a fixed number of choices are available:

Begin to type the entry. As soon as enough characters have been typed to uniquely identify what entry is desired, the remainder of the entry is automatically filled in without you having to type the rest. As soon as enough characters have been typed to identify the entry as invalid, the VIS sounds a "beep" and removes the invalid characters.

Figure 1-7 shows an example of the Options for Call Data Summary Report screen.

Options for Call Data Summary Report	
Day :	<u>Monday</u>
Hours :	<u>9-16</u>
Service :	<u>spadm</u>
Include Call Data Fields?	<u>no</u>

Enter a day of the week.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 1-7. Options for Call Data Summary Report Screen

Looking at the "Day" field, assume the valid entries are Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday. The VIS will make a match with the minimum number of characters entered. For example, when you type **M**, the VIS fills in the entire word "Monday" because there is only one valid entry that begins with "M." However, if you type **S**, the VIS will wait before filling in the day of the week because there are two valid entries that begin with "S" (Saturday and Sunday). At this point, if you type an **a**, then the VIS will fill in the word "Saturday." If you type a **u**, the VIS will fill in the word "Sunday." If you begin to type an invalid character, the VIS sounds a beep. This technique is not case-sensitive. In other words, typing either **M** or **m** in the above example results in the word "Monday" being filled in by the VIS. This operation works only on valid choices.

Move the cursor to another blank, or close the screen to complete the entry.

- Alternative where a certain number of choices are available:

Move to the desired blank and type the entry. Move the cursor to another blank, or close the screen to complete the entry. To move to the next blank within a form, press either **▼**, **(TAB)**, or **(ENTER)**. To move to the previous blank in a form, press **▲** or **(SHIFT) (TAB)**.

While in a given form blank, the entry can be edited. Press **▶** to move to the next character in a form blank. Press **◀** to move the cursor to the previous character within a blank.

To remove characters from an entry, press **(BACK SPACE)** to delete the character to the left of the cursor, or press **(DELETE)** to remove the character on which the cursor is placed.

To insert characters in the middle of an entry, press **◀** or **▶** as necessary to move to the desired location in the blank, then type the new characters.

To replace an entry, press **◀** as necessary to move the cursor to the left end of the blank, then retype the entry (existing characters will disappear).

To delete an entry, press **◀** as necessary to move the cursor to the left end of the blank, then press **(SPACEBAR)**.

- CHOICES screen selections:

Press **(CHOICES)** for the VIS assistance with item selection ("Function Keys" are described later in this chapter). A menu screen opens, showing the choices available. Select an option as you would in a standard menu screen. Move the cursor to another blank, or close the screen to complete the entry.

The content of the CHOICES menu varies depending on the situation. Several different CHOICES cases exist.

Sometimes the CHOICES menu contains all valid choices, such as when selecting an option to add to one of the many System Reports components. Other times, when there are many valid choices, the CHOICES menu will contain a subset of the most commonly used choices. Still other times, there may be virtually unlimited choices, such as when naming a phrase to be spoken. In this case, there will be no CHOICES menu or the CHOICES menu contains all known choices.

Function Keys

We have seen how screens are used to display and accept information a menu of application components or available VIS steps, a set of text to help you through a specific action, a form to be filled in, etc. Function keys are the means by which you command the VIS to perform some function within the active screen.

Function keys typically are in a row across the top of your keyboard. Some keyboards arrange them in two columns down the left-hand side. Your keyboard has anywhere from eight to twelve function keys. The VIS uses the first eight keys, labeled **F1** through **F8**.

The bottom line of every VIS screen has boxes showing the commands that are at your disposal at any given moment. Figure 1-8 shows the System Control screen. At this point, you may press a function key to command the VIS to call up **HELP**, **PREV-FRM** to view the previous frame, **NEXT-FRM** to examine the next frame, **CANCEL** out of this particular screen, **CMD-MENU** to look at the command menu, to **CHG-KEYS** that is, to change to a different set of available commands.

System Control
Diagnose Equipment
Renumber Voice Channels
Report Voice System Status
Shutdown System
Start Voice System
Stop Voice System

Highlight an item and press Enter.

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 1-8. Standard Function Keys — System Control Screen

The boxes are grouped to match the groupings on your keyboard. This helps to indicate the function key you must press to issue the instruction shown within the box. For example, in Figure 1-8 you would press **F1** to instruct the VIS to bring up the Help screen for the System Control screen.

Because the available commands vary from screen to screen, commands are always referred to by their function key labels rather than by their numbers. Function key labels are always capitalized, as they are on the screen, and appear in boxes (for example, **CANCEL**, **CHG-KEYS**).

Referring again to Figure 1-8 notice that the label for **F2** is blank. This means that no command is issued if you press the **F2** function key at this point. The VIS sounds a beep and the message line either informs you that you have pressed an undefined function key or continues to show the last message.

As you gain experience with the VIS, you will notice some important aspects of function key commands:

- The function key commands displayed on the screen at any given time apply only to the active screen.
- Most screens use more commands than there are function keys. Therefore they use two sets of function keys.

The set of standard function keys includes commands commonly used by virtually all screens (Figure 1-8).

The set of alternate function keys includes commands that are unique to that screen (and perhaps to a few other screens) (Figure 1-9).

- Function key **F8** (labeled **CHG-KEYS**) acts as a “toggle” to switch the displayed function keys from one set of commands to the other.

System Control
Diagnose Equipment
Renumber Voice Channels
Report Voice System Status
Shutdown System
Start Voice System
Stop Voice System

Highlight an item and press Enter.

						FRM-MGMT	CHG-KEYS
--	--	--	--	--	--	----------	----------

Figure 1-9. Alternate Function Keys — System Control Screen

Figure 1-8 and Figure 1-9 show the same System Control screen under identical conditions, except that **CHG-KEYS** has been pressed to switch between the standard (Figure 1-8) and alternate (Figure 1-9) command sets. Pressing **F4** in Figure 1-8 orders the VIS to move to the previous frame. Pressing **F4** in Figure 1-9 sounds a beep but does nothing else because that key is empty.

Standard Function Keys

Table 1-2 shows the standard set of function keys. The standard commands for **F2** and **F3** vary depending on the type of screen. Also note that a given screen may not require every command from the standard set. Unused commands have blank screen labels.

Table 1-2. Standard Function Keys

Function Key	Type of Screen		
	Menu	Form	Text
F1	HELP	HELP	HELP
F2		CHOICES	PREV-PAGE
F3		SAVE	NEXT-PAGE
F4	PREV-FRM	PREV-FRM	PREV-FRM
F5	NEXT-FRM	NEXT-FRM	NEXT-FRM
F6	CANCEL	CANCEL	CANCEL
F7	CMD-MENU	CMD-MENU	CMD-MENU
F8	CHG-KEYS	CHG-KEYS	CHG-KEYS

In the next few pages, the standard set of commands is described. All screen-specific commands are discussed in the detailed descriptions of individual screens.

In the case of **F2** and **F3** where the standard command varies by screen type, each standard is shown, with its screen type in parentheses.

F2 HELP

HELP displays screen-specific information to assist you with the active screen.

Press **HELP** to display a text screen containing a brief description of the active screen and the commands and operations available within the screen.

F2 (menu screen) Not used.

F2 CHOICES (form screen)

CHOICES opens a menu screen containing choices for the current blank to fill if there is a finite set of choices for a particular blank.

Move the cursor to the blank you wish to fill in, then press **CHOICES**. The CHOICES screen opens, containing the menu for that blank.

F2 PREVPAGE (text screen)

PREVPAGE scrolls back through (towards the beginning of) text that is too long to fit within the screen.

Press **PREVPAGE** in a text screen to scroll almost a full “page” back in a text screen. Page length varies and is equal to the length of the current screen. The amount of text scrolled is two lines less than one full page. This allows two lines from the previous page to remain to help you keep your place within the text. Pressing **PREVPAGE** is equivalent to pressing the **PgUp** key in a text screen.

F3 (menu screen) Not used.

F3 SAVE (form screen)

SAVE preserves all changes made in the screen.

Press **SAVE** to order the VIS to perform whatever internal operations are necessary to act on the information in the screen.

F3 NEXTPAGE (text screen)

NEXTPAGE scrolls forward through (toward the end of) text which is too long to fit within the screen.

Press **NEXTPAGE** to scroll almost a full “page” forward in a text screen. Page length varies and is equal to the length of the current screen. The amount of text that is scrolled is two lines less than one full page. This allows two lines from the previous page to display to help you keep your place within the text. This is equivalent to pressing the **PgDn** key in a text screen.

F4 PREV-FRM

PREV-FRM moves the cursor back to the previous frame.

Press **PREV-FRM** to move the cursor to the previous screen. If additional screens are open, this function key will continue moving the cursor to the other screens in a loop.

F5 NEXT-FRM

NEXT-FRM moves the cursor forward to the next frame.

Press **NEXT-FRM** to move the cursor to the next screen. If additional screens are open, this function key will continue moving the cursor to the other screens in a loop.

F6 CANCEL

Press **CANCEL** to close the active screen and cancel any additions, deletions or changes made. The screen which called the just-closed screen becomes the active screen.

⇒ NOTE:

If there is an activity in progress, such as making a backup copy of an application on a floppy disk, pressing **CANCEL** does not interrupt the operation.

F7 CMD-MENU

Press **CMD-MENU** to display a menu screen featuring a variety of procedures relating to the VIS, including Free Host Sessions, Login Host Sessions, Logout Host Sessions, Show Host Session Screens, System Monitor, Terminal Emulator, Trace Service, and Exit. This screen and its procedures can be executed from most screens in the VIS. Refer to "Command Menu Procedures" in this chapter for details on each command menu operation.

F8 CHG-KEYS

CHG-KEYS switches the function key display from the standard to the screen-specific set of commands, or vice versa.

Function Key Summary

The following is a summary of information provided by function keys:

- Function keys send commands to the VIS.
- Eight reverse video boxes on the bottom line of the screen correspond to eight function keys on the keyboard.
- The label in the box is the command invoked when you press the corresponding function key.
- There is a set of standard function keys which provides functions common to each type of screen and an alternate set of keys to work with the details of a specific screen.
- Press **CHG-KEYS** to toggle between the standard and alternate function keys.
- The VIS sounds a beep and takes no further action if you press a function key corresponding to an empty box.

Frame Management

The VIS gives you the opportunity to manipulate various screen features through the Frame Management menu screen (Figure 1-10).

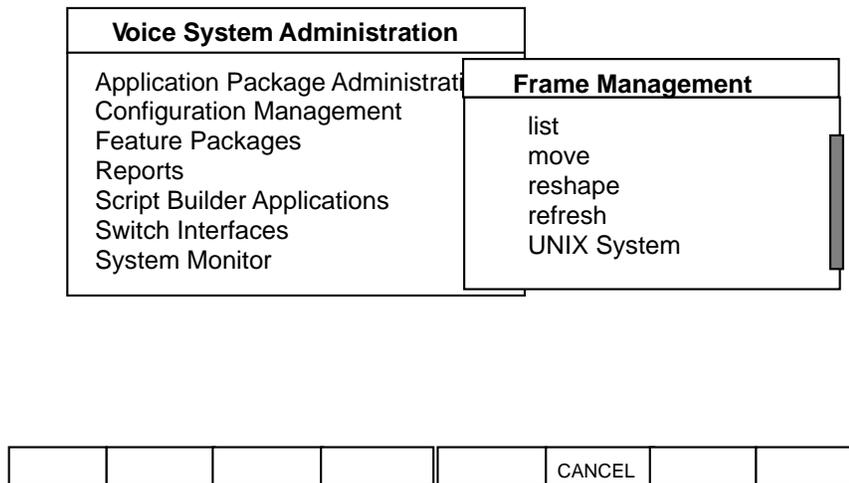


Figure 1-10. Frame Management Screen

Press **(CHG-KEYS)** to display the alternate set of function keys. Press **(FRM-MGMT)** to call up a five-item menu screen that enables you to perform the following activities:

- List open screens
- Move active screen
- Reshape screen
- Refresh screen
- Return to the UNIX system prompt

List Open Screens

From the Frame Management screen, highlight list, then press **(ENTER)**. The Open Frames menu screen appears with a listing of all the currently opened screens. Press **(CANCEL)** to close the Open Frames screen and return to the previously opened screen.

Move Active Screen

Use this procedure to move the active screen to another location on the screen.

From the Frame Management screen, highlight move, then press **(ENTER)**. The previously opened screen disappears and is replaced by a four-cornered outline of the screen. Note that the cursor is blinking on the top-left corner of the screen outline. Use the cursor movement keys to position the blinking cursor where you want the screen to be moved. Press **(ENTER)** to reposition the screen.

Reshape Screen

Use this procedure to reshape the active screen.

From the Frame Management screen, highlight reshape, then press **(ENTER)**. A blinking cursor appears on the top-left corner of the screen. Use the cursor movement keys to position and resize the top-left corner. Press **(ENTER)**. Now use the cursor movement keys to position and resize the bottom-right corner, then press **(ENTER)**.

Note that reshaping of a screen is only a temporary state. Once you have closed the reshaped screen, the screen returns to its original location assigned by FACE.

Refresh Screen

Use this procedure to clear and redraw the entire screen.

From the Frame Management screen, highlight refresh, then press **(ENTER)**. Any extraneous information is cleared from the screen and the screen is redrawn.

UNIX System

Use this procedure to go to the UNIX system prompt.

From the Frame Management screen, highlight UNIX System, then press **(ENTER)** to leave Voice System Administration and return to the UNIX system prompt.



CAUTION:

*Do not invoke **cvis_mainmenu** while at the UNIX prompt. Because you are logged into the system through the menus, invoking the menus again can cause system problems.*

Command Menu Procedures

The CMD-MENU function enables you to access a variety of VIS procedures. This key appears on the standard function key set. Press **CMD-MENU** to open the Command Menu screen (Figure 1-11).

Command Menu
Free Host Sessions
Login Host Sessions
Logout Host Sessions
Show Host Session Screens
System Monitor
Terminal Emulator
Trace Service
Exit

Highlight an item and press ENTER.

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 1-11. Command Menu Screen

The Command Menu screen displays the following items:

- Free Host Sessions
- Login Host Sessions
- Logout Host Sessions
- Show Host Session Screens
- System Monitor
- Terminal Emulator
- Trace Service
- Exit

Free Host Sessions

From the Command Menu screen, highlight Free Host Sessions, then press **(ENTER)**. The Free Host Sessions screen appears (Figure 1-12).

Free Host Sessions
Sessions : _____
OR
Service : <u>flash</u>

Leave blank or enter a valid range (e.g. 0 or 0-3 or 0,1,2 or 0 1 2 or 'all')

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 1-12. Free Host Sessions Screen

Use the Free Host Session screen to free a host session or sessions, regardless of its current status. Note that the freed host sessions must be reassigned in order to be activated again.

Specify the host sessions you wish to free by either entering a host session number or by naming a particular service associated with the host session. If one field is used, the other must remain blank. The blank field denotes an unspecified value. The VIS simply ignores this field when left blank.

In the Sessions field, enter a single host session number or a range of host session numbers, separated by commas or spaces. The *all* value is also a valid choice.

If you will be entering information in the Service field, type in any service which is currently assigned to one or more host sessions. You can also press **(CHOICES)** to make a selection from a menu screen.

After completing the Free Host Sessions screen, press **(SAVE)**. The Command Output screen appears with a message stating whether or not the process was completed or if it was aborted.

Login Host Sessions

From the Command Menu screen, highlight Login Host Sessions, then press **(ENTER)**. The Login Host Sessions screen appears (Figure 1-13).

Login Host Sessions	
Sessions :	1-5
OR	
Service :	

Leave blank or enter a valid range (e.g. 0 or 0-3 or 0,1,2 or 0 1 2 or 'all')

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 1-13. Login Host Sessions Screen

Use the Login Host Sessions screen to start the login sequence on the specified host sessions, if the session is currently logged out. The host session must be logged out for this process to succeed.

Specify the host sessions you wish to login by either entering a host session number or by naming a particular service associated with the host session. If one field is used, the other must remain blank. The blank field denotes an unspecified value. The VIS simply ignores this field when left blank.

In the Sessions field, enter a single host session number or a range of host session numbers, separated by commas or spaces. The *all* value is also a valid choice.

If you will be entering information in the Service field, type in any service which is currently assigned to one or more host sessions. You can also press **(CHOICES)** to make a selection from a menu screen.

After completing the Login Host Sessions screen, press **(SAVE)**. The Command Output text screen appears with a message stating whether or not the process was completed or if it was aborted.

Logout Host Sessions

From the Command Menu screen, highlight Logout Host Sessions, then press **(ENTER)**. The Logout Host Sessions screen appears (Figure 1-14).

Logout Host Sessions	
Sessions :	_____
OR	
Service :	<u>River_bank</u>

Leave blank or enter a valid range (e.g. 0 or 0-3 or 0,1,2 or 0 1 2 or 'all')

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 1-14. Logout Host Sessions Screen

Use the Logout Host Sessions screen to start the logout sequence on the specified host sessions. If the host session specified has already been logged off or was never logged in, this process will fail.

Specify the host sessions you wish to logout by either entering a host session number or by naming a particular service associated with the host session. If one field is used, the other must remain blank. The blank field denotes an unspecified value. The VIS simply ignores this field when left blank.

In the Sessions field, enter a single host session number or a range of host session numbers, separated by commas or spaces. The *all* value is also a valid choice.

If you will be entering information in the Service field, type in any service which is currently assigned to one or more host sessions. You can also press **(CHOICES)** to make a selection from a menu screen.

After completing the Logout Host Sessions screen, press **(SAVE)**. The Command Output text screen appears with a message stating whether or not the process was completed or if it was aborted.

Show Host Session Screens

From the Command Menu screen, highlight Show Host Session Screens, then press **(ENTER)**. The Show Host Session Screens screen appears (Figure 1-15).

Show Host Sessions Screens
Sessions : <u> 5 </u>

Enter a session number or range (as 1-3 or 1,2,3 or 1 2 3 or 1,3-5 or "all")

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 1-15. Show Host Session Screens

Use the Show Host Session Screens screen to display the current screen on the specified host sessions.

In the Sessions field, you are able to specify the host session screens you wish to display. To display one or more host session screens, enter a single session number or a range of session numbers, separated by commas or spaces. To display all host session screens in the VIS, type **all** in this field.

After completing the Show Host Session Screens screen, press **(SAVE)** to close the screen and display screens for the specified host session screens. If more than one host session is specified, screens are displayed one at a time. Press **(ENTER)** to advance to the next screen. If all host sessions are specified, press **(CONTROL) - (Y)** to advance to the next host session.

System Monitor

Refer to Chapter 6, "System Monitor", for a complete description of the system monitor feature.

Terminal Emulator

The VIS uses the 3270 terminal emulation software 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. Note that 3270 Terminal Emulation can be performed using the Terminal Emulation Utilities screen (recommended) or from a command line operation of te3270. Refer to *CONVERANT VIS Host Interface*, 585-350-815, for information on the command line operation of te3270.

⇒ NOTE:

Before you may invoke the Terminal Emulator, you must install the PC/XL synchronous card on your system. In addition you must install and configure the 3270 software on your system. Refer to *CONVERSANT VIS Host Interface*, 585-350-815, for additional information on installing host interface hardware and software. Refer to Chapter 3, “Configuration Management”, for information on using the Host Link screen to configure the 3270 host synchronous card.

Starting Terminal Emulation

From the Command Menu screen, highlight Terminal Emulator and press (ENTER). The Terminal Emulator screen appears (Figure 1-16).

Terminal Emulator
Host Session : <u> 5 </u>

Enter a valid session number or 'all'.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 1-16. Terminal Emulator Screen

In the Host Session field of the Terminal Emulator screen, enter a host session number or the word **all**. Once the Terminal Emulator screen is complete, press (SAVE).

⚠ CAUTION:

After the VIS hardware or software is reset (for example, by turning on the computer), the synchronous communications hardware and software will take a few additional minutes to reset. If you press (SAVE) to invoke the Terminal Emulator before it has “settled,” a blank screen appears. No harm has been done; however, the 3270 screen appears momentarily. To avoid confusion, wait five minutes after resetting the system before invoking the Terminal Emulator.

The system asks you whether you wish to continue terminal emulation. To proceed with terminal emulation, press (ENTER). If the host is active, the current screen is displayed. If the host is inactive, the last host screen is displayed.

Press any key to begin terminal emulation.

Terminal Emulation Utilities Screen

At any time while inside the 3270 Terminal Emulation program, you can shift to the Terminal Emulation Utilities screen to perform other tasks without breaking your communications link with the host. To display the Terminal Emulation Utilities screen, press (ESC) twice. The Terminal Emulation Utilities screen appears (Figure 1-17).

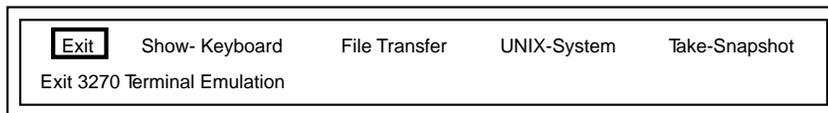


Figure 1-17. Terminal Emulation Utilities Screen

Show Keyboard

In emulation mode, your keyboard is “mapped” to send 3270 keyboard codes to the host according to a configuration table set up during installation.

The Show Keyboard option is used to display the mapping from your keyboard to the 3270 keyboard. To display this table while you are working in emulation mode in contact with the host computer, press (ESC) twice and then **S** (upper or lowercase) to “show” the keyboard. Alternatively, press (ESC) twice from emulation mode to display the Terminal Emulation Utilities screen, the type **S** (upper or lowercase), or use the (SPACEBAR), (▼), or (▲) keys to highlight the Keyboard Mapping, then press (ENTER). The Keyboard Mapping screen appears, Figure 1-18 shows an example of a keyboard mapping display.

3270 Functions							
Attn	CTRL-A	Fast_Lf	CTRL-G	PF1	F1	PF13	Shift-F1
Backspace	BackSpace	Fast_Rt	CTRL-J	PF2	F2	PF14	ESC_4
Clear	CTRL-C	FieldMrk	ESC_f	PF3	F3	PF15	Shift-F3
Crsr_Dn	Dn-Arrow	Home	Home	PF4	F4	PF16	Shift-F4
Crsr_Lf	Lf-Arrow	Ident	ESC_i	PF5	F5	PF17	Shift-F5
Crsr_Rt	Rt-Arrow	Insert	Insert	PF6	F6	PF18	Shift-F6
Crsr_Up	Up-Arrow	New_Line	End	PF7	F7	PF19	Shift-F7
CrsrSel	ESC-r	PagePrt	CTRL-P	PF8	F8	PF20	Shift-F8
Delete	Delete	PrintScr	ESC_p	PF9	F9	PF21	Shift-F9
Dev_Cncl	ESC-e	Reset	CTRL-R	PF10	F10	PF22	Shift-F10
Dup	ESC-d	Sys_Req	ESC-s	PF11	F11	PF23	Shift-F11
Enter	Enter	Tab_Back	Shift-Tab	PF12	F12	PF24	Shift-F12
EraseEof	CTRL-E	PA1	ESC_1				
EraseImp	CTRL-F	PA2	ESC_2				
Exit	CTRL-X	PA3	ESC_3				

Local Functions							
Cmd_Key	ESC_ESC	Page_Up	Pg_Up	ScrollDn	CTRL-N	StatusLn	CTRL-T
Jump	CTRL-y	Redraw	CRTL-L	ScrollUp	CTRL-U	FileXfer	CTRL-V
PageDown	Pg_Dn	Savescrn	ESC_S	ShowKbd	CTRL-K	Overlay	CTRL-B

Figure 1-18. Example of Keyboard Mapping Display

The key name shown on the left-hand side of each column-pair specifies the actual keys that must be pressed to emulate the respective 3270 key that is listed on the right-hand side of the same column-pair. The key names shown (highlighted) on the right-hand side of each column-pair might be different on your terminal.

In the example keyboard mapping display, the word “Clear” on the left-hand side of the column represents the 3270 terminal key (CLEAR), while the display on the right-hand side of the column tells you that you should press (CTRL) and **c** on your terminal to emulate the 3270 (CLEAR) key. Press (ESC) twice to exit Keyboard Mapping and return to the Terminal Emulation Utilities screen.

File Transfer

The File Transfer option allows you to transfer files interactively or directly to and from UNIX. File transfer is performed either interactively using the File Transfer screen in the File Transfer System or directly from the UNIX command line, shell script, or a program using the system call. Refer to *CONVERSANT VIS Host Interface*, 585-350-815, for instructions on performing file transfer.

UNIX System

While you are working in emulation mode in contact with the host computer, you may temporarily enter the UNIX system environment, press **(ESC)** twice then **U** (upper or lowercase). Alternatively, press **(ESC)** twice from emulation mode to display the Terminal Emulation Utilities screen, then type **U** (upper or lowercase), or either the **(SPACEBAR)** or the **(▲)** or **(▼)** keys to highlight UNIX System, than press **(ENTER)**.

Type **(CONTROL) - (D)** to exit the UNIX system and return to terminal emulation.



CAUTION:

*Do not invoke **cvvis_mainmenu** while at the UNIX system prompt. Because you are logged into the system through the menus, invoking the menus again can cause problems.*

Take-Snapshot

The Take-Snapshot option is used to capture “snapshots” of the currently displayed host screen. To take a snapshot while you are working in emulation mode in contact with the host computer, press **(ESC)** twice and the **T** (upper or lowercase). Alternatively, press the **(ESC)** key twice from emulation mode to display the display the Terminal Emulation Utilities screen, then type **T** (upper or lowercase), or use the **(SPACEBAR)** or the **(▲)** or **(▼)** key to highlight Take-Snapshot, then press **(ENTER)**.

Exit Terminal Emulation

When you are finished taking snapshots, log off the host, then exit terminal emulation either vis the command menu (by pressing **(ESC)** key twice to enter the command menu, the **e** to exit) or directly by typing **(CONTROL)** then **x**. This returns you to the Terminal Emulator screen.

Exiting terminal emulation does not automatically log you off the host. In fact, you can exit TE and restart it later (by pressing **(SAVE)**), and find yourself right where you left the host application when you exited.

Trace Service

From the Command Menu screen, highlight Trace Service, then press **(ENTER)**. The Trace Service screen appears (Figure 1-19).

Trace Service
Channel or Session : <u> all </u>

Enter a channel or session number (or all) to trace.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 1-19. Trace Service Screen

Use this screen to specify the channel or session number you wish to trace. It is important to note that tracing channels takes precedence over tracing host sessions. This means the VIS will look for active channels to trace, before looking for active host sessions to trace.

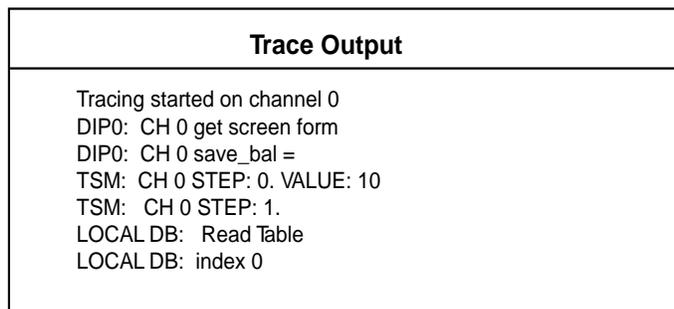
Note that space on the root partition often becomes full, so you should occasionally remove old files from **/vs/trans/hostdata** directory.

Enter a single channel or session number. The all value is also a valid choice. After completing the Trace Service screen, press **(SAVE)** to initiate the trace process.

Trace Output

Once the trace process is initiated, the Trace Output screen appears (Figure 1-20). This screen displays trace output information from the VIS.

There may be some instances when questions arise about what exactly is traced (for example, if a script is assigned to voice channel 2, but the script uses host session 7 for host communications). The voice channel and any host sessions the script uses, regardless of their host session number, are traced. In certain cases, it is possible to trace a specific host session.



HELP	PREVPAGE	NEXTPAGE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	----------	----------	----------	----------	--------	----------	----------

Figure 1-20. Trace Output Screen

Trace output data automatically scrolls on the screen. Press **PAUSE** to stop the information from scrolling. While in the pause mode, use **PREVPAGE** and **NEXTPAGE** to maneuver within the display. Press **RESUME** to continue scrolling through the trace output. Once **PAUSE** is pressed, the **RESUME** key takes its place on the screen.

Trace Print Option

To print the trace output, press **PRINT** from the Trace Service screen. Note that, at most, the last 250 lines of output will be printed.

Make sure the VIS has all the proper printer connections. Refer to Appendix A, "FACE Features", for additional information on how to establish printer operations.

Exit

From the Command Menu screen, highlight Exit and press **ENTER**. This immediately takes you out of the current screen and returns you to the environment where you invoked Command Menu.

Getting Started

After you have logged into the VIS (using the login created during installation), the CONVERSANT VIS Version 4.0 screen appears on your screen (Figure 1-21).

CONVERSANT VIS Version 4.0
AT&T FACE Voice System Administration Exit

Select an item and press ENTER

HELP			PREV-FRM	NEXT-FRM			CHG-KEYS
------	--	--	----------	----------	--	--	----------

Figure 1-21. CONVERSANT VIS Main Menu Screen

When you log in, if you do not first see the CONVERSANT Version 4.0 screen, type `cvis_mainmenu`, then press `ENTER`.

From the CONVERSANT VIS Version 4.0 screen, you can initiate two programs. Selecting AT&T FACE allows you to set up a variety of generic software operations including backup, printer operations, mail set-up, and peripheral setup. Refer to Appendix A, "FACE Features", for additional information on FACE.

Selecting Voice System Administration brings up the program that allows you to begin your session for administering both voice and non-voice related aspects of the system. Exit takes you back to the UNIX system prompt.

Using the cursor movement keys, select Voice System Administration and press `ENTER` to open the Voice System Administration screen (Figure 1-2). From this point, you can begin work with the VIS.

Application Administration Overview

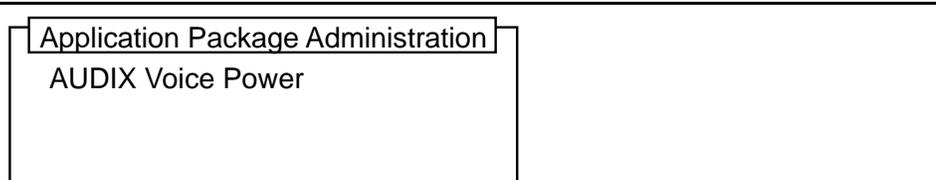
The application administration component of the CONVERSANT Voice Information System (VIS) provides access to the applications currently available on your system and helps you to manage and administer them. If the AUDIX Voice Power R2.1.1 application package is installed on the system, the application administration component enables you to access and administer AUDIX Voice Power.

In addition, if the Script Builder software package is installed on your VIS, you can add new applications and change existing applications.

The application administration component provides access to other functions as well including removing an application, verifying an application, installing an application, backing up an application, and restoring an application.

AUDIX Voice Power Application Administration

From the CONVERSANT VIS VERSION 4.0 screen, highlight Voice System Administration and press **(ENTER)**. From the Voice System Administration screen, highlight Application Package Administration and press **(ENTER)** to open the Application Package Administration screen (Figure 2-1).

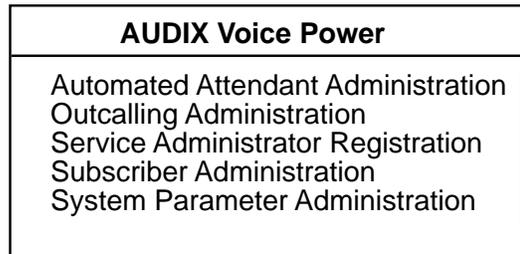


Select an application & press the Enter key.



Figure 2-1. Application Package Administration Screen

From the Application Package Administration screen, highlight AUDIX Voice Power and press **(ENTER)** to open the AUDIX Voice Power screen (Figure 2-2).



Highlight menu choice using arrow keys, then press Enter key



Figure 2-2. AUDIX Voice Power Screen

For information on administering AUDIX Voice Power, refer to Chapter 3, "Administering AUDIX Voice Power," of *AUDIX Voice Power R2.1.1 System Manager's Guide*, 585-310-520.

Starting Script Builder Application Administration

From the Voice System Administration screen, highlight Script Builder Applications and press **(ENTER)** to open the Script Builder Applications screen (Figure 2-3).

The Script Builder Applications screen contains an alphabetical listing of all the applications that exist. At the top of the list is the special entry **ADD NEW APPLICATION**, which is used to add application names to the list. At times, there may be no applications on your system. In this case, **ADD NEW APPLICATION** will be the only entry in the Script Builder Applications screen.

Script Builder Applications
> ADD NEW APPLICATION
Accounts
loans_only
River_Bank
change1
change2
test_all

Select an application & press a function key, or **ADD NEW APPLICATION** & <Enter>.

	REMOVE		INSTALL	BACKUP	RESTORE	FRM-MGMT	CHG-KEYS
--	--------	--	---------	--------	---------	----------	----------

Figure 2-3. Script Builder Applications Screens

Adding New Applications

To add additional application names to the existing application listing while in the Script Builder Applications screen, highlight ADD NEW APPLICATION and press **ENTER**. The New Application form screen opens. Type the new application name. New applications may be added as indicated on the message prompt.

When creating names for the various applications, use the following guidelines:

- The name must be from 1 to 11 characters in length
- Valid characters include letters (A–Z and a–z), numbers (0–9), and the underscore character (**_**)
- The first character of the application name must be a letter (A–Z and a–z). It cannot be an underscore (**_**) or a digit.
- Names are case-sensitive; that is, ABC is not the same as Abc or abc.
- *Do not use* any special characters such as the question mark (?), asterisk (*), and ampersand (&) in your application names as these characters have special meaning to the UNIX operating system and may be misinterpreted when used in an application name. Results may be unpredictable or undesirable.

For example, if you use the ampersand (&) in the name, the keyboard and/or display can lock up so that you cannot interact with the VIS. Less drastically, if you include a period (.) in the name, you can build the application, but you may have problems later when you try to put the application in service.

Press **SAVE** to insert the new application list in alphabetical order. After this insertion, the added application is highlighted. If you do not wish to add a new application name, press **CANCEL** to return to the Script Builder Applications screen.

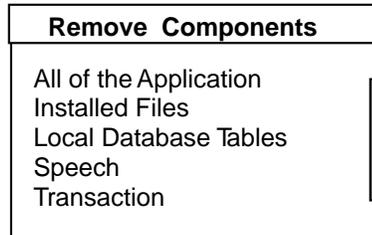


WARNING:

*If, for some reason, you wish to restart the VIS at this point, do not press **RESET** on your central processing unit (CPU) as damage to your application may result. Instead, press **SHIFT** **BREAK** to return to the UNIX system prompt.*

Removing an Application

To remove an application from the Script Builder Applications screen, highlight the application to be removed and press **CHG-KEYS**. Press **REMOVE**. The Remove Components screen opens (Figure 2-4).



Highlight an item and press Enter.

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 2-4. Remove Component Screen

If the application to be removed is currently assigned to voice channels or host sessions, the REMOVE operation is aborted. You must “unassign” this application before proceeding with this function. Refer to Chapter 3, “Configuration Management”, for information on unassigning service to voice channels and host sessions.

If the application currently is not assigned to voice channels to host sessions, then the Remove Components screen opens. This screen allows you to remove all or just a portion of the application and includes the following items: All of the Application, Installed Files, Local Database Tables, Speech, and Transaction. You can remove a particular component by selecting that item or remove all components by selecting All of the Application.

If you wish to remove the entire application including installed files, database tables, speech, and transactions, highlight All of the Application and press **ENTER**. The system takes you through a series of steps removing one component at a time. The components are removed in the order given in the menu: Installed Files, Local Database Tables, Speech, and Transaction. Even if the application does not have every component (for example, it has no Local Database Tables, or does not have its own speech), you can ask to remove All of the Application.

If the application does not have a particular component, you will receive an information screen.

The first confirmation message asks if you wish to remove the installed portion of the application. Type **y** to remove or **n** to retain the installed files. The system does not allow you to remove database files or speech unless you have removed the installed portion of an application.

The system looks at the Local Database Tables next. If Local Database tables exist for this application, the Remove Local Database Tables screen opens. The menu includes All Local Database Tables and a list of individual tables. These are the tables owned by the application highlighted in the Script Builder Applications screen. It is important to remember that these tables can also be owned by other applications as well.

⇒ NOTE:

Remote ORACLE tables cannot be removed through the Remove Components screen. Consequently, if you select All Local Database Tables in the Remove Components screen, you will remove only the Local Database Tables data. Remote ORACLE database tables can be removed only through Script Builder on the remote machine or by using ORACLE administrative tools on the remote machine (or, if the remote machine is a VIS, by using the Remove Components screen on that machine). Refer to the *ORACLE RDBMS Database Administrator's Guide* for information on removing remote ORACLE Database Tables.

⇒ NOTE:

When you have previously restored the Local Database Tables but not the transaction portion of an application, the restored database tables may not be removed through the Remove Components screen. The transaction portion of the application defines the link between the previously restored database tables and the application name and must be available in order for the tables to be removed through the Remove Components screen. When only the Local Database Tables portion of the application has been restored, the database tables may be removed with SQL*Plus. The restored database tables may also be removed by defining a dummy application, making the tables accessible to the dummy application, and then removing the restored tables through the Remove Components screen.

A Confirmation screen prompts you to continue the remove procedure by typing **y** or to cancel the remove operations by typing **n**. If you cancel the procedure, the table remains as is. If you type **y**, the confirmation screen includes a list of the first five applications sharing the Local Database Table. If All Local Database Tables was selected for removal, a confirmation message appears for each tables listed in the menu.

The system checks to see if the application has its own speech. If the application has its own speech, a message indicates the first five applications which share the same speech. At this time you may choose to continue the remove procedure by typing **y**. The list file and the associated speech are removed. Type **n** to abort the process. If you abort the process, speech is not removed.

Similarly, the system checks for a transaction. If one exists, a confirmation message appears. You may choose to continue with the removal of the transaction or to keep the transaction by typing **n**.

You may remove part of the application, such as speech only, by selecting Speech and pressing **ENTER** in the Remove Components screen. You must uninstall the application first by highlighting Installed Files.

The system checks to see if the application has its own speech. If so, a message indicates the first five applications that share the same speech. At this time, you may type **y** to proceed with the removal or **n** to abort the process.

The Transaction is removed in the same manner.

After all components of an application are removed, the application name is removed from the list and the highlighting on the Script Builder Applications

Installing an Application

Application installation is a two-step process. The VIS first invokes the TSM script assembler for the specific application name. Next, the files are moved to the appropriate directories.

Press **(INSTALL)** to install your application. A “working” message appears on the screen, notifying you that the installation processes have begun. Once these steps have been completed, the following information appears within a text screen:

1. The TSM script assembler is started.

```
PASS 1 : Invoking the TSM script assembler for
application name.
```

The next phase of the installation process deals with the actual installation of the application.

2. The following message is displayed:

```
PASS 2 : Moving the files to the appropriate
```

3. If any changes were made in the database component, the VIS automatically begins to update database tables.
4. An Installation Completed message appears.
5. Press **(CANCEL)** to proceed.

If the application is not assigned to a voice channel or host session, a warning message reminds you to do this. The application still can be installed even if a channel has not been assigned to it.

Refer to Chapter 3, “Configuration Management”, for additional information on how to assign voice channels and host sessions.

hnewsript and Trace Service

The new application has been verified and installed. If the new application is assigned to host sessions and changes were made in the host interface definition, the system must read in the new host script and update the application. At this time, you also have the option to initiate the trace service command. This compiles a list of all host screens and stores them in the */vs/trans/hostdata/chan#* directory.

The following message appears on the screen, regarding updating the host script after a successful installation:

```
Install - Update the old host script version with the
new one?
```

```
Currently, the old version of your application is
assigned to host session(s). If you want the newly
installed version to be used, the old version should be
updated. This will be done now. Press <y> to confirm.
Press <n> to cancel.
```



CAUTION:

*Changes made to the host interface after the initial installation do not go into effect until **hnewsript** has been executed. If this is not done, the old version remains installed. Refer to the *CONVERSANT VIS Version 4.0 Command Reference*, 585-350-209, for information on the **hnewsript** command.*

If you cancel at this time, you must execute the **hnewsript** command later to install the new version.

The following message appears on the screen if you choose to continue the process:

```
This procedure causes the VIS to logout from the host
and then login again with the new version of this appli-
cation. If desired, you can trace the logout and login
(that is, capture the sequence of screens exchanged
between the VIS and the host). Press <y> to confirm.
Press <n> to cancel.
```

The database and host interface update processes may or may not be applicable to your application installation. If a database or host interface is not specified, the previously mentioned procedures do not appear in your application installation process.

Backing Up an Application

Use the backup utility to make an archive copy of your completed application or to make an interim copy of an application in progress. The backup copy can be restored to the VIS if the online version is damaged or if you make revisions and wish to go back to the previous version.

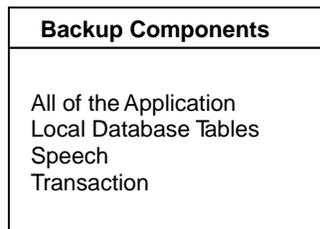
It is vital that you make backup copies of your application regularly during its design and development. It only takes the loss of one application, or even the loss of a day's work, to appreciate the value of investing a little time toward preventive maintenance.

The backup media can be either floppy disk or cartridge tape. If you use floppy disks, you need three or more. Be sure to use only High Density floppy disks. Using Double Density disks will cause the backup procedure to fail.

If you use floppy disks, you must have the formatted floppy disks ready at the time of backup. Typically, you will need three floppy disks to back up an application, excluding speech (which typically takes 1–5 floppies). If you use cartridge tape, you will need three tapes, one for each component of the application.

You cannot backup two different applications to the same floppy disk or cartridge tape. You may reuse floppy disks or tapes from a previous backup. However, any existing application backed up to that media is erased during the new backup procedure.

Select the application you want to backup by highlighting the application name in the Script Builder Applications screen. This is the source application. Press **BACKUP** to open the Backup Components menu screen (Figure 2-5). This screen contains the following items: All of the Applications, Local Database Tables, Speech, and Transaction.



Highlight an item and press Enter

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 2-5. Backup Components Screen

Selecting All of the Application backs up all of the data of the local database tables, all the speech in one or two speech pools used by the application, and all the transaction files for the application highlighted.

You may choose to backup only a part of the application. If you select to backup Local Database Tables, a menu screen titled Local Database Tables opens. This screen contains the choices Local Database Tables and a list of individual database table names. These are the tables owned by the application highlighted in the Script Builder Applications screen. Remember that a table can have multiple owners and selecting All Database Tables backs up all the data in the local database tables.

⇒ NOTE:

Remote ORACLE database tables cannot be backed up through the Backup Components screen. Consequently, if you select Local Database Tables in the Backup Components screen, you will back up only the data in the Local Database Tables. Remote ORACLE database tables must be backed up on the remote machine using ORACLE backup procedures (or, if the remote machine is a VIS, by using the Backup Components screen on that machine). Refer to the *ORACLE RDBMS Database Administrator's Guide* for information on backing up database tables on the remote machine.

When you select Speech, only the speech for the home application is backed up.

⇒ NOTE:

In the case of shared speech, the individual applications containing the shared speech must be backed up separately.

Selecting Transaction backs up all the files under that application. This backup does not include any database table data or speech.

The VIS calculates the number of floppy disks or tapes needed to make the backup copy. After it reports this number, it allows you to cancel the backup operation if you do not have enough formatted floppy disks on hand. If you do not have enough formatted floppy disks, return to the CONVERSANT VIS Version 4.0 screen and select AT&T FACE. FACE provides formatting capabilities under System Administration. Refer to "Disk Operations" on page A-34 in Appendix A, "FACE Features", for information about formatting disks.

If you choose to proceed, the system prompts you to insert and remove floppies at the appropriate times. Be sure to label and number floppy disks in the order that you use them to make future backup/restore operations easier.

When the backup is complete, the Backup Components screen reappears to allow backup of another selection (Local Database Tables, Speech, or Transaction). Proceed with the next backup or press **CANCEL** to return to Script Builder Applications screen.

Restoring an Application

Use the restore utility to replace a damaged application or to restore an older version of an application.

From the Script Builder Applications screen, highlight the application you wish to restore and press **RESTORE** to open the Restore Components screen (Figure 2-6). The application highlighted is the destination application. The application name on the floppy is the source application.

⇒ NOTE:

If you restore an application using a name other than that which the application was backed up as, the original application name still appears in the list of applications and in the speech pool fields.

Restore Components
All of the Application
Local Database Tables
Speech
Transaction

Highlight an item and press Enter.

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 2-6. Restore Components Screen

You now may select to restore All of the Application or a portion of the application, such as, Speech, Local Database Tables, or Transaction.

When you select All of the Application, the system restores each portion of the application. The system first checks to find out if the backup media has the necessary files. If the files exist on the floppy disk or cartridge tape, all the data is copied into a temporary area on the hard disk. This area is cleaned up when the restore operation ends successfully or aborts.

The system checks to see if the new local database tables exist in the system. If the local database tables do not exist, the new tables are installed into the Data Base Management System (DBMS). If the tables already exist in the system and are shared by another application, the tables are listed with the application name. The first five applications are listed. You then are prompted to either remove or keep each of these tables. If you select to keep a table, the data being restored is appended to the existing table.

⇒ NOTE:

If a table is appended, there may be duplicate records. To avoid having duplicate records, you may want to delete the table before you execute the restore procedure.

Only the home application's speech is backed up; therefore, the restore operation checks to see if there is speech already owned by the destination application. If shared speech exists, you are prompted to remove the shared speech or to allow it to remain. The first five applications are listed.

Finally, you are prompted to restore the transaction component if it exists. If you choose to restore the transaction, the system displays a warning that this procedure will overwrite the files that already exist for the transaction and prompt you to type **y** to continue or **n** to abort the restore.

You may choose to restore a portion of the application by selecting that portion, such as Speech, Local Database Tables, or Transaction. The system goes through the restore operation for the selected portion of the application.

⇒ NOTE:

Database tables are treated as part of the Script Builder application. Consequently, database tables may only be restored and used when the Transaction portion of the application is restored through the Restore Components screen.

⇒ NOTE:

You can restore only those applications that have been backed up using the Backup Components screen. Therefore, you cannot restore remote ORACLE database tables through the Restore Components screen because these database tables are not backed up through the Backup Components screen. Consequently, when you select to restore either All of the Application or only Local Database Tables, the system restores the data of only the Local Database Tables. For information on backup and restores procedures or ORACLE database tables, refer to the *ORACLE RDBMS DATAbase Administrator's Guide*.

⇒ NOTE:

The VIS must be running in order to restore speech. If service was assigned previously, those applications will answer calls that may be received while speech is restored but the speech will not be available. To prevent this, either remove the service from the cards or take the cards manually out-of-service before restoring speech.

Be sure to have *all* floppies or cartridge tapes which constitute the backup copy on hand.

You are given a chance to continue or cancel the restore operation as it proceeds. If you continue and you are using floppy disk, you are prompted for each floppy as needed.

When the component is restored, the Restore Component screen reappears and you may choose to restore another component. When all restoration is complete, press to return to the Script Builder Applications screen.

Script Builder Software Utilities

If the Script Builder software package is installed on the VIS, two additional function keys appear in the Script Builder Applications screen when you press . takes you into the Script Builder program and allows you to copy application information from one application name to another application name.

⇒ NOTE:

Note that and only appear if the Script Builder software package is installed on the VIS.

Refer to Chapter 3, "Starting Script Builder, of *CONVERSANT VIS Script Builder User's Guide*, 585-350-704, for information on defining and copying applications through Script Builder.

Configuration Management

3

Configuration Management Overview

The Configuration Management component of the CONVERSANT Voice Information System (VIS) gives you the tools to manage the current configuration of voice channels, host sessions, and database connections. You can assign scripts to run on specific voice channels or host sessions and assign functionality to signal processor (SP) and T1 or E1 cards. You also can perform various maintenance functions such as displaying the status of the system, changing system message priorities, destinations, and thresholds, starting and stopping the VIS, and diagnosing the system hardware.

Starting Configuration Management

From the Voice System Administration screen, highlight Configuration Management and press **ENTER** to open the Configuration Management screen (Figure 3-1).

Configuration Management
Database Administration
Host Link
Host Sessions
System Control
System Message Administration
Voice Equipment

Highlight an item and press ENTER.

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 3-1. Configuration Management Screen

Database Administration

From the Configuration Management screen, highlight Database Administration and press **(ENTER)** to display the Database Access ID Table screen (Figure 3-2). The Database Access ID Table screen displays a list of Database Access IDs, each representing an ORACLE database connection that has been established by the system. Additional database connections may be established by adding a Database Access ID to the Database Access ID Table screen. As many as five database connections may be established in this manner, including one required connection to the local ORACLE database (DB1_local) and any combination of local and remote access with the remaining four Database Access IDs (DB2_local or DB2_remote, DB3_local or DB3_remote, DB4_local or DB4_remote, and DB5_local or DB5_remote).

Note that once a database connection has been established, the corresponding Database Access ID will be available to the application developer through the Script Builder Add a Table screen until the connection is removed.

Database Access ID Table		
DATABASE ACCESS ID	REMOTE MACHINE	DB SID
DB1_local	—	—
DB2_remote	rem1	A
DB3_remote	rem2	R

Press CHG-KEYS to ADD or REMOVE a Database Access ID.
Press CANCEL to exit.

HELP	PREVPAGE	NEXTPAGE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	----------	----------	----------	----------	--------	----------	----------

Figure 3-2. Database Access ID Table Screen

The standard set of function keys is available in the Database Access ID Table screen, along with the following screen-specific functions:

- Add a Database Access ID (establish a connection)
- Remove the highlighted Database Access ID and its contents from the application (drop a previously established connection)

Figure 3-3 illustrates a sample VIS database connection architecture.

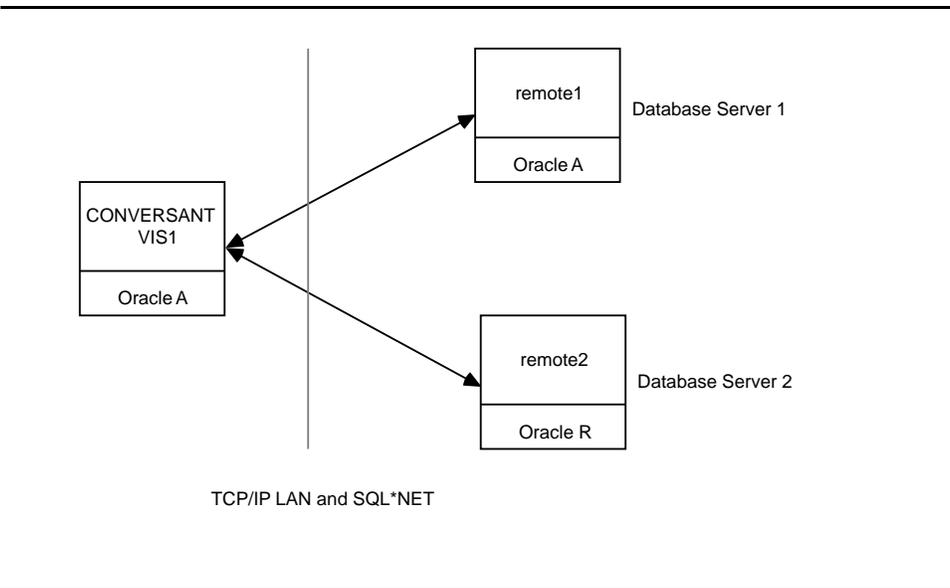


Figure 3-3. Database Access Connections

Adding a Local Database Access ID

While the Database Access ID Table screen is active, press (ADD) to open the Add a Database Access ID screen (Figure 3-4).

Add A Database Access ID
Add A Local Database Access ID Add A Remote Database Access ID

Highlight an item and press <ENTER>.

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 3-4. Add a Database Access ID Screen

Highlight Add a Local Database Access ID and press (ENTER) to open the Add a Local Database Access ID screen

Add a Local Database Access ID
Database Access ID: _____

Enter one of the Database Access IDs from the CHOICES menu.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-5. Add a Local Database Access ID Screen

⇒ NOTE:

DB1_local represents the standard connection to the local ORACLE database. The DB1_local Database Access ID cannot be removed; that is, there must always be at least one connection to the local database. If an application accesses multiple tables in the local database, some performance improvement may be gained by defining multiple Database Access IDs to the local database and then splitting table access evenly between these multiple Database Access IDs.

Database Access ID

Database Access ID is a required field and must therefore be filled in to establish a connection to a local ORACLE database. In the Database Access ID field, enter the desired Local Database Access ID and press or press **(SAVE)** or press **(CHOICES)** for a list of all valid Database Access ID choices.

Initially, the CHOICES menu of the Add a Local Database Access ID screen will list DB2_local, DB3_local, DB4_local, and DB5_local. Subsequently, the CHOICES menu will list only those Database Access IDs which have not been added by either the Add a Local Database Access ID or Add a Remote Database Access ID screen. For example, if DB2_remote is currently defined as a remote Database Access ID, DB2_local is not a valid choice for a local Database Access ID.

After completing the form, press **(SAVE)** to save the information specified in the form and close the Add a Local Database Access ID screen specified in the form. The Add a Database Access ID screen (Figure 3-4) will remain active, allowing you to add other database access IDs.

⇒ NOTE:

After you have defined a local Database Access ID, you must first close the Database Access ID Table screen and then stop and start the voice system for the local database connection to be established. You may stop and restart the voice system by performing the stop voice system and restart voice system procedures described in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, or by using the System Control screen as described in this chapter.

Adding a Remote Database Access ID

Before establishing a connection to a remote database, you must first install WIN and SQL*NET networking packages.

Required networking packages for Interlan networking include the following:

- NP 600A NP Driver
- WIN 386 3.0 TCP/IP Package
- Network Support Utilities Package
- SQL*Net ORACLE RDBMS Networking Package for the WIN TCP/IP

Required networking packages for StarLAN networking include the following:

- AT&T 386 NI Driver
- WIN 386 3.0 TCP/IP Package
- Network Support Utilities Package
- SQL*Net ORACLE RDBMS Networking Package for the WIN TCP/IP

Refer to Chapter 8, "Installing Optional Feature Circuit Cards," of *Voice Processing Hardware Installation* for the appropriate platform for information on installing the cards associated with the Interlan and StarLAN networking packages. Refer to Chapter 4, "Installing Software For Optional Features," of *CONVERSANT VIS Version 4.0 Software Installation*, 585-350-111, for information on installing the software associated with the Interlan and StarLAN networking packages.

In addition, before establishing a database connection to a remote machine other than a CONVERSANT VIS, you must also establish sti/sti as a login/password on the remote database. Refer to the *ORACLE RDBMS Database Administrator's Guide* for information on establishing this account.

NOTE:

For remote ORACLE 7 database: The remote database must be an ORACLE database. All existing versions of ORACLE databases (ORACLE 5, ORACLE 6, and ORACLE 7) are supported. However, if the remote database is ORACLE 7, the ORACLE 6 data dictionary views must be created to co-exist with the ORACLE 7 dictionary views on the remote machine. This can be done by executing the ORACLE-provided script "catalog6.sql" residing in the **\$ORACLE_HOME/rdbms/admin** on the remote machine. For example, the following command creates the ORACLE 6 data dictionary views:

```
sqlplus sys/<password> @catalog6.sql
```

where *<password>* is the password for the system owner "sys."

Also, please note the differences between data types CHAR and VARCHAR2 (new to ORACLE 7). All tables to be referenced by VIS applications should use data type VARCHAR2 instead of data type CHAR. Refer to "Adding a New Database Table" in Chapter 6, "Creating Database Tables," of *CONVERSANT VIS Script Builder*, 585-350-704, for more information.

For each remote ORACLE database connection, the following parameters will need to be adjusted in the **init[ORACLE_SID].ora** file (ORACLE Version 5 systems) or the **init[dbname].ora** file (ORACLE Version 6.0) systems on the remote machine:

- The OPEN_CURSORS parameter must be changed from 150 to 240.
- The PROCESSES parameter must be increased from 30 to 50.
- The CONTEXT_INCR parameter must be added and set to 1024.
- The CONTEXT_AREA parameter (which corresponds to is the CONTEXT_SIZE parameter on ORACLE Version 5 and previous ORACLE releases) must be set to 1024.

Refer to the *ORACLE RDBMS Database Administrator's Guide* for information on setting these parameters.

⇒ NOTE:

After you have defined a remote Database Access ID, you must first close the Database Access ID Table screen and then stop and start the voice system for the remote database connection to be established. You may stop and restart the voice system by performing the stop voice system and restart voice system procedures described in Chapter 4, "Common Maintenance Procedures," of the *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, or by using the System Control screen as described in this chapter.

Note that the CONVERSANT VIS database DIP oraldb requires the existence of a data dictionary view called TAB and a table called LDBCOLS. When the DIP is first connected to a remote machine, if this TAB view and/or the table LDBCOLS do not exist, the DIP will create the TAB view and/or the LDBCOLS table. You should make sure that the server machine does not have a view called TAB or a table called LDBCOLS that were not created for this purpose.

Note also that the TAB view is automatically created by Version 5 or Version 7 ORACLE. If your server machine is either a VIS machine or a non-VIS machine running Version 5 or Version 7 ORACLE, you do not need to worry about this view.

Adding a Remote Database Access ID

While the Database Access ID Table screen is active, press **(ADD)** to open the Add a Database Access ID screen (Figure 3-4). Highlight Add a Remote Database Access ID and press **(ENTER)** to open the Add a Remote Database Access ID screen (Figure 3-6).

Add A Database Access ID
Add A Local Database Access ID
Add A Remote Database Access ID

Highlight an item and press <ENTER>.

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 3-6. Add Remote Database Access ID Screen

Database Access ID

Database Access ID is a required field and must therefore be filled in to establish a connection to a remote ORACLE database. In the Database Access ID field, enter your remote Database Access ID and press **(SAVE)** or press **(CHOICES)** for a list of all valid Database Access ID choices.

Initially, the CHOICES menu for the Add a Remote Database Access ID screen lists DB2_remote, DB3_remote, DB4_remote, and DB5_remote. Subsequently, the CHOICES menu lists only those Database Access IDs which have not been added by either the Add a Local Database Access ID or Add a Remote Database Access ID screen. For example, if DB2_local is currently defined as a local Database Access ID, DB2_remote is not a valid choice for a remote Database Access ID.

Remote Machine

The Remote Machine field identifies the TCP/IP network host name of the remote machine. The Remote Machine field is a required field and must therefore be filled in before a remote connection can be established.

The following rules apply when entering the Remote Machine name:

- The name must be from 1 to 8 characters in length.
- Valid characters are only letters (A–Z and a–z), numbers (0–9), and the underscore (_).
- The first character of the name must be a letter (A–Z or a–z).
- Names are case sensitive; that is, “ABC” is not the same as “Abc” or “abc.”
- The machine name and network address must be in the **/etc/hosts** file.

DB SID

The DB SID identifies the database instance on the remote ORACLE machine (the ORACLE_SID variable on ORACLE Version 5 machines or the dbname variable on ORACLE Version 6.0 machines). DB_SID is an optional field and is therefore not required to be filled in if the ORACLE database on the remote machine is a single instance that is not identified by ORACLE_SID (ORACLE Version 5) or dbname (ORACLE Version 6.0).

The DB SID must be filled in if the remote machine ORACLE database is identified by ORACLE_SID or dbname. The following rules apply when entering the DB SID:

- The name must be from 0 to 8 characters in length.
- Valid characters are ONLY letters (A–Z and a–z), numbers (0–9), or the underscore (_).
- Names are case sensitive; that is, “ABC” is not the same as “Abc” or “abc.”

After completing the form, press **SAVE** to save the information specified in the form and close the Add a Remote Database Access ID screen specified in the form. The Add a Database Access ID screen (Figure 3-4) will remain active, allowing you to add other database access IDs.

Removing a Database Access ID

While the Database Access ID screen is active, press **(REMOVE)**. The Remove a Database Access ID form opens to allow you to remove one or more existing Database Access IDs, thereby dropping the connection to the associated ORACLE database (Figure 3-7).

Remove a Database Access ID							
Database Access ID: _____							

Enter one of the Database Access IDs from the CHOICES menu.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-7. Remove a Database Access ID Screen

Enter the Database Access ID you wish to remove and press **(SAVE)** or press **(CHOICES)** for a list of all valid Database Access ID choices available for removal. Highlight your choice, then press **(ENTER)**.

⇒ NOTE:
When you remove a remote Database Access ID, be sure that no existing applications running on the system are using that Database Access ID. If an application is using the ID that has been removed, the application will fail.

⇒ NOTE:
DB1_local is the standard connection to the local ORACLE database. The DB1_local Database Access ID cannot be removed through this screen.

Host Link

From the Configuration Management screen, highlight Host Link and press **(ENTER)** to open the Host Link screen (Figure 3-8).

Host Link	
Host Link 0:	_____
Host Link 1:	_____

Enter <s>NA or SC protocol and press SAVE key to configure.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-8. Host Link Screen

⇒ NOTE:

You will receive an error message indicating that no host cards exist to configure if there are no host cards in the system. Press **(ENTER)** to exit from this screen.

The Host Link screen allows you to define or change protocol information on a selected host link. The number of lines displayed in this screen correspond to the number of host 3270 cards installed in the system. You may select the link protocol by typing **s** (for SNA) or **b** (for BISYNC) or by pressing **(CHOICES)** and making a selection from a menu screen. Press **(SAVE)** to define the host configuration.

Defining an SNA Link

From the Host Link screen, type **s** for SNA (SDLC protocol) and press **SAVE** to open the Define SNA Link screen (Figure 3-9).

Define SNA Link

Host Link: 00 Protocol: SNA Terminal Type: CRT24_80

System: SNAHOSTDIAL
Syncport: board0
Line Mode: HALF
Line Type: LEASED
SNAAddress: 193
 XID: 01780000
 Code: NRZ
CTS Delay: 0
Frame Delay: 0
Power Change: NO
List of LUs: 2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21
 22,23,24,25,26,27,28,29,30,31,32,33

Enter a descriptive name for this link (max - 55 alpha chars).

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-9. Define SNA Link Screen

If the selected link is already configured as SNA, the Define SNA Link form will display existing values for various parameters. If the selected link has not been configured as SNA, the Define SNA Link screen will display default values for the parameters.

⇒ NOTE:

Operating an SNA link at speeds higher than 9600 baud requires careful selection of the protocol parameters. Refer to Chapter 4, "Troubleshooting the Host Interface," of *CONVERSANT VIS Host Interface*, 585-350-815, for information on operating at speeds over 9600 baud.

System

System is a required field that identifies the configuration as SNA. Enter a descriptive name for this link. The default value for this field is SNAHOSTDIAL.

Syncport

Syncport is a required field that identifies the name of the physical device that is assigned to the communications card. The value for this field should be the same as the first field corresponding to this host 3270 card in the `/usr/lib/3270/syncports` file.

Line Mode

Line Mode is a required field that indicates either half or full duplex line operation. The default value for this field is HALF.

Line Type

Line Type is an optional field that indicates switched or leased line operation. The default value for this field is LEASED.

SNA Address

SNA Address is a required field that specifies the SDLC Station Address for the host. Values for this field range from 1 to 254. The default value for this field is 193.

XID

XID is a required field that specifies the 3270 Exchange Station Identification String for the host. The XID string is an 8-digit number, with the first three digits representing the block number (usually 017 or 018) and the last five digits representing the station identification number. This parameter value may not be significant when a direct connection is used between the VIS and the host. Please contact your host system administrator for this value.

Code

Code is a required field that indicates the coding of the bit stream on the link. Choices for this field include NRZ and NRZI. The default value for this field is NRZ.

CTS Delay

CTS Delay is a required field that indicates the amount of delay in milliseconds following a transmission before the CTS line is checked for permission to transmit another word. Values for this field range from 0 through FF (HEX). The default value for this field is 0.

⇒ NOTE:

Do not change this parameter unless directed to do so by a field service representative.

Frame Delay

Frame delay is a required field that specifies the amount of delay in milliseconds following the transmission of a frame before another frame is transmitted. Values for this field range from 0 through FF (HEX). The default value for this field is 0.

⇒ NOTE:

Do not change this parameter unless directed to do so by a field service representative.

Power Change

Power Change is a required field that specifies power change notification support by 3270 host card. When Power Change is disabled (NO is selected), the host will not close the session when the power on the terminal is turned off or the user exits TE, thereby allowing the session to be resumed at the point at which it was left. When Power Change is enabled (YES is selected), the host closes the session when the power on the terminal is turned off or the user exits TE, requiring the user to reestablish the session. The default value for this field is NO.

List of LUs

List of LUs is a required field that specifies the LUs that are associated with this host card. Each host card can support a maximum of 32 LUs and the LU numbers can range from 2 to 255. By default, the LUs are numbered from 2 to 33.

After completing the Define SNA Link form, press **(SAVE)** to close the screen and save the information specified in the form. Note that you will be able to save the form only if all fields have a value. After pressing **(SAVE)**, you will receive a confirmation screen if all information specified in the form is correct. Type **y** to initialize the host link with the specified configuration information or press **n** to cancel initialization. If an old configuration file exists, it will be saved as **hostN.cfg**, while the new or modified configuration file will be saved as **host.cfgN** (where *N* is the link number you are configuring).

Use the procedure below to download the host card and reinitialize the system after defining the SNA link:

1. Download the host communication card using the **load_bin** and **host_cfg** commands as described in the *CONVERSANT VIS Version 4.0 Command Reference*, 585-350-209.
2. Perform the **Stopping the Voice System** procedure as described in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112.
3. Re-establish the modem connection if applicable. Refer Chapter 3, "Connecting Peripherals and Powering Up," of the hardware book specific to your platform.
4. Perform the **Starting the Voice System** procedure as described in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112.

Defining a BISYNC Link

From the Host Link screen, type b for BISYNC (BISYNC protocol) to open the Define BISYNC Link screen (Figure 3-10).

Define BISYNC Link		
Host Link: 00	Protocol: BISYNC	Terminal Type: CRT24_80
System: BSCHOSTDIAL		
Syncport: board0		
Line Mode: HALF		
Control Unit Address: 0		
Code Set: EBDIC		
No. of ENQ Chars.: 0		
No. of SYNC Chars.: 3		
No. of RCV Timeouts: 3		
No. of XMIT Timeouts: 0		
No. of Trailing Pads: 3		
Controller Type: 3274		
List of LUs: 0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17 19,20,21,22,23,24,25,26,27,28,29,30,31		

Enter a descriptive name for this link (max . 55 alpa-numeric chars).

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-10. Define BISYNC Link Screen

If the selected link is already configured as BISYNC, the Define BISYNC Link form displays existing values for various parameters. If the selected link has not been configured as SNA, the Define BISYNC Link screen displays default values for the parameters.

System

System is an optional field that identifies the configuration as either SNA or BSC. Enter a descriptive name of up to 64 characters. The default value for this field is BSCHOSTDIAL.

Syncport

Syncport is an optional field that identifies the name of the physical device that is assigned to the communications card. The value for this field should be the same as the first field corresponding to this host 3270 card in the `/usr/lib/3270/syncports` file.

Line Mode

Line Mode is a required field that specifies whether the host link will operate in a HALF or FULL duplex mode. The default value for this field is HALF.

Control Unit Address

Control Unit Address is a required field that identifies the Control Unit Polling Address for the host. Values for this field are decimal numbers ranging from 0 through 31. The default value for this field is 0. You should contact your host system administrator to get this address.

Code Set

Code Set is a required field that identifies the character set. Values for the Code Set field include EBCDIC (EBCDIC code), ASCII (ASCII code with odd parity), and ASCNPART (ASCII code with no parity). The default value for this field is EBCDIC.

Number of ENQ Characters

No. of ENQ Characters is a required field that specifies the maximum number of consecutive ENQ characters sent to the host without receiving acknowledgment before the host connection will be dropped. Enter a decimal number from 0 to 127 in this field. The default value for this field is 0.

Number of SYNC Characters

No. of SYNC Characters is a required field that specifies the number of leading SYNC characters to precede each transmission to the host, in order to establish synchronization with the host. Enter a decimal number from 3 to 10 in this field. The default value for this field is 3.

Number of RCV Timeouts

No. of RCV Timeouts is a required field that specifies the maximum number of consecutive receive timeouts that may occur before the link drops the connection with the host. The host interface card waits for 3 seconds for a response from the host. Enter a value from 3 to 9 in this field. The default value for this field is 3.

Number of XMIT Timeouts

No. of XMIT Timeouts is a required field that specifies the maximum number of times that the host card will transmit a message if the host reports an error in reception. If the host card reaches the limit, the host card sends an EOT or disconnect. Values for this field range from 0 to 8. The default value is 0.

Number of Trailing Pads

No. of Trailing Pads is a required field that indicates the number of trailing pad characters the host card will append to each transmitted message. Enter a number from 3 to 9. The default value for this field is 3.

Controller Type

Controller Type is a required field that indicates which type of controller card is being emulated. This host card emulates only controller types 3274 and 3275. The default is 3274.

List of LUs

List of LUs is a required field that specifies the LU numbers that are associated with this host card. Each host card can support a maximum of 32 LUs and the LU numbers can range from 0 to 31. By default, the LUs are numbered from 0 to 31.

After completing the Define BISYNC Link form, press **(SAVE)** to close the screen and save the information specified in the form. Note that you will be able to save the form only if all fields have a value. After pressing **(SAVE)**, you will receive a confirmation screen if all information specified in the form is correct. Type **y** to initialize the host link with the specified configuration information or press **n** to cancel initialization. If an old configuration file exists, it will be saved as **hostN.cfg**, while the new or modified configuration file will be saved as **host.cfgN** (where *N* is the link number you are configuring).

Use the procedure below to download the host card and reinitialize the system after defining the BISYNC link:

1. Download the host communication card using the **load_bin** and **host_cfg** commands as described in the *CONVERSANT VIS Version 4.0 Command Reference*, 585-350-209.
2. Perform the **Stopping the Voice System** procedure as described in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112.
3. Re-establish the modem connection if applicable. Refer Chapter 3, "Connecting Peripherals and Powering Up," of the hardware book specific to your platform.
4. Perform the **Starting the Voice System** procedure as described in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112.

Host Sessions

From the Configuration Management screen, highlight Host Sessions and press **(ENTER)** to open the Host Sessions screen (Figure 3-11).

Host Sessions							
SESSION		SERVICE		STATE			
0		appl2		Logged In			
1		appl5		Not Available			
2		appl8		Logging Out			
3		appl11		Recovering			
4		flash		Transaction			
5		chantst		Free			
OPTIONS		ASSIGN	UNASSIGN		PRINT	FRM-MGMT	CHG-KEYS

Figure 3-11. Host Sessions Screen

The Host Sessions screen is where you assign and unassign services to host sessions and display or print the current session. All sessions on the VIS are displayed.

Session

A host session serves as a link between a channel and the host. Current host sessions are displayed in the Host Sessions screen. A maximum of 64 host sessions may be specified in the system.

Service

The service column provides the name of the service for the corresponding host session.

State

The host session state includes the various states in which the host session exists. The following is a list of the possible host session states and their meanings:

- Not available — Session is not available for use
- Free — Session was manually freed
- Unassigned — Service was never assigned to the session or service was assigned and later manually deleted
- Logged out — Service is still assigned, but the session is logged out
- Logging out — Temporary state; the session is in the process of logging out immediately after a manual “hlogout”
- Logging in — Temporary state; the session is in the process of logging in immediately after a manual “hassign” or “hlogin”
- Logged in — Occurs after a successful login; session is ready to accept a transaction
- Transaction — Session is currently involved with a transaction
- Recovering — Occurs if the login procedure fails, the transaction ends somewhere other than the transaction base screen, or the recovery procedure ends somewhere other than the transaction base screen

Displaying Options

You can tailor the host sessions report to display a subset of host sessions associated with a particular service. The report format specified remains in effect until it is changed. If you wish to change the display settings, press **(OPTIONS)** to open the Options For Host Sessions Display screen (Figure 3-12).

Options For Host Sessions Display							
Sessions : <u> 25-45 </u>							
Service : <u> flash </u>							

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-12. Options For Host Sessions Display Screen

In the Options For Host Sessions Display screen, you can either fill in one field, and leave the remaining one blank, or fill in both fields. A blank field means that the VIS will not restrict the display based on this particular field. Therefore, if only one field is filled in, its value determines what is displayed. If both fields are filled, the combination of the values determines what is displayed.

Sessions

The following session range combinations can be specified:

- Display all host sessions
- Display some host sessions
- Display host sessions assigned to a specific service
- Display a combination of the above

You can specify one or more session numbers or a range of session numbers, separated by commas or spaces. The host session display should be limited to host sessions numbered 0–63. Host sessions should be segmented in multiples of 32 sessions, with host sessions 0–31 associated with Host Link 0 and host sessions 32–63 associated with Host Link 1.

This is not a required field. If left blank, the VIS displays all sessions for the named service. The default value is all.

Service

This field indicates the service to be displayed. If this field is left blank, the VIS displays all sessions requested, regardless of their service. The default value is "blank." Type the desired service name or press **(CHOICES)** to make a selection from a menu screen.

After you have completed the form, press **(SAVE)** to close the Options For Host Sessions Display screen.

Assigning Service to Host Sessions

Use **(ASSIGN)** to assign service to a host sessions. From the Host Sessions screen, press **(ASSIGN)** to open the Assign Service To Host Sessions form (Figure 3-13). Note that the assign process automatically begins the logon sequence on the specified host sessions.

Assign Service To Host Sessions	
Service:	<u>feature_tst</u>
Sessions :	<u>1-8</u>

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-13. Assign Service to Host Sessions Screen

Service

This field specifies the type of service that should be assigned to the indicated host sessions. This is a required field and must therefore be filled in to properly assign service to the host sessions. Type your service selection or press **(CHOICES)** to choose from a menu screen. Figure 3-13 uses feature_tst (feature test) as the service.

Sessions

Use this field to indicate the host sessions to which you want to assign service. You can specify one or more session numbers or session ranges, separated by commas or spaces. This is a required field and must be filled in to properly assign service.

After you have completed the form, press **(SAVE)** to close the Assign Service To Host Sessions screen. The Command Output gives a report on the status of service assignment. Press **(CANCEL)** to close the Command Output screen.

Unassigning Service from Host Sessions

Use **(UNASSIGN)** to unassign service from a host sessions. From the Host Sessions screen, press **(UNASSIGN)** to display the Unassign Service From Host Sessions form (Figure 3-14).

Unassign Service From Host Sessions	
Service :	<u>feature_tst</u>
Sessions :	<u>1-8</u>

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-14. Unassign Service From Host Sessions Screen

Service

This field specifies the type of service that should be unassigned from the indicated host sessions. This is a required field and must therefore be filled in to properly unassign service to the host sessions. Type in your service selection or press **(CHOICES)** to choose from a menu screen. Figure 3-14 uses feature_tst (feature test) as the service.

Sessions

Use this field to indicate the host sessions from which you want to unassign service. You can specify one or more session numbers or session ranges, separated by commas or spaces. This is a required field and must be filled in to properly unassign service.

After completing the form, press **(SAVE)** to close the Unassign Service to Host Sessions screen. The Command Output gives a report on the status of unassigning a service. Press **(CANCEL)** to close the Command Output screen.

Host Session Print Option

To obtain a complete printout of the host session report, simply press **PRINT** from the Host Sessions screen. Make sure the VIS has all the proper printer connections. Refer to Appendix A, "FACE Features", for additional information on how to establish printer operations.

System Control

Through the System Control screen, you can display the status of the VIS, start and stop the VIS, and diagnose VIS cards and buses.

From the Configuration Management screen, highlight System Control and press **ENTER** to open the System Control screen 3-15).

System Control
Diagnose Equipment
Renumber Voice Channels
Report Voice System Status
Shutdown System
Start Voice System
Stop Voice System

Highlight an item and press Enter.

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 3-15. System Control Screen

Diagnosing Equipment

From the System Control screen, highlight Diagnose Equipment and press **(ENTER)** to open the Diagnose Equipment screen (Figure 3-16).

Diagnose Equipment	
Equipment to Diagnose:	<u>card</u>
Equipment Number :	<u>0, 3-6</u>
Immediate Diagnose?	<u>no</u>

Specify whether you want to diagnose a card or a bus

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-16. Diagnose Equipment Screen

The diagnose procedure is used to perform diagnostics on Tip/Ring (T/R), T1, E1, or SP cards or a bus. Diagnosing an SP card also diagnoses associated Companion cards (CMPs) if FlexWord or WholeWord speech recognition (SW_RECOG, WW_RECOG, VOICE+SW_RECOG, or VOICE+WW_RECOG) functionality or Spanish Text-to-Speech (SP_TTS) is assigned to the SP. The cards in an SP/CMPs cluster cannot be diagnosed independently. Diagnostics should be performed when the system displays a system message.

To fully diagnose the system hardware, diagnose all the cards and the bus. Diagnosing the cards alone does not insure that the bus is functioning properly. Therefore, perform card diagnostics and bus diagnostics to insure system functionality.



WARNING:

If you are diagnosing the T/R or T1 or E1 card that is also a master of the TDM bus (that is, supplying clock to the bus), transactions currently playing or coding speech on the bus will experience speech breaks and a loss of phrases during the diagnostic procedure. For this reason, it is recommended that diagnostics on the card serving as a master of the TDM bus be performed during off-hours. Refer to notes in the "Voice Equipment" section later in this chapter for information on determining which card is serving as master of the TDM bus and which speech is being played or coded over the TDM bus.

Equipment to Diagnose

You must specify the type of equipment to be diagnosed, either a card or bus. Type **c** for card or **b** for bus. There is no default value for this field. You also can make a selection from the CHOICES menu screen. Note that this is a required field and must be filled in to properly execute the diagnose procedure.

Equipment Number

Each T/R, T1, E1, and SP card has an identifying number. Equipment numbers are defined by the position of the card in the card table displayed in the Voice Equipment screen.

To perform the diagnostic procedure, the number of the card or bus must be specified. Enter the valid card number. Card range can be from zero (0) to 15. When a range of cards is specified, cards are diagnosed in order, one at a time. This is a required field and must be filled in to properly execute the diagnose procedure. Note that the bus value must be either 1 or all.

Diagnose Immediately

If necessary, you can specify immediate diagnosis on the selected card or bus. If you choose to have immediate diagnosis on the card/bus, all calls on active channels for the specified equipment are terminated. If there are active calls and immediate diagnosis is not specified, the card will be returned to the original state and diagnostics will not be performed.

This is a required field and must be filled in to properly execute the diagnose procedure. Type **y** for yes, **n** for no, or press **(CHOICES)** to bring up a menu screen to make your selection.

After all the information is completed in the Diagnose Equipment screen, press **(SAVE)**. The VIS provides a screen with a report on the system's equipment status.

Renumbering Voice Channels

The Renumber Voice Channels option removes all nonexistent (NONEX) cards from the voice equipment table, then reorders all existing equipment with T1s or E1s first, followed by T/Rs, then SPs. This reordering changes the channel numbers of some cards. However, user-defined characteristics, such as options, attributes, and script assignments, do not change.

If a card is found in the system that was not in the voice equipment table, it is added in the appropriate heading (T1, E1, T/R, or SP) with default settings.

NOTE:

The Renumber Voice Channels option brings down the system immediately. When you highlight this option, a warning is displayed and you are given the option of continuing with the procedure or returning to the System Control menu.

Reporting Voice System Status

The Report Voice System Status option provides a current status on the VIS, whether it is running or stopped, and a run level check. From the System Control screen, highlight Report Voice System Status, and press **(ENTER)** to open the Status of Voice System screen. A message giving the status of the VIS appears in the screen.

Shutting Down the System

CAUTION:

*Always stop the VIS before executing a shutdown. Shutting down the system without stopping the VIS may corrupt the software. (To stop the VIS, either use the System Control screen or, from the UNIX system command line, use the **stop_vs** command). For information on stopping the VIS through the "System Control" screen, refer to this procedure later in this chapter.*

The Shutdown System option stops the UNIX operating system, after forcing a reboot of the system. A system shutdown should be performed only when moving the equipment, servicing it, or adding cards. Shutdown System also stops the VIS.

Refer to Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, for information on rebooting the system after system shutdown.

Starting the Voice System

The Start Voice System screen allows you to start or restart the VIS. When this process is invoked, all channels that were deactivated using the Stop Voice System component are returned to service in the state they existed when the voice system was last running.

To access the Start Voice System screen from the System Control screen, highlight Start Voice System and press **ENTER**. The VIS screen clears and various startup messages scroll on the screen. After the VIS has been successfully started, press **ENTER** to continue.

⇒ NOTE:

Immediately after starting the voice system, you will be unable to perform some administrative commands and you may receive a system message indicating that MTC is busy. After the system is initialized, MTC will be free to handle administrative commands.

⇒ NOTE:

If you have started System Monitor (**sysmon**) prior to starting the VIS, sysmon must be stopped and started. If this is not done, sysmon may display the channels in a pending state.

Stopping the Voice System

This option stops the VIS by placing channels in an inactive state with the option to wait for in-progress calls to end.

Stop the system when performing some type of routine service such as backup and restore.

When the system is stopped, the CPU does the following:

- Puts the entire system in the idle state when all lines are free
- Saves internal system tables
- Turns off VIS processes

This procedure takes approximately two to three minutes to complete. From the System Control screen, highlight Stop Voice System and press **(ENTER)** to begin the VIS stop process. A Wait Time screen opens, where you must enter a wait time. During this wait time, all calls in progress will be completed and any new calls will not be accepted.

Valid wait time range is between 60 to 600 seconds. The default value is 180 seconds. Enter a wait time or make a selection from the CHOICES menu screen. After completing the form, press **(SAVE)** to close the screen.

The VIS screen clears and various stop system messages scroll on the screen. After the VIS has been successfully stopped, press **(ENTER)** to continue.

System Message Administration

System messages are used within the VIS to signal system operations (events) as well as errors during system operations (alarms). System messages vary in content priority, destination, and threshold parameters. The System Message Administration screen allows you to access screens that enable you to do the following:

- List all the parameters associated with a particular system message
- Add or remove a new destination to/from the current list of destinations for the current system message
- Modify a message priority
- Modify the system message threshold period
- Add or remove a new threshold/threshold message Id pair to/from the current list of thresholds for the current system message

Following is an explanation of the concepts behind the priority, destination and thresholding parameters as well as suggestions for how these parameters may be modified to suit your application.

Events are those messages of priority none (denoted by “-” in the System Message Administration screen). Alarms are messages of priority minor, major and critical (denoted by “*”, “**”, and “*C” in this screen). The System Message Administration screen allows you to modify any message priority. Refer to Chapter 3, “System Message Listings,” of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, for information on these priority levels. When the system is installed, each message is assigned to a particular priority. In most cases, these priorities are appropriate and do not need to be modified. Depending on the type of application, however, you may want to modify a message priority. You will learn how to modify a message priority later in this chapter.

When a System Message is generated from a voice system process, it is sent to the log destination or the Master Log file. The master log provides a consistent and complete account of all messages generated by the system. The destination alarm and event insure that alarm messages do not overrun event messages and vice versa. The system constantly generates event and alarm message information. Stderr may be used to capture message information for user level processing. Console allows messages to be sent to the system console. sccs and mxmtr refer to specific feature packages (such as the SCCS/CompuLert and Netview Alarms optional feature packages) and alertPipe sends messages to the alerter pipe which do not affect the current release.

As with priorities, all system messages are assigned to the appropriate destination with the installed software. In general, there should be no need to modify system message destination settings.

Note that if a message is changed from the event destination to the alarm destination, a similar change should be made on the message priority from none (-) to minor (*) and vice versa.

⇒ NOTE:

Some messages are generated with destinations and priorities that are not affected by System Message Administration screens (that is, GEN001, GEN002, and THR00[1–4]). Almost all other messages can be altered via the System Message Administration screens.

System message thresholds allow actions to be taken when a certain number of messages are generated over a set period of time. Message thresholding allows for escalation of message priority or criticality. A system message may be of little concern when it occurs in small numbers over long time intervals. However, if message occurrences increase over shorter time intervals, this may indicate more serious problems with the system. System message threshold allows for a new message to be sent when a threshold is reached. The new message may be higher in priority and have a different destination set than the original message. The new message may then trigger operations personnel to investigate a problem only after it is deemed serious enough by the thresholding parameters.

The threshold message assigned to a particular system message can be modified in terms of priority, destination and even thresholding parameters (although applying thresholds to thresholding messages may be meaningless). Using these facilities a threshold message can be made to provide escalation on the message being thresholded.

To access the System Message Administration feature from the Configuration Management screen, highlight System Message Administration and press **ENTER** to open the System Message Administration screen. Figure 3-17 shows an example of the System Message Administration screen.

System Message Administration
Message ID: _____

ENTER a system message Id - CHOICES available.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-17. System Message Administration Screen

The System Message Administration screen contains the Message ID field to specify the message ID of the message you wish to modify. A message ID is a single word consisting of uppercase characters and digits which provides a reference to a system message. Enter a valid Message ID or press **(CHOICES)** to make a selection from a menu screen.

⇒ NOTE:

The CHOICES menu lists all messages currently defined in the system, but not all of the messages are used. Every message that has an accompanying description and effect statement is used; those that do not have a description and effect statement are not used. Refer to Chapter 3, "System Message Listings," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, for information on all VIS system messages currently used in the system, including the default messaging parameters.

AUDIX Voice Power messages use the range 5000 to 5500 for message numbers. For more information on AUDIX Voice Power error messages, refer to Appendix B, "Error Messages," of *AUDIX Voice Power Release 2.1.1 System Manager's Guide*, 585-310-520.

FAX messages use the range 4000 to 5300 for message numbers. For more information on FAX messages, refer to Appendix B, "System Messages," of *AT&T FAX Attendant System Release 2.1.1 System Manager's Guide*, 555-007-100.

After completing the form, press **(SAVE)** to close the screen. If you enter a valid message ID, the System Message Display screen with system message information appears (Figure 3-18). After modifications have been made you are returned to the System Message Administration screen. You may then enter a different message for modification or install the changes made so far.

System Message Display	
Message Id:	VROP003 (VROP_NOSPBUF)
Message Priority:	*
Message Destinations:	log alarm
Threshold Period:	1m
Message Thresholds:	Threshold Message Id
----- Threshold	----- THR003 (THRESH_MAJOR)
----- 20	
Message Text:	
VROP003 - - - - (VROP_NOSPBUF) No resources available on SP for speech %s. Reason: No SP window buffers.	

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-18. System Message Display Screen

The System Message Display screen contains the following information:

- The Message ID specifies a unique name for each message in the system.
- The Message Priority specifies the urgency level of the message. The Message Priority may be NONE (for none), * (for minor), ** (for major), or *C (for critical).
- The Message Destinations specifies a list of destinations where the message should be sent. By default, messages are sent to the log and either alarm (if the message is an alarm) or event (if the message is an event).
- The Threshold Period specifies the length of the message to be included in the threshold count, provided that one or more thresholds are defined for this message.
- The Message Thresholds column shows the message threshold for the corresponding Message ID in the Threshold Message ID column. Most messages will not be associated with a threshold.
- The Threshold specifies the number of messages to be generated within the Threshold Period necessary to trigger the threshold action.

-
- The Threshold Message ID specifies the Id of the message to be generated when a threshold is reached. The priority and the destinations for the threshold message should be meaningful as a thresholding action. For example, message ID VROP003 may have a priority of minor (*), its corresponding threshold message ID could be THR003 which has a major (**) priority. The generation of the THR003 message after enough VROP003 messages have been generated within the Threshold Period is the threshold action. Note that THR001, THR002, THR003, and THR004 have priorities of none (-), minor (*), Major (**), and critical (*C), respectively.
 - The Message Text is the text displayed when the message is generated. The message text may not be administered from the System Message Display screen.

The System Message Display screen with the standard function keys is displayed in Figure 3-18 on page 3-35. Note that you need to use **(CHG-KEYS)** to switch the function key display from the standard to the screen-specific set of commands or vice versa. The screen-specific function keys in the System Message Display screen perform the following functions:

- **(ADD-DEST)** adds a message destination. Refer to Figure 3-19 on page 3-37 and accompanying text for additional information.
- **(REM-DEST)** removes a message destination. Refer to Figure 3-20 on page 3-39 and accompanying text for additional information.
- **(ADD-THSH)** adds a message threshold/threshold message ID pair. Refer to Figure 3-21 on page 3-40 and accompanying text for additional information.
- **(REM-THSH)** removes a message threshold/threshold message ID pair. Refer to Figure 3-22 on page 3-41 and accompanying text for additional information.
- **(MSG-PRIO)** modifies a message priority. Refer to Figure 3-23 on page 3-42 and accompanying text for additional information.
- **(THSH-PER)** modifies the message threshold period. Refer to Figure 3-24 on page 3-43 and accompanying text for additional information.

Adding Message Destinations

The Add Message Destination screen enables you to add a new destination to the current list of destinations for the current system message. From the System Message Display screen, press **(ADD-DEST)** to open the Add Message Destination screen (Figure 3-19).

Add Message Destination	
Message Destination:	_____

ENTER a message destination - CHOICES available.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-19. Add Message Destination Screen

The Add Message Destination screen contains only one field. The Message Destination field allows you to specify the destination for the message that you wish to add. Enter a valid message destination or press **(CHOICES)** to make a selection from a menu screen. Following are valid message destinations:

- **log** — This destination specifies that all messages must be sent to log. The log contains all messages generated by the system. The contents may be examined through display messages or via the Message Log Report screen.
- **stderr** — This destination is the standard error of the process generating the message. Since most VIS processes redirect standard error to the system console, specifying this destination may result in the message being sent to the system console.
- **console** — This destination is the system console or **/dev/console**.

-
- alertPipe — This destination is a specially-named pipe for messages which should be sent directly to the alerter. The alerter pipe is used for some special VIS processes. Specification of the alerter pipe for other system messages has little or no effect on the system message facility or the alerter itself. The system is distributed with some messages specified with the alerter pipe as a destination. This destination should not be removed from the message.
 - alarm — This destination specifies that the delivered system send all alarm level messages to the alarm log (priority “*”, “**” and “*C”). The alarm log may be accessed via the display messages command or the Message Log Report screen.
 - event — This destination specifies that the delivered system send all event level messages to the event log (priority “-”). The event log may be accessed via the display messages command or the Message Log Report screen.
 - sccs — This destination can be used only when the SCCS/CompuLert Package is installed. Messages sent to sccs are sent to the appropriate SCCS/CompuLert device. If this packages is not installed, messages with this destination have no effect on the system.
 - mxmtr — This destination can be used only when the Netview Alarms package is installed. Messages sent to MXMTR are sent to the appropriate Netview Alarm device. If this packages is not installed, messages with this destination have no effect on the system.

After completing the form, press **SAVE** to save the information specified in the form and close the Add Message Destination screen specified in the form. The System Message Display screen (Figure 3-18) will display the new message destination added through the Add Message Destination screen.

Removing Message Destinations

The Remove Message Destination screen enables you to remove a destination from the current list of destinations for the current system message.

⇒ NOTE:

The log destination cannot be removed.

From the System Message Display screen, press **(REM-DEST)** to open the Remove Message Destination screen (Figure 3-20).

Remove Message Destination
Message Destination: _____

ENTER a message destination for removal - CHOICES available.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-20. Remove Message Destination Screen

The Remove Message Destination screen contains only one field.

The Message Destination field allows you to specify the destination for the message that you wish to remove. Enter a valid message destination or press **(CHOICES)** to make a selection from a menu screen.

⇒ NOTE:

The “log” message destination is not a valid choice since this destination may not be removed in the Remove Message Destination screen.

After completing the form, press **SAVE** to save the information specified in the form and close the Remove Message Destination screen specified in the form. The System Message Display screen (Figure 3-18) will display the changes made through the Remove Message Destination screen.

Adding Thresholds

The Adding Thresholds screen enables you to add a new threshold and thresholding message Id pair to the current list of thresholds for the current system message.

From the System Message Display screen, press **ADD-THSH** to open the Add Threshold screen (Figure 3-21).

Add Threshold	
Threshold: _____	
Threshold Message Id: _____	

Enter a threshold value (positive number).

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-21. Add Threshold Screen

The Add Threshold screen contains the following fields:

The Threshold field allows you to specify the number of times the message ID must occur within the specified period before a Threshold Message (described below) is generated. Enter a non-negative integer threshold value or NONE.

The Threshold Message field allows you to specify the threshold message for the threshold that you wish to add. Enter THR001 (for none), THR002 (for minor), THR003 (for major), THR004 (for critical), or press **CHOICES** to make a selection from a menu screen.

After completing the form, press **(SAVE)** to save the information specified in the form and close the Add Threshold screen specified in the form. The System Message Display screen (Figure 3-18) will display the new threshold and threshold message Id added through the Add Threshold screen.

Removing Thresholds

The Remove Threshold screen enables you to remove a threshold/threshold message Id pair from the current list of thresholds for the current system message.

From the System Message Display screen, press **(REM-THSH)** to open the Remove Threshold screen (Figure 3-22).

Remove Threshold	
Threshold:	_____

Enter a numeric threshold value (positive number).

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-22. Remove Threshold Screen

The Remove Threshold screen contains only one field:

The Threshold field allows you to specify a message threshold value for the threshold that you wish to remove. Enter a non-negative integer threshold value.

After completing the form, press **(SAVE)** to save the information specified in the form and close the Remove Threshold screen specified in the form. The System Message Display screen (Figure 3-18) will display changes made through the Remove Threshold screen.

Modifying Message Priorities

The System Message Priority screen enables you to modify a message priority.

From the System Message Display screen, press **(MSG-PRIO)** to open the System Message Priority screen (Figure 3-23).

System Message Priority	
Message Priority:	_____

Enter a message priority - Choices available.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-23. System Message Priority Screen

The System Message Priority screen contains only one field.

The Message Priority field allows you to specify a priority for the message. Enter a valid message priority or press **(CHOICES)** to make a selection from a menu screen.

After completing the form, press **(SAVE)** to save the information specified in the form and close the System Message Priority screen specified in the form. The System Message Display screen (Figure 3-18) will display the message priority modified through the System Message Priority screen.

Modifying Threshold Periods

The System Message Threshold Period screen enables you to modify the system message threshold period, or the interval of time over which messages are counted for a given threshold.

From the System Message Display screen, press **(THSH-PER)** to open the System Message Threshold Period screen (Figure 3-24).

System Message Threshold Period
Threshold Period: _____

Enter a threshold period (ex. 1h 10m).

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-24. System Message Threshold Period Screen

The System Message Threshold Period screen contains only one field.

The Threshold Period field allows you to specify a threshold period. Enter a valid message priority or press **(CHOICES)** to make a selection from a menu screen. Note that the threshold period must be entered as a time interval as follows:

{number}{dimension} [{number}{dimension}]...

(where *{number}* is a positive whole number and *{dimension}* is a character prefix of one of the following words: “w” for weeks, “d” for days, “h” for hours, “m” for minutes, or “s” for seconds). Table 3-1 provides examples of threshold periods.

Table 3-1. Threshold Period Examples

Specification	Value or Description
1s 1h	A 3601 second threshold period
2w	A 14 day threshold period
5m 30s	A 330 second threshold period
5m 3m	BAD INTERVAL — two minute specifications

After completing the form, press **SAVE** to save the information specified in the form and close the System Message Threshold Period screen specified in the form. The System Message Display screen (Figure 3-18) will display the new message priority added through the System Message Threshold Period screen.

Exiting System Message Administration

From the System Message Display, press **CANCEL** to leave the System Message Display and return to the System Message Administration screen. At this point, you may enter either a new message ID or exit. To exit and save the changes you have made, press **CHG-KEYS** and **INSTALL**. To exit without saving the changes you have made, press **CANCEL** twice.

Voice Equipment

From the Configuration Management screen, highlight Voice Equipment and press **ENTER** to open the Voice Equipment screen (Figure 3-25). You may determine whether a T1, E1, T/R, or SP card is connected to the TDM bus by looking at the Options field in the Voice Equipment screen. If the voice card is connected to the TDM bus, tdm1 will be displayed in the Options field. If the card is not connected to the TDM bus, no tdm is displayed in the Options field. In Figure 3-25 for example, the T1 Card 0 is connected to the TDM bus.

Voice Equipment																	
Card 0 is T1		O.S. Index: 0 State: Hwoos			Function: PRI Options: master1, tdm1, PRI1, DCHAN												
CD.PT	CHN	STATE	STATE-CHNG-TIME	SERVICE-NAME	PHONE	GROUP	OPTS	TYPE									
0.0	0	Hwoos	Aug 06 15:59:52	app1	—	2	tdm	PRIB									
0.1	1	Hwoos	Aug 06 15:59:52	chantst	—	2	tdm	PRIB									
0.2	2	Hwoos	Aug 06 15:59:52	call_in	—	2	tdm	PRIB									
0.3	3	Hwoos	Aug 06 15:59:52	app1	—	2	tdm	PRIB									
0.4	4	Hwoos	Aug 06 15:59:52	app1	—	2	tdm	PRIB									
0.5	5	Hwoos	Aug 06 15:59:52	app1	—	2	tdm	PRIB									
0.6	6	Hwoos	Aug 06 15:59:52	app2	—	2	tdm	PRIB									
0.7	7	Hwoos	Aug 06 15:59:52	chantst	—	2	tdm	PRIB									
<table border="1"> <tr> <td>HELP</td> <td>PREVPAGE</td> <td>NEXTPAGE</td> <td>PREV-FRM</td> <td>NEXT-FRM</td> <td>CANCEL</td> <td>CMD-MENU</td> <td>CHG-KEYS</td> </tr> </table>										HELP	PREVPAGE	NEXTPAGE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
HELP	PREVPAGE	NEXTPAGE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS										

Figure 3-25. Voice Equipment Screen

The Voice Equipment screen displays all channels currently in the VIS. Information displayed in the Voice Equipment screen includes:

- Channel number
- Channel card and port
- Channel state
- Time of last state change
- Associated service name
- Phone number
- Group number
- Options
- Card type

⇒ NOTE:

The speech on the TDM bus may be determined by reference to the OPTS (options) field. If a T/R card is using the SP card to do voice coding and playback, the tdm option will appear in the OPTS field of the Voice Equipment screen (Figure 3-25). Otherwise, talk would appear in the OPTS field, indicating that the card is not using the bus for voice coding and playback.

⇒ NOTE:

The OPTS (options) field must specify tdm1 before you may assign a TDM option to a channel.

Displaying Options

You can tailor the voice equipment report in two ways. You can display only a limited channel group or an equipment group. The values specified most recently will be saved to a file and used again in the Voice Equipment screen, until new options are specified. By default, information on all channels is displayed.

⇒ NOTE:

In the standard display, with the GROUP column last, only the first seven characters in that field are displayed. For example, a channel may be assigned to groups "1,2,3,4,5,6,7,8,9,10" but the GROUP column only displays "1,2,3,4."

If there is a channel with more groups assigned to it than are shown, use the Options For Voice Equipment Display screen to display by group. This display will show all groups for a channel, regardless of how many there are.

If you wish to change the display settings, press **(DISP-OPT)** to open the Options For Voice Equipment Display screen (Figure 3-26).

⇒ NOTE:

For cards not connected to the TDM bus, the card should have master1 in the OPTS field. For cards connected to the TDM bus (that is, TDM1 is displayed in the OPTS field of the Voice Equipment screen) there should be not more than one master1, one master2, and one master3. All remaining cards with the TDM1 option will be assigned slave. Note that master and slave assignments are performed automatically by the system and these assignments are not configurable by the user.

⇒ NOTE:

You may determine which T/R or T1 or E1 card is serving as master of the TDM bus from the Options for Voice Equipment Display screen in the following manner: the T/R card serving as master is connected to the bus and has the highest priority master (that is, if master1 is not broken, it supplies clock, otherwise master2 supplies clock, etc).

Options For Voice Equipment Display	
Equipment:	card
Equipment Number:	1, 3-5
Equipment Type:	t1
State:	inserv
Service :	

Enter card, channel, or group.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-26. Options For Voice Equipment Display Screen

Equipment

This field enables you to limit the voice equipment display to cards, channels, or equipment groups. This field is required, therefore, you must enter a value here. The valid entries are card, channel, and group. Type your selection or press **CHOICES** to choose from a menu screen.

Figure 3-26 uses card as the equipment specification. The default value is channel. Type your selection or press **CHOICES** to choose from a menu screen.

Information on SP cards and their associated CMPs is displayed only when the option card is selected (SP cards do not have channels associated with them). Information displayed with the channel and card options are almost identical. However, the latter explains the version of software running on each card (in the FUNCTION field), card options, and the card's O.S. Index (dip switch setting). If the card is a T1 or E1 or T/R, the card option also shows all channel information (with the first two columns in the order "CHAN", then "CD.PT").

If the card is an SP, all associated CMP information is displayed. CMP information includes the O.S. Index (dip switch setting) and the state of each card. There are three possible states for the CMPs. Inserv means that the CMP has passed diagnostics. Not_diag means that the card is present but has not been diagnosed. Broken means that the card did not pass diagnostics. Diagnosing an SP with speech recognition functionality is the only way to diagnose the CMPs.

When a card is removed physically and the VIS is brought up, the card and the corresponding channels are labeled Nonex (non-existent). The display does not show these cards or their channels. When a Nonex card is plugged in and the VIS is brought up, the system recognizes that the card is present and marks the card and the corresponding channels Manoos (manual out-of-service). Be sure to diagnose and restore the card to the Inserv (in service) state.

Equipment Number

The Equipment Number field specifies a certain equipment number range to be displayed. Type in a single card or channel number, or a range of numbers, separated by commas or spaces.

This is not a required field. If left blank, the *all* value is used.

Equipment Type

If you will be specifying an equipment type, choose from either T/R, T1, E1, or SP. Note that SP is for “card” equipment.

Equipment Type is not a required field. If left blank, all equipment types will be displayed. Press **CHOICES** to make a selection from a menu screen.

State

This field limits the voice equipment display to channels in a particular state. The following is a list of the various channel states:

- broken — This state indicates the channel is broken (for example, a possible malfunction detected on analog line).
- foos — This state indicates the facility is out-of-service (that is, communication link from the card to the switch is not operating properly). Calls cannot take place over channels in these states until the problem is corrected. Refer to Chapter 2, “Trouble and Failure Indications,” of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, for additional information.
- hwoos — This state indicates the hardware is out-of-service. This is valid for ASAI and PRI channels only. Channel cannot be logged in because digital link is not operating. Refer to Chapter 2, “Trouble and Failure Indications,” of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, for additional information.

-
- **inserv** — This state indicates the channel is in service (that is, it is operating properly).
 - **manoos** — This state indicates the channel is manually out-of-service (that is, the channel has not been placed into service and will not take calls until it is placed into service). You may place the channel into service by using the **restore channel** command. Refer to *CONVERSANT VIS Version 4.0 Command Reference*, 585-350-209, for additional information.
 - **netoos** — This state indicates the network is out-of-service. This state is valid for ASAI and PRI channels only. Refer to Chapter 2, "Trouble and Failure Indications," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, for additional information.

Type the desired channel state or press **CHOICES** to make a selection from a menu screen. This is not a required field. If left blank, all states will be displayed.

Service

This field limits the voice equipment display to channels associated with a particular service. This field is valid only if the Equipment field is channel. Service is not a required field. If left blank, the VIS will not restrict its display to any one service.

If you wish to restrict the display to a service, type in the service name or *DNIS_SVC. Press **CHOICES** to make a selection from a menu screen. After completing the form, press **SAVE** to close the screen and execute the options specified. To display the new options, press **DISP-OPTS** again.

Changing Maintenance State of a Channel

You may change the maintenance state of a channel with the **CHGSTATE** key.

Note that changing the state means that some maintenance task is being performed. Channels cannot be changed to a broken state. Valid state changes are:

- Manual out-of-service to in service
- In service to manual out-of-service
- Facility out-of-service to manual out-of-service
- Broken to manual out-of-service
- Hardware out-of-service to manual out-of-service
- Network out-of-service to manual-out-of-service

⚠ WARNING:

You should change the state of an SP card to manoos only when there are no active calls on the VIS as changing the state of an SP card to manoos will either disrupt voice playback on all channels (if only one SP card is installed) or affect voice playback performance on channels (if more than one SP card is installed).

From the Voice Equipment screen, press **CHGSTATE** to display the Change State of Voice Equipment screen (Figure 3-27).

Change State Of Voice Equipment	
New State:	<u>inserv</u>
Equipment:	<u>card</u>
Equipment Number:	<u>3-5</u>
Change Immediately:	<u>yes</u>

Enter inserv or manoos (manual out of service).

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 3-27. Change State of Voice Equipment Screen

New State

The New State field specifies the state to which the designated channels should be changed. This is a required field. Therefore, a value must be placed in this field to properly execute the change state procedure.

Valid choices are inserv (in service) and manoos (manual out-of-service). Type your state selection or press **CHOICES** to choose from a menu screen.

Equipment

Specify the type of equipment on which you wish to change the state. This field is required, therefore a value must be filled in, either card or channel. Figure 3-27 uses card as the equipment specification. Type in your selection or press **CHOICES** to choose from a menu screen.

Equipment Number

The Equipment Number field specifies the equipment number or range of numbers that will have their state changed. Type in a single card or channel number or a range of numbers, separated by commas or spaces. The all value is also a valid choice.

Change Immediately

If you wish to have the state change take effect immediately, instruct the VIS to do so in this field. Note that if you specify yes in this field, any active calls on the specified lines will be disconnected abruptly. This is not a required field and if left blank, the no value is used. Using no in this field means that the card or channel state changes after all current calls end. Note that the changes may not be displayed immediately because of this.

After completing the form, press **SAVE** to close the screen and execute the options specified.

Changing Maintenance State of Channels Suggestions

The following are hints that may help you in avoiding problems with channels.

Manual Out of Service T1 Channels Using Line Side T1 Protocol

Certain switches, or switch configurations, cannot remove a large number of channels from service in a timely manner. Therefore, a delay has been added to the `/vs/data/mtc.rc` file to change the time between taking a channel out of service and taking the next channel out of service for a T1 card using Line Side T1 protocol.

To change this delay for a card using Line Side T1 protocol, add or modify the following line in the `/vs/data/mtc.rc` file:

```
LST1_D_REMOVE_DELAY=xxx
```

where `xxx` is the amount of delay in msec. The default is 200 msec (2 seconds).

Manual Out of Service T1 Channels Using E&M Protocol

The following suggestions apply only to individual manoos T1 channels using the E&M protocol. Other T1 protocols provide the ability to remove individual channels from service.

At times you might wish to limit the number of calls that can be handled by removing only some of the T1 channels from service. However, this can result in unexpected results if the hunting pattern used by the switch is not appropriate. The E&M protocol does not allow you to remove individual channels from service; that is, a switch using the E&M protocol does not recognize that an individual channel is in a manoos state and will continue to route calls to those channels. The VIS will return a busy signal to the caller if the switch directs the call to a manoos channel.

For some hunt groups (for example, hunt groups using a round-robin pattern for new call delivery), this type of performance is not desirable. With this type of delivery pattern, the switch will route a new call to the next channel in the hunt group. When the switch reaches the end of the group, it will start at the beginning. Consequently, the caller may receive a busy signal even though there may be other idle channels that are in service.

Ideally, the switch should use all inserv channels before using any manoos channels. You may force the switch to use inserv channels before using manoos channels by requesting a switch hunting pattern that always scans for idle channels starting at the beginning of the hunt group. On a 4ESS for example, this can be achieved by requesting a "trunk hunt without memory." You can then limit the number of simultaneous incoming calls by placing the least-used channels (that is, channels at the end of the hunt group) into the manoos state. In this manner, only if all inserv channels are being used will a new call be routed to a manoos channel.

Manual Out of Service T1 or E1 Card (All T1 Channels are Manoos)

When all channels on a T1 card are in the manoos state, the card will generate a BLUE alarm to the switch, preventing calls from being routed to any of the channels on that T1 card.

Manual Out of Service T/R Card

Certain switches, or switch configurations, can not remove a large number of channels from service in a timely manner. Therefore, a delay has been added to the **/vs/data/mtc.rc** file to change the time between taking a channel out of service and taking the next channel out of service for a T/R card.

To change this delay for a T/R card, add or modify the following line in the **/vs/data/mtc.rc** file:

TIP_RING_REMOVE_DELAY=xxx

where xxx is the amount of delay in msec. The default is 0 msec.

Assigning

Use **ASSIGN** to display a menu of possible assignments you can make. From the Voice Equipment screen, press **ASSIGN** to display the Assign menu. Choices in this menu include:

- Channels to Groups
- Channel to PBX Extensions
- Functions to SP Cards
- Services to Called Numbers
- Services to Channels

Assigning Channels to Equipment Groups

Use **ASSIGN** to assign channels to an equipment group or groups. From the Voice Equipment screen, press **ASSIGN** to display the Assign form. At the Assign screen, highlight Channels to Groups and press **ENTER** to display the Assign Channels to Groups form (Figure 3-28).

Assign Channels to Groups	
Channels :	<u> 0-4 </u>
Groups :	<u> 0,31 </u>

Enter a number or a range (e.g. 0-2 or 0,1,2 or the word 'all')

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 3-28. Assign Channels to Groups Screen

Channels

Specify the channel or range of channels that you wish to assign to equipment groups. Type a single channel number or a range of channel numbers, separated by commas or spaces. The all value is also a valid choice. Note that all will assign all channels to the equipment groups specified in the Groups field.

Figure 3-28 uses the channel range 0–4, meaning channels 0–4 should be assigned to the specified equipment groups.

Groups

Specify the equipment group or groups to which you want to assign the channels. Type a single equipment group number, or a range of equipment group numbers, separated by commas or spaces. Valid equipment group numbers are 0–30. Equipment group 31 is a reserved group.

Equipment group 31 is used to specify channels that the system should ignore when it executes a soft seizure (**soft_sZR**) command. This allows you to mark certain channels as not being in the channel group specified by a soft seizure request on “any channel, any equipment group”. In other words, if a channel is assigned to equipment groups 0 and 31, it is only considered for soft seizures that specifically request equipment group 0.

After completing the form, press **SAVE** to close the screen and execute the options specified.

Unassigning Channels from Groups

Use **UNASSIGN** to unassign channels from equipment groups. From the Voice Equipment screen, press **UNASSIGN** to display the Unassign form. Highlight Channels From Groups, then press **ENTER** to display the Unassign Channels From Groups screen (Figure 3-29).

Unassign Channels From Groups	
Channels :	<u>0-4</u>
Groups :	<u>0,31</u>

Enter a number or a range (e.g. 0-2 or 0,1,2 or the word 'all')

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 3-29. Unassign Channels From Groups Screen

Channels

Specify the channel or range of channels that you wish to unassign from the specified equipment groups. Type a single channel number or a range of channel numbers, separated by commas or spaces. The all value is also a valid choice. If all is used, all channels currently assigned to the specified equipment groups will be unassigned.

Figure 3-29 has channels 0–4 being unassigned from equipment groups “0” and “31.”

Groups

Specify the equipment group or groups from which you want to unassign the channels. Type a single equipment group number, or a range or equipment group numbers, separated by commas or spaces. Valid equipment group numbers are 0–30 with equipment group 31 as a reserved group.

After completing the form, press **SAVE** to close the screen and execute the options specified.

Assigning Channels to PBX Extensions

You may use **ASSIGN** to assign only an ASAI or AUDIX Voice Power channel to a PBX Extension. From the Voice Equipment screen, press **ASSIGN** to display the Assign form. At the Assign screen, highlight Channel to PBX Extension and press **ENTER** to display the Channel to PBX Extension form (Figure 3-30).

⇒ NOTE:

Assignments made in the Channel to PBX Extension screen will overwrite any PBX assignments currently in effect on the specified channel. You should therefore be careful when assigning and reassigning voice channels to a PBX extension.

Channel to PBX Extension	
PBX Extension :	<u>1234567</u>
Channel:	<u>1</u>

Enter phone number, up to 7 digits.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 3-30. Assign Channel to PBX Extension Screen

PBX Extension

Specify the phone number to which you want to assign the channel. Type up to seven digits for the phone number.

Channels

Specify the channel that you wish to assign to the PBX Extension. Type a single channel number in this field.

Figure 3-30 has channel 1 being assigned to PBX extension 1234567.

Unassigning PBX Extensions from Channels

The ASSIGN key may also be used to unassign PBX Extensions from Channels. From the Voice Equipment screen, press **ASSIGN** to display the Assign form. At the Assign screen, highlight Channel to PBX Extension and press **ENTER** to display the Channel to PBX Extension screen (Figure 3-30).

PBX Extension

Specify a null PBX extension number to which you want to unassign the channel.

Channels

Specify the channel from which you want to unassign service. Type a single channel number in this field.

After completing the form, press **SAVE** to close the screen and execute the options specified.

Assigning Functions SP Cards

Use **ASSIGN** to assign functions to SP cards as well as to change the current functions assigned to SP cards. From the Voice Equipment screen, press **ASSIGN** to display the Assign form. At the Assign screen, highlight Functions to SP Cards and press **ENTER** to display the Assign Functions To SP Cards form (Figure 3-31).

⇒ NOTE:

The SP card must be in the manoos state before functions may be assigned to it. Note that assignments made in the Assign Functions to SP Cards screen will overwrite any other assignments currently in effect on the specified cards. You should therefore be careful when making assignments and reassignments.

Assign Functions to SP Cards
Function : <u>VOICE</u>
Card No(s) : <u>5-6</u>

Select the desired function from CHOICES key.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 3-31. Assign Functions to SP Cards Screen

Function

Choices for this field are WW_RECOG, SW_RECOG, CCA, PRI, TTS, spTTS, VOICE, VOICE+SW_RECOG, and VOICE+WW_RECOG depending on the software packages installed on the system.

⇒ NOTE:

To use PRI, you must assign PRI to an SP before you select the PRI protocol for a T1 or E1 card. Refer to Chapter 5, "Switch Interface Administration", for additional information. When the PRI protocol is selected for a T1 or E1 card, the system checks to see if an SP card has been assigned the PRI function. If it has not, the PRI protocol is not loaded onto the T1 or E1 card.

If the PRI protocol is assigned to any T1 or E1 cards, the PRI function must be assigned to one SP card. The system will not change the function PRI on an SP card unless there is no T1 or E1 card to which the PRI protocol is assigned or there is at least one other SP card to which the PRI function is assigned.

Card Numbers

Specify the card or range of cards to which you wish to assign functions. Type a single card number or a range of card numbers, separated by commas or spaces.

Figure 3-31 has VOICE being assigned to cards 5–6.

Assigning Services to Called Numbers

The table displayed for assigning service to called number lists all DNIS numbers and their corresponding services.

⇒ NOTE:

You can have one or more numbers associated with the same service, but only one service associated with each number.

From the Voice Equipment screen, press **(ASSIGN)** In the Assign menu, highlight Services to Called Numbers and press **(ENTER)** to display the Assign Service to Called Numbers screen (Figure 3-32).

Assign Service to Called Number	
SERVICE NAME	CALLED NUMBER
chantst	6643
flash	9525
flash	2203
chantst	1234
cust_serv01	1235
cust_serv01	1236
cust_serv02	9062
cust_serv03	9000

HELP	PREVPAGE	NEXTPAGE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 3-32. Assign Service to Called Numbers Screen

Adding Service

If you wish to incorporate additional services, press **(ADD)** to open the Add Service to Called Number screen (Figure 3-33).

Add Service to Called Number	
Service name to be added:	_____
Corresponding Called number:	_____

Enter an existing service name.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-33. Add Service to Called Number Screen

Complete the form by entering the service name and the corresponding telephone number. The telephone number cannot be longer than 16 digits. Type your own selections or press **(CHOICES)** to choose from a menu screen. Press **(SAVE)** after you fill in the screen to save the information to memory.

Removing Service

If you wish to remove a service, press **(RE-)** in the Assign Service to Called Number screen. In the form that appears, enter the telephone number, then press **(SAVE)** to store the information in memory.

If you have already removed an application and you wish to remove a service and DNIS number from a DNIS table, you must first copy the **.T** file of an installed application in the **/vs/trans** directory to a **.T** file with the name of the application to be removed. The service and DNIS number may then be removed from the DNIS table.

Assigning Services to Channels

At the Assign screen, highlight Services to Channels and press **ENTER** to display the Assign Service To Voice Channels screen (Figure 3-34).

⇒ NOTE:

Assignments made in the Assign Service To Voice Channels screen will overwrite any other assignments currently in effect on the specified channels. Take care when making voice channel assignments and reassignments. Keep in mind also when assigning service to channels that when an SP reaches full capacity, any calls coming into the card will hear “ring no answer.”

Assign Service To Voice Channels
Service : <u>feature_tst</u>
Channels : <u>5-7</u>

Enter an existing service name or *DNIS_SVC to mark DNIS channels.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-34. Assign Service to Voice Channels Screen

⇒ NOTE:

If the AUDIX Voice Power application is installed on your system, keep in mind that AUDIX Voice Power is only supported for up to 12 channels. You should not assign AUDIX Voice Power scripts to T1 or E1 channels. Refer to Chapter 2, “Feature and Planning Review,” of *AUDIX Voice Power R2.1.1 System Manager’s Guide*, 585-310-520, for additional information on assigning services to channels.

If the AUDIX Voice Power application is installed on your system, you may assign AUDIX Voice Power services to channels from the Assign Service to Voice Channels screen. AUDIX Voice Power services available for assignment include:

- Automated Attendant Service (auto_attend) directs callers through a series of prompts to the desired extension. If there is no answer or the line is busy, the caller can try another extension.
- Call Answer Service (call_answer) allows a caller to either leave a message or transfer to another extension when the original extension has failed to answer (that is, no answer or the line is busy).
- Information Service (info_service) provides a customer oriented call-in information line. The caller will hear a message and then be disconnected. The message might be similar to, "I'm sorry, Acme Manufacturing is not open now. Our normal business hours are nine to five, Monday through Friday, except holidays."
- Message Drop Service (message_drop) is similar to an answering machine in that it is used for callers to leave a message, and callers can not direct their messages to specific extensions.
- Voice Mail Service (voice_mail) allows subscribers to send messages to other subscribers in the system, retrieve their own messages, and administer their greeting message, name phrase, and password.

Refer to Chapter 3, "Administering AUDIX Voice Power," of *AUDIX Voice Power R2.1.1 System Manager's Guide*, 585-310-520, for additional information on administering these AUDIX Voice Power services.

Service

This is a required field and therefore must be filled in to assign service properly to the designated channels. Type your service selection or press **(CHOICES)** to choose from a menu screen. Valid choices include any service which can be assigned to the voice equipment.

If the channels to which you are assigning service are T1 or E1 or PRI channels, you may want to specify *DNIS_SVC as the service. *DNIS_SVC is not a service name; instead, it serves as a flag, reminding you to refer to the Assign Service to Called Numbers screen (Figure 3-33) for the service assigned to the specified channels.

Figure 3-34 has service assigned to feature_tst (feature test).

Channels

Specify the channel or range of channels to which you wish to assign service. Type a single channel number or a range of channel numbers, separated by commas or spaces. The all value is also a valid choice. Note that all will assign the service specified in the Service field to all channels in the VIS.

⇒ NOTE:

If you are using the Primary Rate Interface Feature, avoid assigning any service to the D (data) channel. If you are using the PRI feature, you may still assign service to B (bearer) channels.

Figure 3-34 uses the channel range 5–7, meaning feature_tst service should be assigned to channels 5 through 7.

After completing the form, press **SAVE** to close the screen and execute the options specified.

Unassigning Service from Voice Channels

Use **UNASSIGN** to unassign service from voice channels. From the Voice Equipment screen, press **UNASSIGN** to display the Unassign form (Figure 3-35).

Unassign
Channels from Groups Services from Channels

Highlight an item and press Enter.

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 3-35. Unassign Screen

Highlight Service from Channels, then press **ENTER** to display the Unassign Service From Channels screen. Figure 3-36 shows the Unassign Service From Voice Channels screen with service being unassigned from channel 4.

Unassign Service From Voice Channels
Channels : <u>4</u>

Enter a valid number or range (e.g. 0-2 or 0,1,2 or 0 1 2 or 0,2-4 or 'all')

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 3-36. Unassign Service from Voice Channels Screen

Channels

Specify the channel or range of channels from which you want to unassign service. Type a single channel number or a range of channel numbers, separated by commas or spaces. The all value also is a valid choice. If all is used, service will be unassigned from every channel in the VIS.

After completing the form, press **SAVE** to close the screen and execute the options specified.

Changing Voice Equipment Options

You may change the options for voice equipment by pressing (EQPT-OPT) in the Voice Equipment screen. The Change Options of Voice Equipment form appears (Figure 3-37).

Change Options of Voice Equipment	
Talk-tdm:	_____
Equipment:	_____
Equipment Number:	_____

Enter talk or tdm.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 3-37. Change Options of Voice Equipment Screen

Talk-tdm

You may select either talk or tdm for a voice channel. If the talk option is selected, that card is used for speech processing. If the tdm option is selected, the SP card is used for speech processing. For T1 or E1 and VRS6 Tip/Ring cards, the only valid option is tdm. For IVP4 and IVP6 Tip/Ring cards, the option can be either talk or tdm.

⇒ NOTE:

If background speech (or music) is being used by any VIS application, the setting of a channel to talk or tdm in the Change Options of Voice Equipment screen makes a difference in how the background speech is heard. If the channel is set to tdm, background speech continues to play when normal, "foreground" speech is played. (Background speech is played at a lower volume so foreground speech may be heard easily over it.) If the channel is set to talk, background speech is interrupted while foreground speech is playing.

T1 or E1 and VRS6 T/R cards are always set to tdm.

Equipment

The choices for this field are card or channel. If you specify a voice card, the option is changed for all the channels on the cards selected.

Equipment Number

This field allows you to select the voice cards or channels for which the option is to be changed. The default value is all.

After you enter the desired values to change the options, press to put the changes into effect.

Voice Equipment Print Option

To obtain a complete printout of the voice equipment report, simply press from the Voice Equipment screen. Make sure the VIS has all the proper printer connections. Refer to Appendix A, "FACE Features", for additional information on how to establish printer operations.

Reports Administration Overview

While working with the CONVERSANT Voice Information System (VIS), you often will want 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 VIS call classification reports, call data detail reports, call data summary reports, message log reports, and traffic reports. In addition, if AUDIX Voice Power R2.1.1 is installed on your system, the Reports Administration screen gives you access to AUDIX Voice Power reports. Depending on the amount of detail you wish each report to contain, the VIS enables you to tailor each report to your needs and specifications.

⇒ NOTE:

Generating reports can consume a significant amount of system resources, negatively impacting system performance. It is recommended that you run reports during non-peak hours.

⇒ NOTE:

If messages such as `System(): errno 10; 'No child processes...'` appear or if the system displays the `... working` message for a long period of time, the data that you have requested may require more memory space that is currently available. Try to select a subset of data in the options screens or by using the associated command line entry. Refer to *CONVERSANT VIS Version 4.0 Command Reference*, 585-350-209, for display messages and report options.

From the CONVERSANT VIS VERSION 4.0 screen, highlight Voice System Administration and press **(ENTER)**. From the Voice System Administration screen, highlight Reports and press **(ENTER)** to open the Reports Administration screen (Figure 4-1).

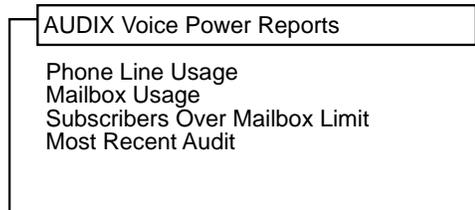
Reports Administration
AUDIX Voice Power Reports System Reports

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 4-1. Reports Administration Screen

AUDIX Voice Power Reports

From the Reports Administration screen, highlight AUDIX Voice Power Reports and press **ENTER** to open the AUDIX Voice Power Reports screen (Figure 4-2).



Press arrow keys to highlight item, then CHG-KEYS to DISPLAY or PRINT.

HELP			PREV-FRM	NEXT-FRM	CANCEL		CHG-KEYS
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Figure 4-2. AUDIX Voice Power Reports Screen

The AUDIX Voice Power Reports screen contains the following types of AUDIX Voice Power reports:

- Mailbox usage
- Most recent audit
- Phone line usage
- Subscribers over mailbox limit

Refer to Chapter 6, "Generating Reports," of *AUDIX Voice Power R2.1.1 System Manager's Guide*, 585-310-520, for detailed information on AUDIX Voice Power reports.

System Reports

From the Reports Administration screen, highlight System Reports and press **(ENTER)** to open the System Reports screen (Figure 4-3).

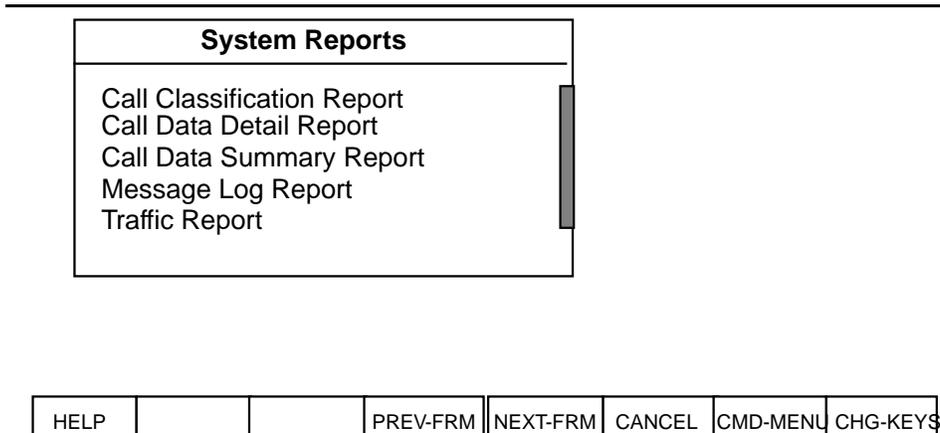


Figure 4-3. System Reports Screen

The System Reports screen contains five report types for call data report information:

- The Call Classification Report provides information for each extension or number dialed, the total number of calls, and the number of transfer attempts for a specified date.
- The Call Data Detail Report provides in depth information on each call, referred to as a "record," to the system.
- The Call Data Summary Report provides an hourly summary regarding calls made to the VIS.
- The Message Log Report provides access system messages from the VIS.
- The Traffic Report provides information on the amount of call traffic on the system.

⇒ NOTE:

If you believe data may have been lost in some of the call and message reports, refer to "Performance Considerations" in Appendix E, "Performance Information", for possible causes and solutions.

Call Classification Report

The Call Classification Report screen provides information for each extension or number dialed, the total number of calls, and the number of transfer attempts for a specified date. Data is specified in individual columns with headings. Information is maintained in the VIS for approximately 365 days.

From the System Reports screen, highlight Call Classification Report and press **(ENTER)** to open the Call Classification Report screen. The Call Classification Report screen appears with no report information until **(DISPLAY)** is pressed. Figure 4-4 shows an example of the Call Classification Report screen with actual report data information displayed.

The report displayed is based on the last set of options saved to the VIS. Refer to the information under "Call Classification Options" on page 4-6 in this chapter for more information on how to establish option settings.

Call Classification Report									
Dialed Number	Attempts				Class	Answer	Busy	Ring	Other
	Total	Failed	Unclass						
6148653219	2807	0	2807	0	0	0	0	0	
3025923443	2100	0	302	1798	1613	100	80	5	
Total	4907	0	3109	1798	1613	100	80	5	
Percent	100	0	63	37	33	2	2	0	

OPTIONS	DISPLAY				PRINT	FRM-MGMT	CHG-KEYS
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Figure 4-4. Call Classification Report Screen

Information displayed in the Call Classification Report screen includes:

- Dialed Number specifies the phone number from the transfer attempt; phone numbers have a 16-digit maximum, however only 12 digits are displayed in the report; longer numbers are truncated and indicated by an asterisk (*).
- Total specifies the total transfer attempts to the "Dialed Number."
- Failed specifies the number of transfer attempts that failed because no dial tone was detected or no energy was detected.
- Unclass specifies the number of blind transfer attempts.
- Class specifies the number of intelligent transfer attempts.
- Answer specifies the number of transfer attempts that were answered.
- Busy specifies the number of transfer attempts that were busy.
- Ring specifies the number of transfer attempts that rang with no answer.
- Other specifies the number of times network is busy and cannot complete a call (fast busy).
- Total specifies the sums of each column.
- Percent specifies the percentage of the Total.

Call Classification Options

With **[OPTIONS]** in the Call Classification Report screen, you can specify the date(s) for which you want call classification report information. Press **[OPTIONS]** to open the Options for Call Classification Report screen (Figure 4-5).

Options for Call Classification Report	
Today:	—
OR	
Start Date (mm/dd/yy):	<u>03</u> / <u>01</u> / <u>92</u>
End Date (mm/dd/yy):	<u>03</u> / <u>31</u> / <u>92</u>

Enter 'yes' to obtain today's data only. Otherwise, enter 'no'.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 4-5. Options for Call Classification Report Screen

Today

The Today field allows you to specify whether you wish to obtain a report for the current day. Type y for yes, n for no, or press **(CHOICES)** and make a selection from a menu screen.

If you entered **yes** in the Today field, press **(SAVE)** to close the screen and save the information to memory. If you entered **no** for this field, you must move to the next field and specify a start and end date.

Start and End Dates

Start and end dates limit the call classification report to a certain date range. Figure 4-5 on page 4-6 uses the start date of 03/01/92 and an end date of 03/31/92. This means that the VIS will provide call classification report information on calls made in the month of March, 1992. You can specify a range up to the last 365 days, including the current date. If only one date is specified, either start or end date, you will receive a report only for that day.

To enter start and end dates, use the format of "mm/dd/yy" for month, day, and year. If the year (yy) has not been specified, the current year is used.

The end date must be greater than or equal to the start date (for example, you cannot specify an end date of 04/10/92 and have a start date of 04/11/92). In addition, future start and end dates are invalid and will be rejected by the VIS.

After you have filled in the Options for Call Classification Report screen, press **(SAVE)** to close the form and save it to memory. The VIS returns to the previously displayed call classification report. You must press **(DISPLAY)** to bring up the new call classification report specified by your options.

Call Classification Print Option

To obtain a complete printout of the call classification report, press **(PRINT)** from the Call Classification Report screen. The version that is printed is based on the current set of options specified for call classification. Make sure the VIS has all the proper printer connections. Refer to Appendix A, "FACE Features", for information on how to establish printer operations.

Call Data Detail Report

The Call Data Detail Report keeps track of the calls made to the VIS within the last 7 days. This report provides in depth information on each call, referred to as a "record," to the system. Information provided includes the duration of the call, service being run on the call, and the channel that received the call.

From the System Reports screen, highlight Call Data Detail Report and press **ENTER** to open the Call Data Detail Report screen. The Call Data Detail Report screen appears with no report information until **DISPLAY** is pressed. Figure 4-6 shows an example of the Call Data Detail Report screen with report information displayed. Call data field information (Event Data) is included in Figure 4-6.

The report displayed is based on the last set of options saved to the VIS. Refer to the information under "Call Data Detail Options" on page 4-9 in this chapter for more information on how to establish option settings.

Call Data Detail Report				
CALL DATA DETAIL REPORT				
Record	Start	Duration	Channel	Service
1	4:32:03pm(2/02/92)	194	13	flash
	<u>Event Description</u>	<u>Event No.</u>	<u>Value</u>	
	min_host_time	0	0	
	max_host_time	1	0	
2	4:28:21pm(2/02/92)	178	13	spadm
	<u>Event Description</u>	<u>Event No.</u>	<u>Value</u>	
NO DATA FOUND				

OPTIONS	DISPLAY				PRINT	FRM-MGMT	CHG-KEYS
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Figure 4-6. Call Data Detail Report Screen

Information displayed in the Call Data Detail Report screen includes:

- Record specifies the record number of each call made to the VIS.
- Start specifies time the call began.
- Duration specifies the length of call in minutes and seconds.
- Channel specifies the channel on which call was made.
- Service specifies the script that was associated with the call.
- Event Data specifies the call data fields.
- Event Description specifies the name of the call data field.
- Event No. specifies the identifying number for each call data message.
- Value contains the event value for each specific call.

Call Data Detail Options

With **(OPTIONS)** you can tailor your call data detail report to specify the number of call records you wish to see for a particular date. Press **(OPTIONS)** to bring up the Options for Call Data Detail Report screen (Figure 4-7).

Options for Call Data Detail Report	
Number of Call Records:	<u>1-100</u>
Date (mm/dd/yy):	<u>04/19/92</u>
Service:	<u>spadm</u>
Include Call Data Fields?	<u>no</u>

Enter a number or range of records to be searched. Otherwise enter 'all'

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 4-7. Options for Call Data Detail Report Screen

Number of Call Records

This field specifies the most recent number of records to be searched. Enter a single number, a number range, or the word all. The all value indicates that all records should be searched.

Figure 4-7 uses “1–100” as the number range. This instructs the VIS to look for the most recent record (1) up to the hundredth most recent record (100).

NOTE:

The Number of Call Records and Date fields function independently of each other; that is, if you search for a specified number of records (you do not specify all) in the Number of Call Records field, the call data report will search only the most recent specified number of records and, from that set of records, display those records that match the specified date and service. Assume, for example, that the report contains 10 records for yesterday and 10 records for today. If you enter 6 in the Number of Call Records field and enter yesterday's date in the Date field, the call data detail report will display no records. This is because the last six records were created for the current day (not for yesterday's date).

However, if you select to display all in the Number of Call Records field and enter yesterday's date, the call data detail report will search call records in the database and display only the records from yesterday.

Date

This field enables you to obtain records for a particular date. For example, entering “04/19/92” specifies that you wish to search the call data detail report for calls made on April 19, 1992.

Use the format of “mm/dd/yy” for month, day, and year. If no year (yy) is specified, the current year is used. If the entire Date field is left blank, the all value is used. The all value indicates that the system should not limit its search to any particular date.

Service

This field allows you to limit your search to a particular service associated with the specified number of call records. Use any valid service name, including a service not available from the CHOICES screen. If the service entry is left blank, the all value is used. This means that the VIS should not limit its search to any particular service.

Include Call Data Fields

If you answer yes to this field, Event Data output will appear in the Call Data Detail Report screen. If Event Data exists for a particular record, this information will appear immediately following the record entry in the Call Data Detail Report screen. The following is included in the Event Data information:

- Event Description is the name of the call data field.
- Event No. is the identifying number for each call data message.
- Value contains the event value for each specific call.

Figure 4-6 on page 4-8 displays the Event Data available for Record 4.

To specify whether you want to include call data fields information in the call data detail report, type **y** for yes, **n** for no, or make a selection from the CHOICES screen. The default value for this field is no.

After you have filled in the Options for Call Data Detail Report screen, press **(SAVE)** to close the form and save it to memory. The VIS returns to the previously displayed call data detail report. You must press **(DISPLAY)** to bring up the new call data detail report specified by your new options.

Call Data Detail Print Option

To obtain a complete printout of the call data detail report, press **(PRINT)** from the Call Data Detail Report screen. The version that is printed is based on the current set of options specified for the call data detail report. Make sure the VIS has all the proper printer connections. Refer to Appendix A, "FACE Features", for information on how to establish printer operations.

Call Data Summary Report

The Call Data Summary report gives an hourly summary regarding calls made to the VIS. This report is similar to the Call Data Detail Report, except the Call Data Summary Report reports the calls on an hourly basis by service. Approximately seven days worth of data is maintained in the VIS.

⇒ NOTE:

Call data summary information is prepared at midnight for the entire day. Therefore, call data summary information for the day is not available until after midnight (that is, it is not available until the next day).

From the System Reports screen, highlight Call Data Summary Report and press **(ENTER)** to open the Call Data Summary Report screen. The Traffic Report screen appears with no report information until **(DISPLAY)** is pressed. Figure 4-8 shows an example of the Call Data Summary Report screen with actual report data information displayed.

The report displayed is based on the last set of options saved to the VIS. Refer to the information under "Call Data Summary Options" on page 4-13 in this chapter for more information on how to establish option settings.

Call Data Summary Report			
Period	Service	Average Holdtime	Calls
4:00am - 5:00am(2/07/92)	chantst	0:04	1
3:00am - 4:00am(2/07/92)	chantst	0:03	1
2:00am - 3:00am(2/07/92)	flash	0:06	1
1:00am - 2:00am(2/07/92)	spadm	0:08	2

OPTIONS	DISPLAY				PRINT	FRM-MGT	CHG-KEYS
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Figure 4-8. Call Data Summary Report Screen

Information displayed in the Traffic Report screen includes:

- Period is the time, in hourly increments, when calls were made to the VIS.
- Service indicates the script associated with a group of calls made during the specified time.
- Average Holdtime is the average duration of a call for the specified time in minutes and seconds.
- Calls is the total number of calls for the specified time.

Call Data Summary Options

With **(OPTIONS)** in the Call Data Summary Report screen, you can specify the day and hours on which you wish to base the call data summary report. Press **(OPTIONS)** to open the Options for Call Data Summary Report screen (Figure 4-9).

Options for Call Data Summary Report	
Day :	<u>Monday</u>
Hours :	<u>9-16</u>
Service :	<u>spadm</u>
Include Call Data Fields?	<u>no</u>

Enter a day of the week.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 4-9. Options for Call Data Summary Report Screen

Day

This field enables you to obtain call data information for a particular day. Enter a day of the week Monday through Sunday or press **(CHOICES)** to make a selection from the Day Choices menu screen.

Hours

In the call data summary report, you can specify the hours for which you want report information. For example, Figure 4-9 uses a range between 9 16. The VIS will only search for calls made between 9 a.m. and 5 p.m.

A valid range between 0 to 23 can be specified in this field, with 0 representing midnight and 23 representing 11 p.m. If this field is left blank, the all value is used. This means the VIS will not limit the call data summary report to any particular time period.

Note that hourly call data summary reports are not processed until midnight of each day. For example, if you made a request for information on Tuesday, you would not see the information displayed until the following day, Wednesday. The VIS takes one day to display the results.

Service

This field allows you to limit your search to a particular service. Use any valid service name, including a service not available from the CHOICES screen. If the service entry is left blank, the all value is used. No limit is placed on the service to be searched.

Include Call Data Fields

If you answer **yes** to this field, Event Data output will appear in the Call Data Summary Report screen. If Event Data exists for a particular record, this information will appear immediately following the record entry in the Call Data Summary Report screen. The following is included in the Event Data information:

- Event Description is the name of the call data field.
- Event No. is the identifying number for each call data message.
- Count is either the total value of all calls for this event during the period if the event is a numeric field or the total number of all calls during the period if the event is a non-numeric field.

To specify whether you want to include call data fields information in the call data summary report, type **y** for yes, **n** for no, or make a selection from the CHOICES screen. The default value for this field is no.

After you have filled in the Options for Call Data Summary Report screen, press **(SAVE)** to close the form and save it to memory. The VIS returns to the previously displayed call data summary report. You must press **(DISPLAY)** to bring up the new call data summary report specified by your options.

Call Data Summary Print Option

To obtain a complete printout of the call data summary report, press **(PRINT)** from the Call Data Summary Report screen. The version that is printed is based on the current set of options specified for call data summary report. Make sure the VIS has all the proper printer connections. Refer to Appendix A, "FACE Features", for information on how to establish printer operations.

Message Log Report

The Message Log Report allows you to access system messages from the VIS. A record of system error messages is displayed, with the priority level of the error.

From the System Reports screen, highlight Message Log Report and press **(ENTER)** to open the Message Log Report screen. The Message Log Report screen appears with no report information displayed until **(DISPLAY)** is pressed. Figure 4-10 shows an example of the Message Log Report screen with report information displayed.

The report displayed is based on the last set of options saved to the VIS. Refer to the information under "Message Log Report Options" on page 4-17 in this chapter for more information on how to establish option settings.

Message Log Report			
Pr	Time	Source	
----	-----	-----	
**	Wed Dec 30 15:55:16 1992	TWIP	
	TWIP017 T1 CA 0	Facility out of service	
		Reason: Blue alarm	
*	Wed Jan 6 13:38:21 1993	TRIP	
	TRIP002 TR CA 1	Corrupted data detected on TDM bus.	
		Timeslot 254. Reason: TDM Parity Error.	

Press a function key.

HELP	PREV-PAGE	NEXT-PAGE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 4-10. Message Log Report Screen

Information displayed in the Message Log Report screen includes:

- Pr — Priority classification of error messages; urgency of the message is specified with one of the following definitions in the message:
 - *C (critical) the error is interrupting service, so immediate action is essential
 - ** (major) indicates a potentially serious problem and should be fixed soon
 - * (minor) no immediate action is necessary, but the system condition should be monitored
 - - (none) no error (informational purposes only)
- Time — Date and time when error message was generated
- Source — Originating software process; messages are divided into subgroups according to the software process which outputs the messages. The following is a sample of possible sources:
 - The call data handler (CDH) process accumulates generic call statistics and application messages
 - The data interface process (DIP)
 - The maintenance (MTC) process runs temporary diagnostics.
 - The Tip/Ring interface process (TRIP)
 - The transaction state machine (TSM) process controls transactions via script execution and commands.
 - The voice response output process (VROP) manages speech data base and downloads speech data to VRU.
 - The DIO0 and DIO1 processes are the disk input/output for VROP for disk 0 and 1.
 - The T1 (E1) interface process (TWIP)
 - The speech processing interface process (SPIP)
 - The integrity checking (iCk) process

Message Log Report Options

With **[OPTIONS]** in the Message Log Report screen, you can specify the system error messages you wish to include in the message log report. Press **[OPTIONS]** to display the Options for Message Log Report screen (Figure 4-11).

Options for Message Log Report	
Priority: all	_____
Source: all	_____
Card:	_____
Start Time: (MM/DD HH:MM):	_____
Stop Time: (MM/DD HH:MM):	_____
Message ID: all	_____
Number of Messages to be Displayed: all	_____

Enter the urgency level of the messages to be displayed or press CHOICES.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 4-11. Options for Message Log Report Screen

Priority

The Priority field tells the VIS that you wish to see only messages with a particular priority status. If the field is left blank, the all value is used. The priorities are: *C (critical), ** (major), * (minor), alarms, all, and events. Enter the desired message priority or press **[CHOICES]** to make a selection from a menu screen.

Source

Source indicates what specific source should be searched for error messages. Multiple sources may be specified in the Source field. If you use multiple sources, the sources must be separated by commas and are not allowed to have spaces. Enter a single message source, multiple message sources separated by a comma (for example, TSM,MTC), or press **[CHOICES]** to make a selection from a menu screen. If this field is left blank, the all value (for all message sources) is used.

Refer to "Source" on page 4-17 under the "Message Log Report" for a sample list of the message sources.

Card

The Card field specifies the card number for which you want messages to be displayed. Enter a single card number or multiple card numbers separated by a comma (for example, T1,2,TR). There is no default value for the Card field.

NOTE:

If you specify all in the Card field, the display in the Message Log Report screen is limited to messages associated with cards only.

Start Time

The Start Time field allows you to specify the start time for the message search (that is, the time of the first message to be displayed). For example, entering "02/05 10:00" specifies that you wish to search messages that occurred on February 5 after 10 a.m.

Use the format of "MM/DD HH:MM" for month, day, hour, and minute. If the Start Time field is left blank, the beginning of the message log is used for the message search. If "today" is entered for the Start Time, all entries since the beginning of the current day are searched.

NOTE:

If nothing is entered in the Start Time and Stop Time fields, these fields default to 00:00 of the current date. As a result no records will be displayed in the Message Log Report.

Stop Time

The Stop Time field allows you to specify the stop time for the message search (that is, the time of the last message to be displayed).

Use the format of "MM/DD HH:MM" for month, day, hour, and minute. If the Stop Time field is left blank, the end of the message log is used for the message search. If "today" is entered for the Stop Time, all messages logged up to (but not including) the current day are displayed.

NOTE:

If nothing is entered in the Start Time and Stop Time fields, these fields default to 00:00 of the current date. As a result no records will be displayed in the Message Log Report.

Message ID

The Message ID field specifies the ID of the messages to be displayed. Enter the ID of the messages to be displayed. Enter a single ID, multiple IDs separated by commas (for example, TSM001,TWIP003), or the word *all*.

Number of Messages to be Displayed

The Number of Messages to be Displayed field specifies the number of most recent messages to be displayed. Enter a single number or the word *all*. Figure 4-11 on page 4-17 uses “all” as the number of messages to be displayed. This instructs the VIS to search through all messages maintained by the VIS (approximately 500 records). No limit is placed on the number of messages to be searched when all is used in this field. If a number, such as “5,” is entered in this field, this instructs the VIS to search for all records and display only the five most recent records that match the specified start and stop time, priority, card, and source.

NOTE:

You can only display up to 999 messages at one time. The Number of Messages to be Displayed field only accepts a three digit value.

After you have filled in the Message Log Report screen, press **(SAVE)** to complete the form and save it to memory. The VIS returns to the previously displayed message log report. You must press **(DISPLAY)** to bring up the new message log report specified by your options.

Message Log Explain

To display more information about a specific message, press **(EXPLAIN)**. In the Explain form, enter the message ID, then press **(ENTER)**.

Message Log Print Option

To obtain a complete printout of the message log report, press **(PRINT)** from the Message Log Report screen. The version that is printed will be based on the current set of options specified for message log report. Make sure the VIS has all the proper printer connections. Refer to Appendix A, “FACE Features”, for information on how to establish printer operations.

Traffic Report

The Traffic Report screen provides information on the amount of call traffic on the system. Information in the traffic report includes the number of calls coming in to the system during a specified time period, average holding time, and the percentage of time that channel occupied for a certain hour. Approximately seven days worth of information is maintained in the VIS.

⇒ NOTE:

Traffic summary information is prepared at midnight for the entire day. Therefore, traffic summary information for the day is not available until after midnight (that is, it is not available until the next day).

From the System Reports screen, highlight Traffic Report and press (ENTER). The Traffic Report screen appears with no report information displayed until (DISPLAY) is pressed. Figure 4-12 shows an example of the Traffic Report screen with report information displayed.

The report displayed is based on the last set of options saved to the VIS. Refer to the information under "Traffic Report Options" on page 4-21 in this chapter for more information on how to establish option settings.

Traffic Report				
Channel	Period	Calls	Average Hold Time	%Occ
3	4:00am - 5:00am(07/10)	1	0:36	1
4	3:00am - 4:00am(07/10)	1	0:56	1
5	2:00am - 3:00am(07/10)	1	0:17	0
6	1:00am - 2:00am(07/10)	1	0:15	0
Totals:		04	0:31	0

OPTIONS	DISPLAY				PRINT	FRM-MGMT	CHG-KEYS
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Figure 4-12. Traffic Report Screen

Information in the Traffic Report screen includes:

- Channel is the channel that handled the call.
- Period is the time period when system traffic is monitored.
- Calls is the number of calls made during the indicated time period.
- Average Hold Time is average duration of a call for the specified time in minutes and seconds.
- %Occ is the percentage of occupancy (that is, the proportion of the hour that the channel was in use).

Traffic Report Options

With **(OPTIONS)** you can specify when you want the system to monitor traffic. Press **(OPTIONS)** from the Traffic Report screen to bring up the Traffic Report screen (Figure 4-13).

Options for Traffic Report	
Day :	<u>Wednesday</u>
Hours :	<u>9-17</u>
Summarize ?	<u>no</u>

Enter a day of the week.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 4-13. Options for Traffic Report Screen

Day

This field enables you to obtain traffic information for a particular day. Enter a day of the week Monday through Sunday or press **(CHOICES)** to make a selection from the menu screen.

Hours

In the traffic report, you must indicate the hours for which you wish the VIS to obtain report information. Figure 4-13 instructs the VIS to look at calls made between 9 a.m. and 6 p.m. This includes all calls made from the 9:00 a.m. hour to all of the calls made in the 17:00 p.m. hour.

A valid range between 0 to 23 can be specified in this field, with 0 representing midnight and 23 representing 11 p.m. If this field is left blank, the all value is used.

Summarize

Two types of traffic reports are available: traffic and traffic summary reports. The traffic report provides traffic volume for each channel in one-hour increments starting and ending with the hours specified in the Traffic Report screen. The traffic summary report provides information on the total traffic volume for each channel for the range of hours specified in the Traffic Report screen. Specify whether you want to see a summary traffic report by entering **yes** or **no**. If the field is left blank, the no value is used.

After you have filled in the Traffic Report screen, press **(SAVE)** to close the form and save it to memory. The VIS returns to the previously displayed traffic report. You must press **(DISPLAY)** to bring up the new traffic report specified by your options.

Traffic Report Print Option

To obtain a complete printout of the traffic report, press **(PRINT)** from the Traffic Report screen. The version that is printed is based on the current set of options specified for the traffic report. Make sure the VIS has all the proper printer connections. Refer to Appendix A, "FACE Features", for information on how to establish printer operations.

Switch Interface Administration

5

Switch Interface Administration Overview

The Switch Interfaces screen enables you to define the interaction between the CONVERSANT Voice Information System (VIS) and switches by allowing you to establish and modify switch interface parameters and protocol options for both analog and digital interfaces.

Basic Assumptions in Switch Interface Administration

A VIS can have both digital and analog interfaces at the same time. The digital and analog interface cards share the same set of card numbers.

Card numbers (Card 0, Card 1, ... Card N) are determined by the VIS. However, once a card has been determined to be Card 1, for example, that card number refers to the card in displays as well as in forms used to specify parameters.

For information about slot allocation for digital and analog interface cards, refer to Chapter 4, "Running the Configuration Program," of the *Voice Processing Hardware Installation* book specific to your platform. For information about configuration limits, refer to Chapter 6, "CONVERSANT VIS Requirements and Specifications," of *CONVERSANT VIS System Description*, 585-350-207.

Analog Interfaces

Analog interfaces are administered on a system-wide basis; that is, analog parameters apply to all analog cards. To administer the analog interface, you may specify several parameters or accept the default values. The analog interface currently supports Dimension, System 25, System 75, and System 85 PBXs. Additional switches are supported with the purchase of optional switch integration packages. Default values and parameters are discussed later in this chapter.

Digital Interfaces

The Digital Interfaces screen, discussed in detail later in this chapter, displays the T1 or E1 cards installed in the VIS. If there are no T1 or E1 cards installed, the screens below the Digital Interfaces screen will not open.

Digital interfaces are administered on a card-by-card basis. Administering the digital interfaces involves selecting a protocol:

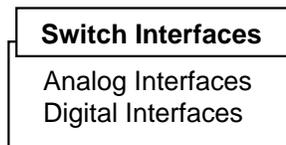
- For each T1 — T1.5 E&M Robbed Bit, Line Side T1, or Primary Rate Interface (PRI)
- For each E1 card — PRI or CAS

You must specify values for the parameters applicable to the protocol you chose. If the default parameters are acceptable to you, you do not need to make any changes.

Starting Switch Interface Administration

From the CONVERSANT VIS VERSION 4.0 screen, highlight Voice System Administration and press **(ENTER)**. From the Voice System Administration screen, highlight Switch Interfaces and press **(ENTER)** to open the Switch Interfaces screen (Figure 5-1). The VIS must be running before you can use Switch Interface Administration. In order to save any changes made in the Switch Interface screens, you must stop and restart the voice system. (To start or stop the VIS, either use the System Control screen or, from the UNIX system command line, use the **start_vs** and **stop_vs** commands). Refer to the information under "Starting the Voice System" on page 3-30 and "Stopping the Voice System" on page 3-31 in Chapter 3, "Configuration Management", for details on how to start and stop the VIS.

The Switch Interfaces screen (Figure 5-1) offers two choices: analog interfaces and digital interfaces.



Highlight an item and press <Enter>.

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 5-1. Switch Interfaces Screen

Analog Interface Administration

The Analog Interfaces screen (Figure 5-2) displays the most recently saved analog switch settings. If you have not previously established your own settings, the AT&T System 75 PBX values appear in the screen by default.

Analog Interfaces	
AT&T System 75	
Switch Hook Flash Duration:	500
Wink Disconnect Interval:	300
Type of Signaling:	TT
Incoming Speech Volume:	4000
Outgoing Speech Volume:	1000
Outgoing Text Volume:	1000
Dial-Tone Training:	yes
Blind Transfer Actions	
To Initiate Transfer:	FW
To Complete Transfer:	H
Intelligent Transfer Actions	
To Initiate Transfer:	FW
To Complete Transfer:	H
To Reconnect Caller	
No Answer:	FPF
Busy:	FPF

Enter a flash duration between 300 and 1550 milliseconds.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 5-2. Analog Interfaces Screen

⇒ NOTE:

The Outgoing Text Volume field is displayed in the Analog Interfaces screen only if the Text-to-Speech optional feature package software is installed on your system. Refer to *CONVERSANT VIS Text-to-Speech*, 585-350-807, for additional information.

Switch Interface Parameters

The Analog Interfaces screen contains the following parameters:

Switch Hook Flash Duration

This field is used to specify the length of flash duration. Flash is a short, on-hook interval recognized by many of the PBXs as a request for special services, including call hold or transfer. Switch interface packages that have selected Earth Recall (applies to AYC16 only) will use this value for Earth Recall timing.

Valid range is 0 —1550 msec.

Wink Disconnect Interval

This field indicates the minimum amount of time for a loop current interruption to occur for its interpretation as a disconnect signal. Valid interval range is 80–800 msec.

Type of Signaling

This field is used to specify the type of address signaling for outbound dialing. Select either touch-tone or dial pulse. Type **TT** for touch-tone signaling, **DP** for dial pulse signaling, or press **CHOICES** to make a selection from a menu screen.

Incoming Speech Volume

This field specifies a volume adjustment for all incoming speech on analog cards. Any adjustment occurs before the incoming speech is processed by the system, for example, being coded for later playback. The value represents a gain applied to the speech input using a logarithmic scale on which a value of 1000 equals no gain; that is, the input is recorded at the level received. Multiplying by 1.414 (the square root of 2) approximately doubles the volume (in fact, increases it by 3 decibels). Therefore, a value of 1414 in this field doubles the volume of any incoming speech before it is used; 2000 doubles it again, 2828 doubles it a third time, etc. On the other hand, multiplying by 0.707 approximately halves the volume (decreases it by 3 decibels). Therefore, a value of 707 in this field reduces the volume by one half, 500 by half again, etc. Table 5-1 on page 5-6 shows the relationship between the volume number and the actual change in volume expressed in decibels (dB).

Table 5-1. Volume Number in Terms of Gain in dB

Volume Number	Gain in dB
500	-6
707	-3
1000	0
1414	+3
2000	+6

Values can range from 0 to 32000. However, values less than 100 or more than 8000 may distort the incoming speech and make it difficult to understand. The default value for analog (T/R) cards is 4000. The default is based on network standards and performance. You should use this value unless experience with your system dictates a change. If you have trouble hearing speech you recorded using this value, you can increase the value and record the speech again. This field has no effect on prerecorded speech from other sources — see "Outgoing Speech Volume"

⇒ NOTE:

This parameter affects all T/R cards in the system.

Outgoing Speech Volume

This field specifies a volume adjustment for all outgoing speech played on analog cards. Any adjustment is applied to recorded speech as it is processed for playback. The value and its effect are the same as for Incoming Speech Volume (refer to the preceding section and to Table 5-1.

The default value for analog (T/R) cards is 1000. As with the incoming speech volume, the default is based on network standards and performance and should be used unless experience with your system dictates a change. If you have trouble hearing speech phrases when played back at this level, you can increase the output volume by increasing the value in this field. With speech you supply, you also can rerecord the speech using a higher input gain to increase the recorded speech volume level. Refer to the previous discussion of Incoming Speech Volume.

⇒ NOTE:

This parameter affects all T/R cards in the system.

Outgoing Text Volume

This field specifies the outgoing volume of speech for Text-to-Speech applications. The range is 0–32000 (-5 to +6 dB). The default value is 1000.

Dial-Tone Training

This field specifies system training for recognizing existing dialtones. If the field is set to yes, Dial-Tone Training is performed on each analog card when the VIS is started up or the state of an analog card is changed to INSERT. If the field is set to no, default dial tone recognition parameters will be used, and no training will be performed.

⇒ NOTE:

If a switch integration package is installed on your system, the package may specify that the default Dial-Tone Training field may not be changed. If a change to this field is not allowed, you will receive an error message when you attempt to **SAVE** the form.

Blind Transfer Actions

The Blind Transfer Protocol enables a script to transfer a call to a different extension using the transfer and/or three-way calling features provided by the PBX. When a Blind Transfer is used, a transfer is completed as soon as the extension is dialed, without having to wait to see if the phone is busy, or if the caller answered. If the extension is busy or no one answers, the caller will hear the busy or ringing tone provided by the PBX. It is not possible to reconnect the call to the VIS.

Blind Transfer Actions executes a blind call transfer, consisting of the following transfer sequences:

- To Initiate Transfer — (start state) Where the caller is connected to the VIS and then (end state) placed on hold, so an extension can be dialed
- To Complete Transfer — (start state) Where the VIS has just completed dialing to the transfer destination; (end state) VIS is removed from call, regardless of whether or not the line is ringing

If you will be using a blind transfer action, pay close attention to the sequences of actions used to initiate and complete the transfer.

To initiate the transfer, the sequence FW (flash, wait for dial tone) should work for all switches that reliably produce dial tone. To complete the transfer, you may need to use H (hangup) or FH (flash, then hangup), depending on how the switch handles attempts to transfer to a busy line. If the switch transfers the call, regardless of the state of the line, then a simply H (hangup) will work. However, if the switch tests the line state, detects a busy and reconnects the caller, you should then use FH (flash, then hangup).

⇒ NOTE:

For Line Side T1 lines (DEFINITY and Galaxy), the To Initiate Transfer and the To Complete Transfer fields must be set to FP (flash and pause for a fixed delay) and H (hangup), respectively. If you are already using a DEFINITY with T/R lines, these values are already set in this mode.

Refer to "Defining Line Side T1 Protocol" on page 5-18 in this chapter for additional information.

Intelligent Transfer Actions

As with the Blind Transfer Protocol, Intelligent Transfer Protocol allows a script to transfer a call to a different extension, using the transfer and/or three-way calling features provided by the PBX.

⇒ NOTE:

In release 2.0.2 and earlier releases, the Intelligent Transfer Protocol is designed to support ONLY transfers from one PBX station to another. With the current release, intelligent transfer of calls into the public telephone network is supported only with the purchase of the Full Call Classification Analysis (CCA) optional package.

⇒ NOTE:

Line Side T1 will not work with intelligent call transfers. It works only with blind and Full CCA call transfers.

The Intelligent Transfer monitors 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 script can specify how the call should be handled in each of these cases. The Intelligent Transfer Protocol may take a little longer to classify the call as completed or unanswered (no answer). It is therefore recommended that you play a message to the attendant to announce the incoming call. This prepares the attendant to greet the caller.

Intelligent Transfer Actions executes an intelligent call transfer, consisting of the following transfer sequences:

- To Initiate Transfer — (start state) Where the caller is connected to the VIS and then (end state) placed on hold, so an extension can be dialed
- To Complete Transfer — (start state) Where the VIS has just completed dialing to the transfer destination; (end state) VIS is removed from call if no busy tone is detected or the call is answered within the specified number of rings

-
- To Reconnect Caller (No Answer) — Reconnects the caller to the VIS application if the extension does not answer within a specified number of rings
 - To Reconnect Caller (Busy) — Reconnects the caller to the VIS application if the extension is busy

⇒ NOTE:

For Line Side T1 – DEFINITY using Full CCA, the To Reconnect Caller fields (No Answer and Busy) must be set to FPF (flash, pause 3 seconds, flash).

For Line Side T1 – Galaxy using Full CCA, the To Reconnect Caller fields (No Answer and Busy) should both be set to P.

Refer to "Defining Line Side T1 Protocol" on page 5-18 in this chapter for additional information.

Specify each element of the transfer with a single letter that signifies an action. Valid transfer commands are:

- F = switch hook flash
- W = wait for dial tone
- P = pause for approximately 3 seconds
- Any touch-tone digit (0-9, #, *) = send that digit to the PBX
- H = hangup

Once you have entered all the information required in the Analog Interfaces screen, press **SAVE**. The following message appears on the screen:

In order for the Analog Interface Parameters to be effective, execute Stop Voice System. For changes to Transfer Sequences to be effective, any installed applications must be reinstalled.

Press **ENTER** to continue.

Default Settings

The VIS has default settings established for each PBX. If you wish to use one of the PBXs and its assigned default values, press **CHG-KEYS** and then **DEFAULTS** from the Analog Interfaces screen. The PBX Defaults menu screen appears (Figure 5-3).

Analog Interfaces

System 75

Switch Hook Flash Duration: 500
Wink Disconnect Interval: 300
Type of Signaling: IT
Incoming Speech Volume: 2000
Outgoing Speech Volume: 1000
Dial-Tone Training: yes

Blind Transfer Actions
To Initiate Transfer: FW
To Complete Transfer: H

Intelligent Transfer Actions
To Initiate Transfer: FW
To Complete Transfer: H

To Reconnect Caller
No Answer: FPF
Busy: FPF

PBX Defaults

AT&T Dimension
AT&T System 25
AT&T System 75
AT&T System 85
Other Switch/PBX/ACD
Current Settings

Enter the switch whose defaults you want to display.

HELP CHOICES SAVE PREV-FRM NEXT-FRM CANCEL CMD-MENU CHG-KEYS

Figure 5-3. PBX Defaults Screen

⇒ NOTE:

The Outgoing Text Volume field is displayed in the Analog Interfaces screen only if the Text-to-Speech optional feature package software is installed on your system. Refer to *CONVERSANT VIS Text-to-Speech*, 585-350-807, for additional information.

⇒ NOTE:

If the AUDIX Voice Power Application R2.1.1 is installed for use with an AT&T System 75 PBX, the PBX Defaults screen also will display AT&T System 75 (AVP) values. In order for the AUDIX Voice Power Switch Integration package to function properly, the "AT&T System 75 (AVP)" options must be selected in this screen. By selecting the switch interface parameters for the AT&T System 75 (AVP), busy tone detection will be enhanced because more cycles of the busy tone will be counted by the system. Selection of these PBX parameters will also insure that busy tones detected during voice coding will be treated as hangups.

If one of the AT&T PBXs is selected, default parameter values for the specified private branch exchange are read into the Analog Interfaces screen. If an additional PBX is installed and that PBX is selected, default parameter values for that PBX are read into the Analog Interfaces screen. If the "Other Switch/PBX/ACD" defaults set is chosen, the values given under "AT&T System 75" will be used.

Using the cursor movement keys, highlight one of the PBX selections, then press **ENTER**. The indicated PBX default values appear in the Analog Interfaces screen.

If you like, you can make changes to any of the default switch values to meet your conditions. Simply move the cursor to the parameter line and make your changes. Once the screen information is complete, press **SAVE** to close the screen and save the information you have entered into memory.

If the current settings are modified either by selecting a different switch or making changes in the default values, these changes will not take effect until you have stopped and then started the VIS. You may stop and restart the voice system by performing the stop voice system and restart voice system procedures described in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, or by using the System Control screen as described in Chapter 3, "Configuration Management". You must also reinstall any scripts that use transfer sequences.

AT&T PBX Default Values

Table 5-2 shows the PBX parameter values that will be placed in the screen when that particular AT&T PBX is selected.

Following are symbols represented and their meanings:

- F = flash; the valid range for all PBXs is 0 to 1550 msec
- H = hangup
- P = 3 second pause
- W = wait for dial tone; if there is no dial tone after 5 seconds, error condition exists
- TT = touch-tone signaling
- DP = dial-pulse signaling

Table 5-2. AT&T PBX Default Values

	AT&T Dimension	AT&T System 25	AT&T System 75	AT&T System 85
Switch Hook Flash Duration	700	700	500	600
Wink Disconnect Interval	300	300	300	300
Type of Signaling	TT	TT	TT	TT
Incoming Speech Volume	4000	4000	4000	4000
Outgoing Speech Volume	1000	1000	1000	1000
* Outgoing Text Volume	1000	1000	1000	1000
Dial-Tone Training	Yes	Yes	Yes	Yes
Blind Transfer Actions				
To Initiate Transfer	FW	FW	FW	FW
To Complete Transfer	H	H	H	H
Intelligent Transfer Actions				
To Initiate Transfer	FW	FW	FW	FW
To Complete Transfer	H	H	H	H

Continued on next page

Table 5-2. AT&T PBX Default Values — *Continued*

	AT&T Dimension	AT&T System 25	AT&T System 75	AT&T System 85
To Reconnect Caller				
No Answer	FP	FPF	FPF†	FP‡
Busy	FP	FP	FPF†	FP‡

* Appears only when Text-to Speech is installed

† Values represented support DEFINITY G3

‡ Values represented support DEFINITY G2

⇒ NOTE:

The Intelligent Transfer Actions need to be set if you are using Line Side T1 protocols. Refer to "Defining Line Side T1 Protocol" on page 5-18 in this chapter.

Non-US Switch Integration Packages

Currently, there are several international switch integration packages available to work with the VIS. When a country's switch integration package is loaded, it includes the following packages:

- <Country's> DEFINITY switch integration package
- <Country's> Public Telephone Network switch integration package

These choices will appear in the PBX Defaults menu when loaded on the system. Select the DEFINITY for that country when you are connected the VIS to a DEFINITY or select the telephone network for that country if you are connecting the VIS to the public switch network. The differences in these two packages are in internal configuration.

CONVERSANT VIS currently has switch integration packages for the following countries:

- Australia
- Belgium
- Germany
- Hong Kong
- Ireland
- Mexico
- Netherlands
- Spain
- United Kingdom

Contact the International Technical Assistance Center at 800-538-4666 for additional information about custom switch integration packages.

Refer to "Switch Interface Parameters" on page 5-5 in this chapter for a description of each of the fields that appear in the Analog Interfaces screen for each of the countries listed above.

Digital Interface Administration

The Digital Interfaces screen automatically lists the system card numbers of the T1 (Figure 5-4) or E1 (Figure 5-5) cards installed in the VIS, and the digital protocol assigned to each.

⇒ NOTE:

The Line Side T1 Protocol entries for DEFINITY and Galaxy (shown in Figure 5-4 and Figure 5-6) will appear only if you have that package installed.

If you have PRI, refer to “Administering PRI” of *CONVERSANT VIS Primary Rate Interface*, 585-350-805.

Digital Interfaces							
Card No. 00: Line Side T1 Protocol - DEFINITY Card No. 01: T1 A/B Robbed-bit E&M Protocol Card No. 02: Line Side T1 Protocol - Galaxy							
Select a card and press Enter							
HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS

Figure 5-4. T1 Digital Interfaces Screen

Digital Interfaces	
>	Card No. 00 : Digital CAS Protocol
	Card No. 01 : Digital CAS Protocol

Figure 5-5. E1 Digital CAS Interfaces Screen

To change the protocol, highlight the line you want to change and press **ENTER** to display the Digital Protocols screen (Figure 5-6 and Figure 5-7).

Digital Protocols

T1 A/B Robbed-Bit E&M Protocol
Line Side T1 Protocol - Galaxy
Line Side T1 Protocol - DEFINITY

Place the cursor on the desired protocol and press Enter

HELP			PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	--	--	----------	----------	--------	----------	----------

Figure 5-6. T1 Digital Protocols Screen

```
Digital Protocols  
>Digital CAS Protocol
```

Figure 5-7. E1 Digital Protocols Screen

The Digital Protocols screen displays the protocols installed on that system. Highlight the protocol you want to assign to the card and press **(ENTER)**. The Digital Protocol screen for the protocol you chose opens.

⇒ NOTE:

Before making any changes to the digital protocol, make sure the cards that will be affected are in the MANOOS state. Refer to Chapter 3, "Configuration Management", for additional information. If the digital protocol is changed on the VIS, it must be changed on the switch side as well.

Defining Digital Protocol: T1 A/B Robbed-bit E&M Protocol

If you chose T1 A/B Robbed-bit E&M protocol, the following screen opens (Figure 5-8).

Digital Protocol: T1.5 E&M Robbed Bit	
System Card No:	0
Framing/Line Coding:	D4ZCS
DTMF Muting:	YES
CSU Distance:	0-133 ft.
Wink Time:	230 msec.
Post-Wink Delay:	80 msec.
Max. Digits in Called Number:	4
Incoming Speech Volume:	1414
Outgoing Speech Volume:	707
Outgoing Text Volume:	1000

Type in desired framing and line coding or use CHOICES key.

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 5-8. Digital Protocol: T1.5 E&M Robbed Bit

⇒ NOTE:

The Outgoing Text Volume field is displayed in the Digital Protocol: T1.5E&M Robbed Bit screen only if the Text-to-Speech optional feature package software is installed on your system. Refer to *CONVERSANT VIS Text-to-Speech*, 585-350-807, for additional information.

The T1 interface uses wink start robbed-bit E&M signaling on a link using D4 framing with Zero Code Suppression (ZCS). The T1 interface outputs Dual Tone Multi-Frequency (DTMF) tones at 7 pulses per second when originating out-bound calls and requires DTMF when taking inbound calls. Make sure that the switch to which the system is connected is programmed with these options.

Defining Line Side T1 Protocol

If you chose Line Side T1 Protocol – DEFINITY, the following screen opens (Figure 5-9).

Digital Protocol: Line Side T1 - DEFINITY	
System Card No:	0
Framing/Line Coding:	D4ZCS
DTMF Muting:	YES
CSU Distance:	0-133 ft.
Wink Disconnect Interval:	300 msec.
Dial-Tone Delay:	1000 msec.
Switch Hook Flash Duration:	700 msec.
Incoming Speech Volume:	1414
Outgoing Speech Volume:	707
Outgoing Text Volume:	1000

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 5-9. Digital Protocol: T1 Line Side – DEFINITY

⇒ NOTE:

The Outgoing Text Volume field is displayed in the Digital Protocol: Line Side T1 – DEFINITY screen only if the Text-to-Speech optional feature package software is installed on your system. Refer to *CONVERSANT VIS Text-to-Speech*, 585-350-807, for additional information.

Line Side T1 – DEFINITY supports the following protocols of DEFINITY:

- DEFINITY off-premise station (PBX) with forward disconnect indication on G3i release 4.0 or G3r release 5.4
- DEFINITY G2 Release 2 Generics 2.1 and 2.2, using ANN11E DS1 circuit pack configured of the off-premises extension (OPS) port type

⇒ NOTE:

G2 does not provide forward disconnect. In this case, scripts need to be provide a timeout if the switch is not responding. Otherwise, the channels can be unusable.

The Digital Protocol: Line Side T1 – Galaxy screen is identical to the screen for the DEFINITY switch, except for the change in the screen title.

In order for blind transfers to work with Line Side T1 – DEFINITY, you must set the To Initiate Transfer and the To Complete Transfer fields in the Analog Interface screen to FW and H, respectively. In order for Full CCA to work with Line Side T1 - DEFINITY, you must set both the To Reconnect Caller fields (No Answer and Busy) in the Analog Interface screen to FPF.

In order for Full CCA to work with Line Side T1 – Galaxy, you must set both the To Reconnect Caller fields (No Answer and Busy) in the Analog Interface screen to P.

When you have specified the values you want to use in the Digital Protocol: Line Side – DEFINITY or Galaxy screen, press **(SAVE)** to save these parameters.

Defining Digital CAS Protocol

If you chose Digital CAS Protocol, the following screen opens (Figure 5-10).

```

Digital Protocol: Channel Associated Signalling
System Card No.: 01

Framing/Line Coding: D4ZCS
Idle Code: 11111111
DTMF Muting: YES
A-LAW or MU-LAW?: A-LAW
CRC?: YES
Max. Digits in Called Number: 4
Incoming Call?: YES
Outgoing Call?: YES
Outgoing Addressing Type: DTMF
Incoming Addressing Type: DTMF
Incoming Speech Volume: 1414
Outgoing Speech Volume: 707
Outgoing Text Volume: 707

```

Figure 5-10. Digital CAS Protocol

⇒ NOTE:

The Outgoing Text Volume field is displayed in the Digital Protocol: Channel Associated Signalling screen only if the Text-to-Speech optional feature package software is installed on your system. Refer to *CONVERSANT VIS Text-to-Speech*, 585-350-807, for additional information.

⇒ NOTE:

Although the Incoming Call and Outgoing Call fields appear on your screen, they are not used.

Digital Protocol Parameters

The parameters that appear in the forms shown in Figure 5-8, Figure 5-9, and Figure 5-10 must be set for your application. All fields in this form are already filled in when the form opens. The System Card No. fields contain the same number as the System Card No. field in the Digital Interfaces screen. Table 5-3 shows the ranges and the default values for types of digital protocol that may be specified. Refer to the field descriptions following the table.

Table 5-3. Digital Protocol Parameters Ranges and Defaults

Field	Parameters	T1 A/B Robbed Bit E&M Default	Line Side T1 - DEFINITY Default	Line Side T1 - Galaxy Default	CAS Default
Frame/Line Coding	D4ZCS, CEPTHDB3, ESFB8ZS	D4ZCS	D4ZCS	D4ZCS	D4ZCS
**Idle Code	11111111, 01010101, 01010100	N/A	N/A	N/A	01010101
DTMF Muting	Yes, No	Yes	Yes	Yes	Yes
**A-LAW or MU-LAW	N/A	N/A	N/A	N/A	A-LAW
**CRC	Yes, No	N/A	N/A	N/A	Yes
CSU Distance	0-666 ft	0-133 ft	0-133 ft	0-133 ft	N/A
†Wink Time	10-2550 msec	230 msec	N/A	N/A	N/A
††Wink Disconnect Interval	10-2550 msec	N/A	300 msec	300 msec	N/A
†Post-Wink Delay	20-2550	80 msec	N/A	N/A	N/A
††Dial-Tone Delay	20-5100 msec	N/A	1000 msec	1000 msec	N/A
*†Max. Digits in Called Number	0-16	4	N/A	N/A	4

Continued on next page

Table 5-3. Digital Protocol Parameters Ranges and Defaults — *Continued*

Field	Parameters	T1 A/B Robbed Bit E&M Default	Line Side T1 - DEFINITY Default	Line Side T1 - Galaxy Default	CAS Default
††Switch Hook Flash Duration	10–2550 msec	N/A	700 msec	700 msec	N/A
*Incoming Call	Yes, No	N/A	N/A	N/A	Yes
*Outgoing Call	Yes, No	N/A	N/A	N/A	Yes
*Outgoing Addressing Type	Decadic, MF, DTMF, MFC	N/A	N/A	N/A	DTMF
*Incoming Addressing Type	Decadic, MF, DTMF, MFC	N/A	N/A	N/A	DTMF
Incoming Speech Volume	0–32000 (-6 to +6 dB)	1414	1414	1414	1414
Outgoing Speech Volume	0–32000 (-6 to +6 dB)	707	707	707	707
†††Outgoing Text Volume	0–32000 (-6 to +6 dB)	1000	1000	1000	N/A

* Applies only to CAS protocol

** Applies to E1 links

† Applies only to T1.5 Robbed-Bit E&M

†† Applies only to Line Side T1 protocol

††† Applies only when Text-to-Speech is installed

Idle Code

NOTE:

This field applies only to CAS and E1 ISDN-PRI protocols.

Idle Code is the bit pattern that is transmitted on E1 bearer channels when there is no call present. The three possible values are 11111111, 01010101, and 01010100. Ask your Network Service Provider which idle code is used on the link.

DTMF Muting

DTMF Muting is intended to reduce false DTMF recognitions that sometimes result from voice response simulations of DTMF tones. If DTMF Muting is turned on, the outgoing speech path will be interrupted, so that verification of the DTMF tone can be made. DTMF Muting should therefore be set to *yes* in most applications. Some applications cannot tolerate random interruptions in the outgoing speech path.

Consequently, if DTMF Muting is turned off, the outgoing speech will not be interrupted and a false DTMF report will be generated if a simulated tone is encountered. If you have an application that must pass DTMF tones to another system or if you require DTMF detection that adheres to LSSGR requirements for DTMF receivers, you may want to set DTMF Muting to *no*. The default is *yes*. This default applies to all digital protocols.

A-LAW or MU-LAW

NOTE:

This field applies only to E1 protocols.

A-LAW or MU-LAW is the speech companding rule used for voice transmission on digital bearer channels. Most countries outside North America use A-Law. Ask your Network Service Provider which rule is used on the digital link.

CRC

NOTE:

This field applies only to E1 protocols.

The CRC field specifies whether or not CRC error checking should be used on the digital link. Values are YES or NO, with YES being the default. Ask your Network Service Provider which rule is used on the digital link.

CSU Distance

NOTE:

This field not apply to E1 protocols.

The CSU Distance field specifies the cable distance (in feet) between the Channel Service Unit (CSU) and the VIS. The valid options are 0–133, 134–266, 267–399, 400–533, and 534–666. Press to see the valid options for this field. The default value for CSU Distance is 0 –133. This default applies to all digital protocols.

If there is no CSU, the value entered in this field should be the cable distance between the VIS and the equipment to which it is connected.

Wink Time

NOTE:

This field applies only to T1.5 Robbed-bit E&M protocols.

This field is used for incoming calls only. The Wink Time field specifies the length of the wink returned to the calling end on incoming calls. The value is in msec and must be an integer in the range 10–2550 msec. The value must be in increments of 10 msec. If you enter a number other than a number that can be divided by ten, the system rounds the number down to the next ten.

Post-Wink Delay

NOTE:

This field applies only to T1.5 Robbed-bit E&M protocols.

This field is used for outgoing calls only. The Post-Wink Delay field specifies the length of time in msec that the interface waits after receiving a wink and before transmitting the dialed number. The value must be an integer in the range 20–2550. The value must be in increments of 10. If you enter a number other than a number that can be divided by ten, the system rounds the number down to the next ten.

Maximum Digits in Called Number

NOTE:

This field applies only to T1.5 Robbed-bit E&M protocols.

This field is used for incoming calls only. The Maximum Digits in Called Number field specifies the number of digits that the T1 or E1 interface waits for when receiving an incoming call. This number should be selected so that it matches the number of digits that the calling end (network) will output to the VIS.

If the number of digits is expected to vary, set the number to the maximum you expect the system to receive. For optimum performance, the number of digits that the network outputs to the VIS should be constant and as small as possible. The value must be between 0–16.

WARNING:

If the switch you are using is configured to pass more than 4 digits, you must remember to adjust the Maximum Digits in Called Number value so that the VIS will wait to receive all of the digits from the switch. The system expects to receive only up to the specified number of digits. Any remaining digits (that is, digits that are not expected by the system) could be passed into the script being played on that channel.

Wink Disconnect Interval

NOTE:

This field applies only to Line Side T1 protocols.

The Wink Disconnect Interval is the length of time of the on-hook signal from the switch indicating that the far end has hung up. The range is 10–2550 msec. The value must be in increments of 10 msec. If you enter a number other than a number that can be divided by ten, the system rounds the number down to the next ten.

Dial Tone Delay



NOTE:

This field applies only to Line Side T1 protocols.

This field specifies the amount of delay to be inserted before digits are dialed when originating a call or a blind transfer. This delay should be long enough to handle the maximum dial tone delay anticipated from the switch. This delay is dependent on the configuration of the switch. The range of the value is 20–5100 msec. The value must be in increments of 20 msec. If you enter a number other than a number that can be divided by 20, the system rounds the number down to the next 20.

Switch Hook Flash Duration



NOTE:

This field applies only to Line Side T1 protocols.

The Switch Hook Flash Duration specifies the length of time of the on-hook signal used to initiate a transfer. The range is 10–2550 msec. The value must be in increments of 10 msec. If you enter a number other than a number that can be divided by ten, the system rounds the number down to the next ten.

Incoming Call



NOTE:

This field applies only to CAS protocols and is not used at this time.

Outgoing Call



NOTE:

This field applies only to CAS protocols and is not used at this time.

Outgoing Addressing Type

⇒ NOTE:

This field applies only to CAS protocols. The options MFC (Multi-Frequency Compelled) and MF (Multi-Frequency) are not available at this time.

Outgoing Addressing Type is the transmission of digits from the network to the AYC21 or E1 card when placing a call. This field determines the type of addressing that will be used on the link. The possible options are DTMF (Dual Tone Multi-Frequency) or Decadic (rotary or dial pulse).

Incoming Addressing Type

⇒ NOTE:

This field applies only to CAS protocols.

Incoming Addressing is the transmission of digits from the network to the AYC21 or E1 card when receiving a call. This field determines the type of addressing that will be used on the link. The possible options are DTMF (Dual Tone Multi-Frequency) or Decadic (rotary or dial pulse). The options MFC (Multi-Frequency Compelled) and MF (Multi-Frequency) are not available at this time.

Incoming Speech Volume

This field specifies a volume adjustment for all incoming speech on T1 or E1 cards. Any adjustment occurs before the incoming speech is processed by the system, for example, being coded for later playback. The value represents a gain applied to the speech input using a logarithmic scale on which a value of 1000 equals no gain; that is, the input is recorded at the level received. Multiplying by 1.414 (the square root of 2) approximately doubles the volume (in fact, increases it by 3 decibels). Therefore, a value of 1414 in this field doubles the volume of any incoming speech before it is used; 2000 doubles it again, 2828 doubles it a third time, etc. On the other hand, multiplying by 0.707 approximately halves the volume (decreases it by 3 decibels). Therefore, a value of 707 in this field reduces the volume by one half, 500 by half again, etc. Table 5-2 on page 5-12 shows the relationship between the volume number and the actual change in volume expressed in decibels (dB).

Table 5-4. Volume Number in Terms of Gain in dB

Volume Number	Gain in dB
500	-6
707	-3
1000	0
1414	+3
2000	+6

⇒ NOTE:

The incoming speech volume value is set on a per card basis.

Values can range from 0 to 32000. However, values less than 100 or more than 8000 may distort the incoming speech and make it difficult to understand. The default value for digital (T1 or E1) cards is 1414. The default is based on network standards and performance. You should use this value unless experience with your system dictates a change. If you have trouble hearing speech you recorded using this value, you can increase the value and record the speech again. This field has no effect on prerecorded speech from other sources (see "Outgoing Speech Volume").

Outgoing Speech Volume

This field specifies a volume adjustment for all outgoing speech played on T1 or E1 cards. Any adjustment is applied to recorded speech as it is processed for playback. The value and its effect are the same as for Incoming Speech Volume (refer to the preceding section and to Table 5-4).

⇒ NOTE:

The incoming speech volume value is set on a per card basis.

The default value for digital (T1 or E1) cards is 707. As with the incoming speech volume, the default is based on network standards and performance and should be used unless experience with your system dictates a change. If you have trouble hearing speech phrases when played back at this level, you can increase the output volume by increasing the value in this field. With speech you supply, you also can rerecord the speech using a higher input gain to increase the recorded speech volume level (refer to the previous discussion of Incoming Speech Volume).

Outgoing Text Volume

The Outgoing Text Volume field specifies the outgoing volume of speech for Text-to-Speech applications. The range is 0–32000 (-6 to +6 dB). The default value is 1000.

T1 Configuration for CONVERSANT VIS 4ESS Applications

The following options should be used when connecting a CONVERSANT VIS Version 4.0 to a 4ESS via T1 when using the E&M protocol.

- CONVERSANT VIS T1 E&M Options

The following options should be set on the VIS T1 card when it is connected to an AT&T 4ESS.

1. Wink Timing: 230 msec
2. Maximum Digits in Called Number: 4 is typical
3. Post-wink Delay: 80 msec

- CONVERSANT VIS T1 E&M Fixed Parameters

1. Framing/Line Coding: D4/ZCS
2. Signaling: A or AB Robbed-bit E&M protocol
3. Incoming/Outgoing Start Dialing: wink/wink
4. Incoming/Outgoing Addressing: DTMF/DTMF
5. Timing Source: Looped Timed

- 4ESS Options

The following information is requested by AT&T when provisioning the 4ESS for a CONVERSANT VIS T1 connection. For purposes of this provisioning, "PBX" or "CPE" refer to the CONVERSANT VIS.

1. TYPE CPE: DIGITAL PBX/ACD (WITH DS1 INTERFACE)
2. 4E NETWORK SWITCHED BASED SERVICES: MEG (Megacom), MEG8 (Megacom 800), or MULTIQUEST* as desired
3. ACCESS TYPE: T1.5
4. TRUNK OPERATION: The VIS always allows two-way traffic. If you expect only incoming calls, it is recommended that you select 1W/IN TOWARDS CPE. If you expect only outgoing calls, it is recommended that you select 1W/OUT FROM CPE. If you expect two-way traffic, select 2WAY.
5. SUPERVISION: EM

-
6. ADDRESS SIGNALING (TYPE OF PULSING) TO CPE: DTMF(TT)
 7. ADDRESS SIGNALING TT DELAY: 70MS
 8. ADDRESS SIGNALING from CPE: DTMF(TT)
 9. START DIAL SIGNALING PROVIDED BY CPE: WK
 10. START DIAL SIGNALING PROVIDED TO CPE: WK (senderized operation)
 11. CPE DOES NOT SUPPORT DIFFERENT SIGNALING BIDIRECTIONALLY
 12. NUMBER OF DIGITS OUTPUTTED TO CPE: This number should match the number selected in the "Maximum Digits in Called Number" T1 option
 13. THE CPE CAN ACCEPT "O" AS THE FIRST DIGIT
 14. GLARE CONTROL: CPE WILL YIELD (WILL RELEASE)
 15. DIRECT INWARD DIAL (DID): N
 16. PBX ANSWER SUPERVISION WITHHELD: N
 17. NETWORK AUTHORIZATION CODES: N
 18. FRAME FORMAT: D4
 19. IS PBX SENDERIZED: YES
 20. CPE TIMING CAPABILITY: loop timed
 21. SOURCE OF SYNCHRONIZATION PROVIDED BY CPE: NONE
 22. SOURCE OF AUDIBLE RINGING ON CALLS TO CPE: PBX (CPE)

System Monitor

6

System Monitor Overview

System Monitor is used to verify that each incoming telephone line and its associated tip/ring (T/R) or T1 or E1 card is functional. Through the System Monitor component, you are able to see displays of the Voice Channel and Host Session Monitors.

Before performing any operational tests, verify that the required local central office connections are installed and activated and that the CONVERSANT Voice Information System (VIS) is configured to your specifications.

System Monitor Screen

From the CONVERSANT VIS VERSION 4.0 screen, highlight Voice System Administration and press **(ENTER)**. From the Voice System Administration screen, highlight System Monitor and press **(ENTER)**. The System Monitor screen appears (Figure 6-1).

System Monitor - Voice Channels					
Channel	Calls Today	Voice Service	Service Status	Caller Input	Dialed Digits
0	1	appl2	Talking		
1	1	appl4	Collect	8509	
2	3	appl7	Transfer		5312
3	1	appl3	DB	7328	
4	0		*MANOOS		
5	10		Talking		

HELP	PREV-PAGE	NEXTPAGE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
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Figure 6-1. System Monitor Screen

The System Monitor screen provides system status for each voice channel currently active on the VIS. The System Monitor screen displays the following information:

Channel

This first column in the System Monitor screen lists the existing channels on the VIS. Up to 12 lines are displayed in the System Monitor screen. Use the scrolling keys to bring up the next group of 12 voice channels.

Virtual channels have the character 'v' appended to the channel number. These channels are not voice channels but are instead used for "data-only" script applications. The number of virtual channels in the system depends on the software applications installed. In most systems, there are no virtual channels.

Calls Today

The VIS maintains data on the number of calls made to a particular channel within the system. The Calls Today column in the System Monitor screen lists this information. The Calls Today column reflects the number of calls received during the day for the particular channel since the last stop and start of the voice system. When the end of the day occurs or the voice system is stopped and then restarted, the number of calls in the Calls Today column starts at zero. Calls are monitored for a 24-hour period, on any day beginning at midnight (12 a.m.).

For virtual channels, the value in this is the number of times the service was used to run a data-only service.

Voice Service

The Voice Service column provides the name of the service associated with the corresponding voice or virtual channel.

Service Status

The System Monitor screen includes the various status states of each channel in the VIS. The following is a listing of the possible entries and their meanings in the Service Status column. All hardware states (for example, On Hook, Foes, Manoos, Broken) are marked with an asterisk.

This field is blank for virtual channels except when a transaction with a DIP is running (see below).

- *Broken — Channel is broken
- CCA — Channel is in process of call classification
- Coding — Channel is performing voice coding
- Collect — Channel is waiting for caller input
- dbdip1 — Channel is being used by local database DIP
- *Diagnose — Channel is on a card that is being diagnosed
- Dialing — Channel is dialing digits
- D-BROKEN — D-channel is broken (Primary Rate Interface [PRI] feature only)
- D-HWOOS — D-channel hardware is out-of-service (PRI feature only)
- D-INSERV — D-channel is in service (PRI feature only)
- D-MANOOS — D-channel is manually out-of-service (PRI feature only)
- D-NETOOS — D-channel network is out-of-service (PRI feature only)

-
- D-NONEX — D-channel is non-existent (PRI feature only)
 - DIP <0 34> — Channel is processing a request from Data Interface Process (DIP).
 - *Foods — Channel is in a facility out-of-service state
 - Host — Channel is currently accessing the host
 - *Hwoos — Channel is in a hardware out-of-service state (PRI feature only)
 - *Initing — Channel is on a card that is being initialized
 - *Manoos — Channel is manually out-of-service
 - *Netoos — Channel is in a network is out-of-service state (PRI feature only)
 - *Nonex — Channel is non-existent
 - Offhook — Channel is in service and has answered the call
 - *On Hook — Channel is in service and waiting for a call
 - *Pending — Channel is coming into an operational state
 - Talking — Channel is playing speech
 - Transfer — Channel is transferring a call
 - *UNKNOWN — Channel is experiencing a breakdown in communication

Caller Input

The last set of digits entered by the caller appears in the Caller Input column. For example, when a caller enters their account number in response to a transaction prompt, a series of touch-tone digits is registered in the VIS from the caller. This information is collected by the VIS and displayed in this column by the System Monitor.

This field always is blank for virtual channels.

Dialed Digits

The last set of digits dialed by the VIS during this transfer process is registered in the Dialed Digits column. In many cases, the application transfers the caller to an attendant. The numbers used in this transfer process are collected by the VIS and displayed in this column.

This field always is blank for virtual channels.

System Monitor Refresh Rate

By default, the VIS updates the voice channel status every five seconds. To change the setting to a specified amount of time, press **CHG RATE**. The Change Refresh Rate screen opens (Figure 6-2).

Change Refresh Rate
Refresh Rate: _____ seconds

Enter a new refresh rate from 1 to 30 seconds

HELP	CHOICES	SAVE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	---------	------	----------	----------	--------	----------	----------

Figure 6-2. Change Refresh Rate Screen

The valid rate range is 1–30 seconds. The shorter the refresh rate, the more CPU resources will be used to update the screen. Also, changing the refresh rate for the System Monitor also changes the refresh rate for the Host Session Monitor and vice versa.

After completing the form, press **SAVE** to close the Change Refresh Rate screen and save the new rate to memory. The new refresh rate will automatically be activated in the VIS.

Host Session Monitor Screen

The Host Session Monitor screen provides the status for the host sessions on the VIS. The host session monitor requires the inclusion of the **/vs/bin/ag** directory in the PATH of your **.profile** file. If you receive error messages while monitoring the host session, you should confirm that the default PATH (including the **/vs/bin/ag** directory) is being used by typing **echo \$PATH**. From the System Monitor screen, press **(CHG-KEYS)** then **(HOST MON)** to toggle to the Host Session Monitor screen (Figure 6-3).

Host Session Monitor			
Host Session	Channel	Service	State
1	1	appl2	Logged In
2	9	appl5	Not Available
3	10	appl8	Logging Out
4	11	appl11	Recovering
5	12	appl12	Transaction
6	13	appl14	Free

CHG RATE	VOICE MN				PRINT	FRM-MGMT	CHG-KEYS
----------	----------	--	--	--	-------	----------	----------

Figure 6-3. Host Session Monitor Screen

The Host Session Monitor screen gives a display of the system status for each host session. The following information is displayed in the Host Session Monitor screen:

Host Session

A host session serves as a link between a channel and the host. The status of all configured host sessions are displayed in the Host Session Monitor screen. A maximum of 64 host sessions may be configured in the system.

Channel

This column in the Host Session Monitor screen lists the channel associated with each host session on the VIS. Existing channels are displayed in groups of 12 in the Host Session Monitor screen. Use the scrolling keys to bring up the next group of 12 channels.

Service

The Service column provides the name of the service for the corresponding host session.

State

The host session monitor displays the state of the host. The host session can exist in any one of the following states:

- Free — Session was manually freed.
- Logged Out — Service is still assigned, but the session is logged out
- Logging Out — Temporary state; the session is in the process of logging out immediately after a manual **hlogout**
- Logging In — Temporary state; the session is in the process of logging in immediately after a manual **hassign** or **hlogin**
- Logged In — Occurs after a successful login; session is ready to accept a transaction
- Not Available — Session is not available for use
- Recovering — Occurs if the login procedure fails, the transaction ends somewhere other than the transaction base screen, or the recovery procedure ends somewhere other than the transaction base screen
- Transaction — Session is currently involved with a transaction
- Unassigned — Service was never assigned to the session or service was assigned and later manually deleted

Host Session Monitor Refresh Rate

By default, the VIS updates the host session status every five seconds. To change the setting to a specified amount of time, press **(CHG RATE)**. The Change Refresh Rate screen appears (Figure 6-4).

Change Refresh Rate
Refresh Rate: _____ seconds

Enter a new refresh rate from 1 to 30 seconds

HELP	PREVPAGE	NEXTPAGE	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	CHG-KEYS
------	----------	----------	----------	----------	--------	----------	----------

Figure 6-4. Change Refresh Rate Screen

The valid rate range is 1–30 seconds. The shorter the refresh rate, the more system resources will be used in the process. Also, changing the refresh rate for the Host Session Monitor also changes the refresh rate for the System Monitor and vice versa.

After completing the form, press **(SAVE)** to close the Change Refresh Rate screen and save the new rate to memory. The new refresh rate will automatically be activated in the VIS.

System Monitor Print Option

To obtain a complete printout of either the Voice Channel or Host Session Monitor report, press **(PRINT)** from the System Monitor screen. If you would like a copy of the Host Session Monitor report, press **(PRINT)** from the Host Session Monitor screen.

Make sure the VIS has all the proper printer connections. Refer to Appendix A, "FACE Features", for information on how to establish printer operations.

FACE Features



FACE Overview

This appendix provides information on the FACE (Framed Access Command Environment) interface. Through the AT&T FACE screen, you can execute a variety of administrative procedures including, disk operations, user login setup, and peripherals setup.

Each option is reviewed in this appendix. Refer to the *UNIX System V/386 Release 3.2 FACE User's/Administrator's Guide* for further details regarding FACE operations.

From the CONVERSANT VIS VERSION 4.0 screen, highlight AT&T FACE and press **ENTER** to open the AT&T FACE screen (Figure A-1).

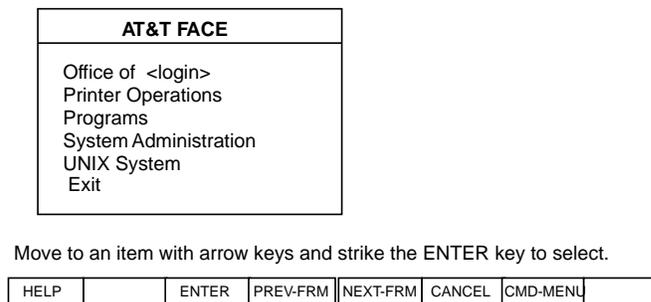


Figure A-1. AT&T FACE Screen

Office of <Login>

This area contains access to your Filecabinet, a Wastebasket feature, other users, and Office Preferences (color attributes, file permissions etc).

Printer Operations

From the AT&T FACE screen, highlight Printer Operations and press **ENTER** to open the Printer Operations screen (Figure A-2).

Printer Operations	
Available Forms and Formats	Re-start Print Scheduler
Change Default Printer	Start Printing Requests
Mount a Form or Printwheel	Stop Printing Requests
Move Print Requests	Unmount a Form or Printwheel
Printer Queue	User Priorities
Printer Status	

Move to an item with arrow keys and strike the ENTER key to select.

HELP		ENTER	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	
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Figure A-2. Printer Operations Screen

The Printer Operations entry allows you to:

- Display a list of current jobs queued to the printers
- Restart the printers
- Display status information for the printers

There are other options available through the Printer Operations screen, however these three features are the ones used most with the CONVERSANT Voice Information System (VIS).

⇒ NOTE:

If your parallel or serial printer has not been set up in advance, you will receive a warning message. This set up is performed through the System Administration option under the AT&T FACE screen.

Printer Queue — Displaying Queued Jobs

To display printer queue information, use the following procedure.

5. Select Printer Queue and press **(ENTER)** to open the Printer Queue screen. The Printer Queue screen includes the following information:
 - Printer name
 - Job ID number
 - User login of the user that queued the job
 - Time stamp of when the job was submitted
 - Which job is currently printing
6. Once you have seen the print jobs in the queue, press **(CANCEL)** to return to the Printer Operations screen without deleting any jobs.

⇒ NOTE:

Only 30 print jobs can be confirmed at one time.

Printer Queue — Canceling a Print Job

You can use the Printer Queue screen to cancel a job that is queued to print. To cancel a print job, use the following procedure.

1. From the Printer Operations screen, highlight Printer Queue and press **(ENTER)** to display the printer queue.
2. Highlight the print jobs you want to cancel by moving the cursor to the job with the cursor-control key. Press **(MARK)** for each selection.

⇒ NOTE:

Pressing **(ENTER)** while the cursor rests on a print job display causes you to leave the print job display. Use the cursor-control keys to move to the print job you want to delete. Then you must use **(MARK)** to mark jobs to be deleted.

3. Repeat Step 2 until you have selected all the print jobs you want to cancel and press **(ENTER)**.
4. After you have marked the items to delete from the printer queue (this prevents the specified jobs from being printed) and pressed **(ENTER)**, you receive a confirmation form.

-
5. If you want to delete the jobs listed on the confirmation form, press **(CONT)**.
If you do not want to delete the jobs listed, press **(CANCEL)**.

Restart Printer Scheduler

When you set up a printer, the software for it is started automatically. If you are having trouble getting something to print on your printer, you may need to restart the parallel or serial printer scheduler.

⇒ NOTE:

If you have trouble with printer output, be sure the power is turned on for the printer. Also check to see if the printer cable is plugged in securely and the printer is "On Line" or "Ready."

When the same printer is restarted, the jobs queued to this printer resume printing.

To restart the printer, use the following procedure.

1. At the Printer Operations screen, highlight Printer Restart and press **(ENTER)** to display the Printer Name form.
2. In the Printer Name screen, press **CHOICES** to see a list of the printers you have previously set up via Printer Setup. Select the printer you want to restart and press **(SAVE)**. You receive a confirmation message that the printer you specified has been restarted.
3. Press **(CONT)** to erase this screen and display the Printer Operations screen. Press **(CANCEL)** to close this screen and make the Printer Operations screen active. The printer resumes printing or is ready to print.

Printer Status

You can use the printer status form to display a list of the printers currently set up and information about those printers, including:

- Printer name
- Interface connection; that is, parallel or serial
- UNIX system port
- Whether the printers are currently accepting requests
- Which printer has been set up as the default destination

NOTE:

If you have trouble with printer output, make sure the power is turned on for the printer. Also check to see if the printer cable is plugged in securely and the printer is "On Line" or "Ready."

To display current printer status, use the following procedure:

1. From the Printer Operations screen, highlight Printer Status and press **(ENTER)** to display the Printer Status screen.
2. At the Printer Status screen, highlight either Change Status or Display Status and press **(ENTER)**.
3. If you selected Change Status, the Change Printer Status form appears. If there is only one printer associated with the system, the status for that printer is displayed.

If there is more than one printer, the printer status form is empty. Press **(CHOICES)** for a list of printers. Highlight the printer for which you want to change the status and press **(ENTER)**. The status of that printer is displayed and can be changed at this time.

4. If you selected Display Status, the Printer Status form appears. If there is only one printer associated with the system, the status for that printer is displayed.

If there is more than one printer, the Printer Status form is empty. Press **(CHOICES)** for a list of printers. Highlight the printer for which you want to change the status and press **(ENTER)**. The status of that printer is displayed.
5. Once you have seen the information you requested, press **(CONT)** or **(CANCEL)** to return to the Printer Status screen.
6. Press **(CANCEL)** to return to the Printer Operations screen.

Programs

The Mail Setup screen item allows you to give your system a node name so that other systems can send mail to your system and you can send mail to other systems.

To exchange electronic mail or files with another system, you and the other system user must set up and exchange some information. In general, you must do the following:

- Install the physical communication line to be used.
- Network (connect) the systems together with a modem, direct connection, or data switch.
- Exchange system names, mail names, password, data phone numbers if using a modem, and data communication line speeds.
- Assign a mail name to your system.
- Assign the mail login a password so that only other trusted systems can log in to your system.
- Provide the users of other systems with your mail name and mail login password.
- Enter information about the system receiving your mail (information you receive from the other system administrator).

Set Up the Communication Line

Before sending or receiving mail, you must configure the port using the Serial Ports Setup from the Peripherals Setup screen located under the System Administration screen.

Configure the serial port for a modem, computer, or other device (for example, data switch) depending on the physical connection between your system and the other system.

Set Up Your System to Receive Mail

To set up your system to receive mail from other systems, use the following procedure:

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. At the System Administration screen, highlight Mail Setup and press **(ENTER)** to display the Mail Setup screen.
3. At the Mail Setup screen, highlight This System and press **(ENTER)** to display the System Mail Name form.
4. With the cursor resting on the Your system's name field, type the name you want to call your system and press **(ENTER)**. The system name must be alphanumeric characters only, contain a maximum of eight characters, and cannot be the same name as another system.
5. With the cursor resting on the Mail login name field, type the mail login name for your system and press **(ENTER)**. The mail login must be alphanumeric characters only and contain a maximum of eight characters.
6. With the cursor resting on the Should mail have a password? field, select YES or NO or press **(CHOICES)** to make a selection from a screen.

The mail password applies to the mail login that other systems use to call your system. If you change the password, but do not change the login, the password will apply to the mail login that currently appears on the form.

7. Press **(SAVE)** when you complete the form.

The following confirmation message appears:

```
If you strike CONT to confirm, other systems will
be able to send mail to you on your system, <system
name>.
```

```
To send or receive mail, a serial port connection
must be setup first. This may be done by selecting
Serial Ports Setup in the Peripherals Setup
screen.
```

8. If you answered YES to Should mail have a password? the screen clears when you press **(CONT)** and you are prompted for the mail password. If your system previously has a password, you are prompted for the old password, then for the new password. The new password must differ from the old password by at least three characters and must not be a reversed or circular shift of the mail login.
9. After you give the new password, the Mail Setup screen becomes active.

Set Up This System to Send Mail to Other Systems

Set up your system to send mail to other systems by using the following procedure:

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. At the System Administration screen, highlight Mail Setup and press **(ENTER)** to display the Mail Setup screen.
3. At the Mail Setup screen, highlight Other Systems and press **(ENTER)** to display the Functions for Other Systems screen.
4. Highlight Add and press **(ENTER)**. This adds information to the systems file about the system with which you want to communicate. The Add System screen appears.
5. With the cursor resting on the System's name field, enter the name of the other system. You can get the system's name from users of the other system. The system name must be alphanumeric characters only, contain a maximum of eight characters, and cannot be the same name as another system.
6. With the cursor resting on the Device name field, enter the name of the device.
7. With the cursor resting on the Mail login name field, enter the mail login name. Users of the other system should provide you with the mail login name. The mail login name is actually the uucp login for the other system. The mail login name must be alphanumeric characters only and contain a maximum of eight characters.
8. With the cursor resting on the Mail password field, enter the system's mail password. Users of the other system should provide you with the mail password. This is actually the uucp password for the other system. The mail password must be alphanumeric characters only and contain a maximum of eight characters.
9. With the cursor resting on the Data phone number field, enter the phone number of the other system if your systems are connected by a modem and telephone lines. The phone number cannot contain any spaces between the numbers. The format of the Data phone number could be as follows:

9=1209329329-

The first 9 is used to dial a number outside of the building. The "=" pauses for a dial tone. The next three digits (120) are the area code. The last seven digits are the telephone number. The "-" causes the system to delay before hanging up. This is useful for long distance calls since it might take

some time to make the connection. If your systems are connected by a data switch or a direct line, enter the system name instead of the telephone number.

10. With the cursor resting on the Communication data speed field, press **(CHOICES)** and select the desired data line speed from the screen.

⇒ NOTE:

The Communication data speed must be the same as the device speed for the serial port that you set up through Peripherals Setup.

11. With the cursor resting on the Days when calls are permitted field, press **(CHOICES)** and select the desired days from the screen. Calls will only be made to the other system on the days that you specify.
12. With the cursor resting on the Hours when calls are permitted field, press **(CHOICES)** and select the desired hours from the screen. Calls will only be made to the other system during the hours that you specify.
13. Press **(SAVE)** when you have completed the form.
14. When the confirmation form appears, showing the information you entered, check to make sure the information is correct.
15. Press **(CONT)** to continue or press **(CANCEL)** to cancel the mail setup.

Change Set Up for Other Systems

To change other systems, use the following procedure:

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. At the System Administration screen, highlight Mail Setup and press **(ENTER)** to display the Mail Setup screen.
3. At the Mail Setup screen, highlight Other Systems and press **(ENTER)** to display the Functions for Other Systems screen.
4. Highlight Change and press **(ENTER)** to display the Change System form.
5. With the cursor resting on the System's name field, press **(CHOICES)**, then select the system to be changed from the list on the screen.

If you type the name of a system that does not exist, the following message is displayed:

```
That system does not exist. Type another system
name.
```

Once you have selected a system name, the remaining fields on the form are filled with the existing values.

6. With the cursor resting on the "Device name" field, press **(CHOICES)**, then select the device to be changed from the list on the screen.
7. If the other system's mail login name has changed, you need to change the mail login name. Move the cursor to the Mail login name field and enter the changed mail login name. The mail login name must be alphanumeric characters only and contain a maximum of eight characters.
8. If the other system's mail password has changed, you need to change the mail password. Users of the other system should provide you with the new mail password. Move the cursor to the Mail password field and enter the system's mail password. The mail password must be alphanumeric characters only and contain a maximum of eight characters.

-
9. If the phone number has changed for the other system, you need to change the data phone number if your systems are connected by modems and telephone lines. Move the cursor to the Data phone number field and enter the phone number of the other system. The phone number cannot contain any spaces between numbers. The format of the Data phone number could be as follows:

9=1209329329-

The first 9 is used to dial a number outside of the building. The "=" pauses for a dial tone. The next three digits (120) are the area code. The last seven digits are the telephone number. The "-" causes the system to delay before hanging up. This is useful for long distance calls since it might take some time to make the connection.

If your systems are connected by a data switch or a direct line and the system's name has changed, enter the new system name in the Data phone number field.

10. If the speed of the modem (as provided by user's of the other system) changes, you need to change the data communications speed. Move the cursor to the Communication data speed field, press **(CHOICES)** and select the desired data line speed from the screen.
11. To change the days when calls are permitted, move the cursor to the Days when calls are permitted field, press **(CHOICES)** and select the desired days from the screen. Calls will only be made to the other system on the days that you specify.
12. To change the hours when calls are permitted, move the cursor to the Hours when calls are permitted field, press **(CHOICES)** and select the desired hours from the screen. Calls will only be made to the other system during the hours that you specify.
13. Press **(SAVE)** when you have changed all appropriate fields.

Delete Other Systems (Previously Set Up)

To delete other systems, use the following procedure:

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. At the System Administration screen, highlight Mail Setup and press **(ENTER)** to display the Mail Setup screen.
3. At the Mail Setup screen, highlight Other Systems and press **(ENTER)** to display the Functions for Other Systems screen.
4. Highlight Delete and press **(ENTER)** to display the Delete System form.
5. With the cursor resting on the System's name field, press **(CHOICES)** and select the system from the screen.

If less than three systems have been added previously, the system name appears in the field. Toggle through the choices until the appropriate one is in the field and press **(SAVE)**.

6. When the confirmation form appears to show the system you chose, check to make sure the information is correct.
7. Press **(CONT)** if the information is correct. The system you chose is deleted.

If the information is not correct, press **(CANCEL)** to stop the process and return to the Mail Setup screen.

Display Other Systems (Previously Set Up)

To display information about other systems set up for mail, use the following procedure:

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. At the System Administration screen, highlight Mail Setup and press **(ENTER)** to display the Mail Setup screen.
3. At the Mail Setup screen, highlight Other Systems and press **(ENTER)** to display the Functions for Other Systems screen.
4. Highlight Display and press **(ENTER)** to display the Display System form.
5. With the cursor on the System's name field, press **(CHOICES)**. If you have more than three systems, a list of systems appears. Select a system and the remaining fields on the form are filled in. If you have added three or fewer systems, you can toggle between the system names until the appropriate one is displayed.

You can change the values of the fields, but no changes are made in the systems file.

6. When you are finished, press **(CONT)** to continue to the Mail Setup screen.

System Administration

From the AT&T FACE screen, highlight System Administration and press **(ENTER)** to open the System Administration screen (Figure A-3).

System Administration	
Backup to Removable Media	Restore from Removable Media
Change Password	Schedule Automatic Task
Date and Time	Shutdown
Disk Operations	Software Setup
File System Operations	System Information
Mail Setup	Tape Operations
Peripherals Setup	User Logins

Move to an item with arrow keys and strike the ENTER key to select.

HELP		ENTER	PREV-FRM	NEXT-FRM	CANCEL	CMD-MENU	
------	--	-------	----------	----------	--------	----------	--

Figure A-3. System Administration Screen

Through the System Administration screen, you can perform many VIS administrative functions, including password changes, media backups and restores, and peripheral setups, to name just a few.

Backup

⇒ NOTE:

The AT&T FACE administration package provides backup and restore features. However, instead of using the UNIX backup and restore procedure, it is strongly recommended that you use the System Backup and Restore procedures set forth in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112. In addition, you should not attempt to backup Script Builder applications via the AT&T FACE administration package.

Use the backup procedure to insure that a current copy of the UNIX system file system and directories exists on floppy disks or cartridge tape. It is necessary to backup the system on a scheduled basis so if a system failure occurs or the file systems are corrupted, a backup copy of the software can be loaded into the system. It is also necessary to back up application code when new software is added.

To backup the entire contents of the mounted file systems on the disk, use the System Backup procedure given later in this chapter.

The frequency of backup depends on the type of applications being handled by the VIS. If you make many changes to files, it is recommended that a backup be performed on a daily or weekly basis. It is advisable to back up when the system is lightly loaded possibly late at night or early in the morning.

You can back up all files (system and user), only the files updated since the last backup, an individual user's files, or selected files or directories.

When you back up to floppy disk, the system tells you the approximate number of formatted floppy disks you need and the approximate time it takes to do the backup.

The Backup History function can be used to determine when the last system backup and the last incremental backups were done or if they were ever done.

The ways in which you can backup your system are as follows:

- Personal Backup

All the files in the user's home directory are copied to the floppy or tape.

- Personal Backup

You can use this function to specify file names (directories or files) that are located in the user's home directory to back up.

- System Backup

The system backup requires system administration privileges. All system and user files that have been modified or created since the system was installed are backed up to floppies or tape. The installation date is the date of the last file that was installed at installation time. The search for files to back up starts from “/” (the root file system) and includes all mounted file systems.

Currently, the contents of certain system directories (for example /usr/bin) are not normally backed up. If you want to back up these directories, use the **touch** command on the directory contents. This command causes the specified directories to be backed up even though they have not been modified or created since the system was installed. If you do not use touch on these directories, then only system files that are modified after system installation (for example /etc/passwd) are backed up and later restored.

When backing up to floppy disk, several formatted floppy disks may be required, depending on the amount of information you have on your system.

⇒ **NOTE:**

Copying only the files that have been modified or created since installation prevents overwriting the contents of system directories like **/usr/bin** or **/etc/bin** because the contents of these directories (especially the commands) are not normally modified after installation. This means that if the contents of these system directories are lost, the lost files must be recovered from the system installation floppies.

■ **Incremental System Backup**

The incremental system backup requires system administration privileges. All the system and user files that have been modified or created since the last system or incremental backup are copied to the floppy or tape.

■ **System Backup of Users**

User files are backed up to the floppy or tape. You have the option to back up all user files or to back up one or more selected user files.

■ **Selective System Backup**

Regular files or the contents of directories may be backed up. The path name specified may be anywhere on a mounted file system.

⇒ **NOTE:**

Since any file(s) may be specified (including system directories like /bin), on restore, you are asked if you want to overwrite the existing file. The default is no because, by default, a file on disk with a date newer than the restore file will not be overwritten. Again, this is a safeguard to prevent you from running into problems while doing a restore after system upgrade.

- **Speech Backup**

Speech files are backed up to floppy disk or tape. You have the option to back up all talk files and phrases or selected talk files and phrases.

⇒ NOTE:

If you are backing up speech associated with a specific application, use the procedure given in Chapter 2, "Application Administration."

Backup History

You should follow a regular schedule for performing backup. When you back up your system, a record of the date and time is made. The Backup History form displays the last date and time you performed a system or incremental backup.

To check the Backup History, use the following procedure.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)** to display the System Administration screen.
2. From the System Administration screen, highlight Backup to Removable Media and press **(ENTER)** to display the Backup to Removable Media screen.
3. From the Backup to Removable Media screen, highlight Backup History and press **(ENTER)** to display the Backup History form.

The date and time the last system and/or incremental backups were performed are displayed in the Backup History form. A sample Backup History form is shown below.

```
The last system backup was done on  
Thu June 4 10:31:12 EST 1992.
```

```
The last incremental backup was done on  
Fri June 5 08:30:12: EST 1992.
```

If you have never done a system or incremental backup, the Backup History form displays the following message:

```
No complete backup has been done.  
No incremental backup has been done.
```

4. Press **(CANCEL)** to close this frame and return to the Backup to Removable Media screen.

Personal Backup

To copy all files in your home directory to the removable media, use the Backup Files under <user's home directory> function where <user's home directory> is the name of your home directory. You cannot backup other user's files using Personal Backup. The following example assumes your home directory is **/usr/abc**.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)** to display the System Administration screen.
2. From the System Administration screen, highlight Backup to Removable Media and press **(ENTER)** to display the Backup to Removable Media screen.
3. From the Backup to Removable Media screen, highlight Personal Backup and press **(ENTER)**. The Personal Backup screen is displayed.
4. From the Personal Backup screen, highlight Backup Files under /usr/abc and press **(ENTER)** to display the Select Removable Media screen.
5. Depending on what options are available on your system and what your needs are, select the drive that you want to use for this backup procedure by highlighting one of the three choices (floppy disk drive 0, floppy disk drive 1, or cartridge tape) and pressing **(ENTER)**. Once you have selected the media, you will receive the following message:

```
Calculating approximate number of <floppies,  
tapes> required. Please wait.
```

Your system estimates the number of floppies or tapes needed to hold all the files to be backed up and how much time the backup will take. Then, follow the instructions displayed on the screen on how to insert and remove the previously formatted floppy disks or tapes and how to number them in sequence.

The following is an example of these instructions:

```
The backup will need approximately:
```

```
1 formatted 1.44 Mbyte 3.5" floppy disk(s) or
```

```
1 formatted 720 Kbyte 3.5" floppy disk(s)
```

```
and will take no more than 1 minute.
```

```
Please insert the first floppy disk. The floppy  
disks(s) you are using for the backup MUST be for-  
matted. Be sure to number the floppy disks consec-  
utively in the order they will be inserted. Strike  
ENTER when ready.
```

-
6. Insert a blank, formatted floppy disk or a cartridge tape and press `ENTER`.

⇒ NOTE:

Tapes do not have to be formatted.

The floppy disks used to back up your system must be formatted in UNIX system format. Refer to the "Format UNIX System Floppy Disk" on page A-34 in this appendix.

Once the backup is in progress, you will receive the following instruction:

```
Backup in progress. Do not remove the floppy/tape.
```

7. In addition, if the backup spans multiple floppies or tapes, you will be notified when to remove the current floppy or tape and insert the next one in sequence.

When the contents of floppy 1 have been backed up, for example, the following instructions appear:

```
You may remove floppy number 1.  
To exit, please press 'q' followed by ENTER.
```

```
To continue, insert floppy number 2  
and strike the ENTER key.
```

If you type **q** to exit, the following message is displayed:

```
You have canceled the Backup to Removable Media.
```

⇒ NOTE:

As you remove each floppy disk or tape, attach a label containing subject, date, and the number of the floppy disk or tape. File the floppy disk in its envelope. If you write on a label already attached to the floppy disk, only use a felt-tip or nylon-tip pen. Do not use a ball-point pen to write on a label already attached; this can cause damage to the floppy disk.

8. Continue inserting, removing, and labeling floppies or tapes until a message appears indicating the backup is complete:

```
Backup is now done. You may remove the floppy.
```

9. Remove the last floppy disk or tape when the system informs you that it has completed the backup.

Selective Personal Backup

You may back up selected files and directories under your home directory. The following procedure assumes your home directory is **/usr/abc**. You cannot back up files located outside your home directory using this function.

1. From the Backup to Removable Media screen, highlight Personal Backup and press **(ENTER)** to display the Personal Backup screen.
2. From the Personal Backup screen, highlight Selective Backup of Files under **/usr/abc** and press **(ENTER)**. The Select Removable Media screen appears.
3. Enter the file names or directories to be copied (shell metacharacters can be used for the file or directory names) and press **(SAVE)**.
4. Depending on what options are available on your system and what your needs are, select the drive that you want to use for this backup procedure by highlighting one of the three choices (floppy disk drive 0, floppy disk drive 1, or cartridge tape) and pressing **(ENTER)**. Once you have selected the media, you will receive the following message:

```
Calculating approximate number of <floppies,  
tapes> required. Please wait.
```

Your system estimates the number of floppies or tapes needed to hold all the files to be backed up and how much time the backup will take. Then, follow the instructions displayed on the screen on how to insert and remove the previously formatted floppy disks or tapes and how to number them in sequence.

The following is an example of these instructions:

```
The backup will need approximately:
```

```
1 formatted 1.44 Mbyte 3.5" floppy disk(s) or
```

```
1 formatted 720 Kbyte 3.5" floppy disk(s)
```

```
and will take no more than 1 minute.
```

```
Please insert the first floppy disk. The floppy  
disks(s) you are using for the backup MUST be for-  
matted. Be sure to number the floppy disks consec-  
utively in the order they will be inserted. Strike  
ENTER when ready.
```

5. Insert a blank, formatted floppy disk or a cartridge tape and press **(ENTER)**.

NOTE:

The floppy disks used to back up your system must be formatted in UNIX system format. Refer to the "Format UNIX System Floppy Disk" on page A-34 in this appendix.

Once the backup is in progress, you will receive the following instruction:

Backup in progress. Do not remove the floppy/tape.

6. In addition, if the backup spans multiple floppies or tapes, you will be notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been backed up, for example, the following instructions appears:

You may remove floppy number 1.

To exit, please press 'q' followed by ENTER.

To continue, insert floppy number 2
and strike the ENTER key.

If you type q to exit, the following message is displayed:

You have canceled the Backup to Removable Media.

 **NOTE:**

As you remove each floppy disk or tape, attach a label containing subject, date, and the number of the floppy disk or tape. File the floppy disk in its envelope. If you write on a label already attached to the floppy disk, only use a felt-tip or nylon-tip pen. Do not use a ball-point pen to write on a label already attached; this can cause damage to the floppy disk.

7. Continue inserting, removing, and labeling floppies or tapes until a message appears indicating the backup is complete:

Backup is now done. You may remove the floppy.

8. Remove the last floppy disk or tape when the system informs you that it has completed the backup.

Backup Users

The backup users function allows you to back up the users' files in the user's home directory to floppy disk or cartridge tape. You have the option to:

- Back up all users
- Back up one or more selected users

You must have system administration privileges to use this function. Only user logins are allowed to be backed up.

Use the following procedure to back up user's files.

1. From the Backup to Removable Media screen, highlight System Backup and press `(ENTER)` to display the System Backup screen.
2. From the System Backup screen, highlight Backup Users and press `(ENTER)`. The Select Removable Media screen appears.
3. Depending on what options are available on your system and what your needs are, select the drive that you want to use for this backup procedure by highlighting one of the three choices (floppy disk drive 0, floppy disk drive 1, or cartridge tape) and pressing `(ENTER)`. Once you have selected the media, you will receive the following message:

```
Computing the number of files to be backed up.  
Please wait.
```

Your system estimates the number of floppies or tapes needed to hold all the files to be backed up and how much time the backup will take. Then, follow the instructions displayed on the screen on how to insert and remove the previously formatted floppy disks or tapes and how to number them in sequence.

4. Assume the user logins abc and jab have been added to your system. The following is a sample Backup Users screen that appears.

```
All  
install  
abc  
jab
```

5. You may need to press `(CHOICES)` to display the pop-up screen of login names. If you do not, you receive a list of user login names automatically. Choose a login name from the list of login names. Move to an item with the arrow key and press `(MARK)` to select login names. When you are finished marking the user login names, press `(ENTER)`.

You can also select logins by typing the login name with the cursor resting on the User's login name field. If you enter an invalid login name, you receive the following error message:

```
<User's login name> is not a valid login name.
```

-
6. Insert a blank, formatted floppy disk or a cartridge tape and press `ENTER`.

⇒ NOTE:

The floppy disks used to back up your system must be formatted in UNIX system format. Refer to the "Format UNIX System Floppy Disk" on page A-34 in this appendix.

Once the backup is in progress, you will receive the following instruction:

```
Backup in progress. Do not remove the floppy/tape.
```

7. In addition, if the backup spans multiple floppies or tapes, you will be notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been backed up, for example, the following instructions appears:

```
You may remove floppy number 1.  
To exit, please press 'q' followed by ENTER.
```

Once the backup is in progress, you will receive the following instruction:

```
Backup in progress. Do not remove the floppy/tape.
```

8. In addition, if the backup spans multiple floppies or tapes, you will be notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been backed up, for example, the following instructions appears:

```
You may remove floppy number 1.  
To exit, please press 'q' followed by ENTER  
  
To continue, insert floppy number 2  
and strike the ENTER key.
```

If you type **q** to exit, the following message is displayed:

```
You have canceled the Backup to Removable Media.
```

⇒ NOTE:

As you remove each floppy disk or tape, attach a label containing subject, date, and the number of the floppy disk or tape. File the floppy disk in its envelope. If you write on a label already attached to the floppy disk, only use a felt-tip or nylon-tip pen. Do not use a ball-point pen to write on a label already attached; this can cause damage to the floppy disk.

9. Continue inserting, removing, and labeling floppies or tapes until a message appears indicating the backup is complete:

```
Backup is now done. You may remove the floppy.
```

10. Remove the last floppy disk when the system informs you that it has completed the backup.

Backup UNIX System

The system backup function backs up all system and user files (in all mounted file systems) that have been modified or created since the system was installed.

⇒ NOTE:

The System Backup function does not back up a complete image of your entire file system. Only the system and user files that have been modified or created since the system was last installed are backed up.

You must have system administrator privileges to use this function.

Use the following procedure to do a system backup.

1. From the Backup to Removable Media screen, highlight System Backup and press `(ENTER)` to display the System Backup screen.
2. From the System Backup screen, highlight Backup System and press `(ENTER)` to display the Select Removable Media screen.
3. Depending on what options are available on your system and what your needs are, select the drive that you want to use for this backup procedure by highlighting one of the three choices (floppy disk drive 0, floppy disk drive 1, or cartridge tape) and pressing `(ENTER)`. Once you have selected the media, you will receive the following message:

```
Calculating approximate number of <floppies,  
tapes> required. Please wait.
```

Your system estimates the number of floppies or tapes needed to hold all the files to be backed up and how much time the backup will take. Then, follow the instructions displayed on the screen on how to insert and remove the previously formatted floppy disks or tapes and how to number them in sequence.

The following is an example of these instructions:

```
The backup will need approximately:
```

```
1 formatted 1.44 Mbyte 3.5" floppy disk(s) or
```

```
1 formatted 720 Kbyte 3.5" floppy disk(s)
```

```
and will take no more than 1 minute.
```

```
Please insert the first floppy disk. The floppy  
disks(s) you are using for the backup MUST be for-  
matted. Be sure to number the floppy disks consec-  
utively in the order they will be inserted. Strike  
ENTER when ready.
```

4. Insert a blank, formatted floppy disk or a cartridge tape and press `(ENTER)`.

⇒ NOTE:

The floppy disks used to back up your system must be formatted in UNIX system format. Refer to "Format UNIX System Floppy Disk" on page A-34 in this appendix.

Once the backup is in progress, you will receive the following instruction:

Backup in progress. Do not remove the floppy/tape.

5. In addition, if the backup spans multiple floppies or tapes, you will be notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been backed up, for example, the following instructions appear:

You may remove floppy number 1.
To exit, please press `q` followed by ENTER

To continue, insert floppy number 2
and strike the ENTER key.

If you type **q** to exit, the following message is displayed:

You have canceled the Backup to Removable Media.

⇒ NOTE:

As you remove each floppy disk or tape, attach a label containing subject, date, and the number of the floppy disk or tape. File the floppy disk in its envelope. If you write on a label already attached to the floppy disk, only use a felt-tip or nylon-tip pen. Do not use a ball-point pen to write on a label already attached; this can cause damage to the floppy disk.

6. Continue inserting, removing, and labeling floppies or tapes until a message appears indicating the backup is complete:

Backup is now done. You may remove the floppy.

7. Remove the last floppy disk when the system informs you that it has completed the backup.

Incremental UNIX System Backup

The incremental system backup function backs up only those files in all mounted file systems that have been modified or created since the last system or incremental backup. An incremental system backup differs from a system backup because a system backup backs up only those files in all mounted file systems that have been modified or created since the system was installed.

You must have system administration privileges to use this function.

Use the following procedure to do an incremental system backup.

1. From the AT&T FACE screen, highlight System Administration and press `(ENTER)`. The System Administration screen is displayed.
2. At the System Administration screen, highlight Backup to Removable Media screen and press `(ENTER)`. The Backup to Removable Media screen appears.
3. From the Backup to Removable Media screen, highlight System Backup and press `(ENTER)`. The System Backup screen appears.
4. From the System Backup screen, highlight Incremental System Backup and press `(ENTER)`. The Select Removable Media screen appears.
5. Depending on what options are available on your system and what your needs are, select the drive that you want to use for this backup procedure by highlighting one of the three choices (floppy disk drive 0, floppy disk drive 1, or cartridge tape) and pressing `(ENTER)`. Once you have selected the media, you will receive the following message:

```
Calculating approximate number of <floppies,  
tapes> required. Please wait.
```

Your system estimates the number of floppies or tapes needed to hold all the files to be backed up and how much time the backup will take. Then, follow the instructions displayed on the screen on how to insert and remove the previously formatted floppy disks or tapes and how to number them in sequence.

The following is an example of these instructions:

```
The backup will need approximately:  
1 formatted 1.44 Mbyte 3.5" floppy disk(s) or  
1 formatted 720 Kbyte 3.5" floppy disk(s)  
and will take no more than 1 minute.
```

```
Please insert the first floppy disk. The floppy  
disks(s) you are using for the backup MUST be for-  
matted. Be sure to number the floppy disks consec-  
utively in the order they will be inserted. Strike  
ENTER when ready.
```

6. Insert a blank, formatted floppy disk or a cartridge tape and press `ENTER`.

⇒ NOTE:

The floppy disks used to back up your system must be formatted in UNIX system format. Refer to "Format UNIX System Floppy Disk" on page A-34 in this appendix.

Once the backup is in progress, you will receive the following instruction:

`Backup in progress. Do not remove the floppy/tape.`

7. In addition, if the backup spans multiple floppies or tapes, you will be notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been backed up, for example, the following instructions appears:

`You may remove floppy number 1.
To exit, please press 'q' followed by ENTER`

`To continue, insert floppy number 2
and strike the ENTER key.`

If you type **q** to exit, the following message is displayed:

`You have canceled the Backup to Removable Media.`

⇒ NOTE:

As you remove each floppy disk or tape, attach a label containing subject, date, and the number of the floppy disk or tape. File the floppy disk in its envelope. If you write on a label already attached to the floppy disk, only use a felt-tip or nylon-tip pen. Do not use a ball-point pen to write on a label already attached; this can cause damage to the floppy disk.

8. Continue inserting, removing, and labeling floppies or tapes until a message appears indicating the backup is complete:

`Backup is now done. You may remove the floppy.`

9. Remove the last floppy disk when the system informs you that it has completed the backup.

Selective UNIX System Backup

The selective system backup function backs up specified files or contents of directories in mounted file systems. The full path name must be specified.

You must have system administration privileges to use this function.

Use the following procedure to do a selective system backup.

1. From the AT&T FACE screen, highlight System Administration and press `(ENTER)`. The System Administration screen is displayed.
2. At the System Administration screen, highlight Backup to Removable Media and press `(ENTER)`. The Backup to Removable Media screen is displayed.
3. At the Backup to Removable Media screen, highlight System Backup and press `(ENTER)`. The System Backup screen appears.
4. From the System Backup screen, highlight Selective System Backup and press `(ENTER)`. The Select Removable Media screen appears.
5. Depending on what options are available on your system and what your needs are, select the drive that you want to use for this backup procedure by highlighting one of the three choices (floppy disk drive 0, floppy disk drive 1, or cartridge tape) and pressing `(ENTER)`. The selective system backup form appears.
6. Enter one or more files or directories separated by spaces and press `(SAVE)`. If the file or directory cannot be found, you will receive the following message:

```
<File name> cannot be found.
```

Once you have selected the files or directories, you receive the following message:

```
Calculating approximate number of <floppies,  
tapes> required. Please wait.
```

Your system estimates the number of floppies or tapes needed to hold all the files to be backed up and how much time the backup will take. Then, follow the instructions displayed on the screen on how to insert and remove the previously formatted floppy disks or tapes and how to number them in sequence.

The following is an example of these instructions:

```
The backup will need approximately:  
1 formatted 1.44 Mbyte 3.5" floppy disk(s) or  
1 formatted 720 Kbyte 3.5" floppy disk(s)  
and will take no more than 1 minute.
```

Please insert the first floppy disk. The floppy disks(s) you are using for the backup MUST be formatted. Be sure to number the floppy disks consecutively in the order they will be inserted. Strike ENTER when ready.

7. Insert a blank, formatted floppy disk or a cartridge tape and press `ENTER`.

⇒ NOTE:

The floppy disks used to back up your system must be formatted in UNIX system format. Refer to "Format UNIX System Floppy Disk" on page A-34 in this appendix.

Once the backup is in progress, you will receive the following instruction:

Backup in progress. Do not remove the floppy/tape.

8. In addition, if the backup spans multiple floppies or tapes, you will be notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been backed up, for example, the following instructions appears:

You may remove floppy number 1.
To exit, please press 'q' followed by ENTER

To continue, insert floppy number 2
and strike the ENTER key.

If you type **q** to exit, the following message is displayed:

You have canceled the Backup to Removable Media.

⇒ NOTE:

As you remove each floppy disk or tape, attach a label containing subject, date, and the number of the floppy disk or tape. File the floppy disk in its envelope. If you write on a label already attached to the floppy disk, only use a felt-tip or nylon-tip pen. Do not use a ball-point pen to write on a label already attached; this can cause damage to the floppy disk.

9. Continue inserting, removing, and labeling floppies or tapes until a message appears indicating the backup is complete:

Backup is now done. You may remove the floppy.

10. Remove the last floppy disk when the system informs you that it has completed the backup.

Speech Backup

⇒ NOTE:

The following backup procedure and the associated restore procedure do not check to see if the talkfile number is already used by another application. This can cause speech on the disk to be overwritten. It is therefore highly recommended that you back up speech associated with a specific application by selecting Speech in the Backup Components screen. Refer to Chapter 2, "Application Administration", for information on backing up an application.

⇒ NOTE:

If the VIS is co-resident with AUDIX Voice Power, refer to Chapter 5, "Upgrade Procedures," of *AUDIX Voice Power R2.1.1 Installation and Maintenance Guide*, 585-310-108, for information on backing up AUDIX Voice Power speech files.

The speech database backup function backs up the entire speech database or specific phrases. You must be logged in as **root** to use this function.

Use the following procedure to perform a speech backup.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**. The System Administration screen is displayed.
2. From the System Administration screen, highlight Backup to Removable Media and press **(ENTER)**. The Backup to Removable Media screen is displayed.
3. From the Backup to Removable Media screen, highlight Speech Backup and press **(ENTER)**. The Speech Backup screen is displayed.
4. From the Speech Backup screen, highlight Backup all Talkfiles/Phrases or Selective Backup of Talkfiles/Phrases and press **(ENTER)**.
5. If you selected Backup All Talkfiles/Phrases, the Select Removable Media screen appears.

Depending on the options available on your system and your needs, select the appropriate media for storing your file(s) by highlighting cartridge tape and pressing **(ENTER)**.

6. If you selected Selective Backup of Talkfiles/Phrases, a form appears. Type the names of the speech files and phrases you want to back up. When all speech file and phrase names are entered, press **(ENTER)**.
7. Insert a formatted floppy disk and follow the instructions displayed on the screen to insert and remove the previously-formatted floppy disks or tapes and how to number them in sequence.

-
8. The following message is displayed after you insert the first floppy or tape:

```
Computing the number of files to be backed up.  
Please wait.
```

Your system estimates the number of floppies or tapes needed to hold all the files to be backed up and how much time the backup takes.

9. If the backup spans multiple floppies or tapes, you are notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been backed up, for example, the following instructions are displayed:

```
Please remove the disk and label it as disk #1.  
  
Please insert new disk...then type <Enter> to con-  
tinue.
```

⇒ NOTE:

As you remove each floppy disk or tape, attach a label containing the subject, date, and the number of the floppy disk or tape. File the floppy disk in its envelope. If you write on a label already attached to a floppy disk, only use a felt-tip or nylon-tip pen. Do not use a ball-point pen to write on a label already attached to a floppy disk; this can cause damage to the disk.

10. Continue inserting, removing, and labeling floppies or tapes until a message appears indicating that the backup is complete.
11. Remove the last floppy disk when the system informs you that it has completed the backup.

Change Password

A password is a code word that should be known only by its creator. The password secures your login so no unauthorized person can enter the system and have access to your files. Once a password has been assigned, it must be entered with your login when you want to use the system.

After you have responded to the login: prompt, the password prompt appears on the screen. When you type in your password, it does not appear on the screen. This prevents your password from being seen by someone else.

Each password is required to be at least six characters or longer. The password must have two alphabetic characters and at least one numeric character in the first eight characters.

Choose a password that is not common and is hard to guess. Your password should be changed from time to time to safeguard its secrecy. You can only change passwords for your own login name.

Changing Your Own Password

To change the password that is associated with your login, use the following procedure.

1. Log in using the login name associated with the password you want to change.
2. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
3. From the System Administration screen, highlight Change Password and press **(ENTER)**. The screen clears and the UNIX system passwd command is executed. At the top of the screen, the following message is displayed:

```
Strike BREAK or DEL to return to AT&T
Administration without changing your password.
```

4. When prompted for your current password (Old password:), type the password you used when you logged in.
5. When prompted for the new password (New Password:), enter the new password. The password you enter is not displayed on the screen.
6. When prompted to repeat the new password (Reenter new password:), type your new password again.

If the two password entries are the same, the password is assigned. If the two password entries do not match, the following message is displayed:

```
They don't match; try again.
New password:
```

You receive an error message if:

- You enter the old password incorrectly
 - The new password is not six characters long
 - The new password does not have two alphabetic characters and at least one special character in the first eight
 - The password resembles the login name by being a reverse or circular shift
 - The new password does not differ from the old password by three or more characters
 - The new password includes a space or a colon (:).
7. After you reenter the new password, you are prompted to press **(ENTER)** to continue. Press **(ENTER)** to return to the System Administration screen.

Date and Time

The system clock can be changed using the Date and Time feature. You can use the Date and Time form to display the current setting, change a value, and verify that the appropriate changes have been made. You must have system administration privileges to use this feature.

Before resetting the date or time, notify all users that the date will be reset. Changing the date and/or time may disrupt make, cron, a compile, or any campaigns that rely on the current date, thus disturbing other users' work.

To set the system clock, use the following procedure.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**. The System Administration screen is displayed.
2. From the System Administration screen, highlight Date and Time and press **(ENTER)**. The Change Date and Time form appears.
3. Use the arrow keys to move the cursor to the field you want to change.
4. Once the cursor is resting on the field to be changed, press **(CHOICES)**.

If only two or three choices are available, the choice toggles when **(CHOICES)** is pressed. If more than three choices are available for you to enter into each field, a screen appears. Use the arrow keys to move to the appropriate entry, then press **(ENTER)**.

The date fields are months of the year, day of the month, and year. Valid values are:

months:	January – December
days:	1 – 31
years:	1987 – 1999

The time fields are hours of the day and minutes of the hour. Valid values are:

hours:	1 – 12
minutes:	00 – 59

The remaining fields on the form are AM/PM, Time Zone (which can be Eastern, Central, Mountain, Pacific, or GMT), and Daylight Savings Time.

If you type an invalid value for these fields, an error message is displayed. An error also occurs when month, day, and year are in an impossible combination.

-
5. Press **(SAVE)** after you have changed the required fields on the Date and Time form.

A message appears confirming that the system set the new time and date. The following is a sample confirmation message:

```
The date is June 15, 1992, time is 1:35, time zone
Eastern.
```

6. Press **(CONT)** to change the date and time on the system clock, or press **(CANCEL)** to cancel without changing the date and time.

⇒ NOTE:

You must log off and log back on again to see the effects of changing either the time zone or the use of Daylight Savings Time.

Disk Operations

The Disk Operations function allows you to:

- Format floppy disks
- Copy the contents of one floppy to another floppy disk.

Format UNIX System Floppy Disk

Format all new floppy disks before you use them with the system. Formatting a floppy disk prepares it to accept the directories and files you want to store on it.

You can also reformat an old floppy disk. Be sure you do not need the information stored on it any longer.



CAUTION:

Do not format a floppy disk that contains information you want to keep. Formatting a floppy disk destroys any information stored on it.

To format a floppy disk, use the following procedure.

1. If you are in the Voice System Administration windows, press **(CANCEL)** until you are in the CONVERSANT VIS Version 4.0 main menu.
2. At the VIS main menu, highlight AT&T Face and press **(ENTER)**.
3. At the AT&T FACE menu, highlight System Administration and press **(ENTER)**. The System Administration menu is displayed.
4. At the System Administration menu, highlight Disk Operations and press **(ENTER)**. The Disk Operations menu appears.

-
5. At the Disk Operations menu, highlight Format UNIX System Floppy Disk and press **(ENTER)**. The Format Floppy form appears.
 6. At the Format Floppy form, select the density of the floppy you wish to format.
 7. Insert the floppy disk you want to format and press **(CONT)**. You may see the following message:

The floppy cannot be formatted.

The possible reasons include:

- There is no floppy inserted.
- The floppy is inserted improperly.
- The floppy is write protected.

The system also asks you the density of the floppy to be formatted: 1.44 MB or 1.2 MB

Check that you inserted a floppy disk. Take the floppy out and check if the disk is write-protected. If it is, write-enable it and reinsert the floppy. If the floppy is the incorrect density, insert a floppy of the correct density.

You might also get a message that tells you explicitly that the floppy is the wrong density. Remove the floppy and insert one of the correct density.

If no error conditions are encountered, the following message is displayed:

Formatting of floppy is in progress.

After the floppy disk is formatted, the Remove Formatted Floppy form appears.

8. Remove the floppy disk from the disk drive and press **(CONT)**. Format any other floppy disks by following the same procedure for each floppy disk.
9. Press **(CANCEL)** to exit when you are finished.

Floppy-to-Floppy Copy

For safekeeping, you can store important information on more than one floppy disks by copying the information from one floppy disk to another. You can copy only using disks of the same size (3.5-inch).

The floppy disk containing the files you want to copy is called the source floppy disk and the floppy disk to which you want to copy the information is called the destination floppy disk. Remember to format the destination floppy disk before you start.



CAUTION:

It is recommended that the source and destination floppy disks be the same density; that is, for 20 MHz machines, both should be 1.44 Mbyte floppy disks. Note that 3.5-inch drives support only 1.44 Mbyte floppy disks.

While a floppy is being copied, do not remove the floppy disk from the disk drive. Wait for the message to insert or remove the appropriate floppy disk.

To copy the contents from a source floppy disk to a destination floppy disk, use the following procedure.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)** to display the System Administration screen.
2. At the System Administration screen, highlight Disk Operations and press **(ENTER)** to open the Disk Operations screen.
3. At the Disk Operations screen, highlight Floppy-To-Floppy Copy and press **(ENTER)**. The Floppy-To-Floppy Copy screen appears.
4. Confirm the following:
 - Source and destination floppy disks are the same density
 - Destination floppy is formatted
 - It is all right to overwrite the destination floppy

Once you are sure these conditions exist, press **(CONT)**. The Copy Source Floppy form appears.

5. Insert the source floppy disk and close the latch.
6. Press **(CONT)**.

If you get an error message, the source floppy cannot be copied. The following are possible causes for an error message:

- There is no floppy inserted in the floppy disk drive.
- The floppy is inserted improperly.

-
- The latch is not turned down.
 - The floppy is not readable because it is not formatted or is formatted incorrectly.

If you get an error message, check to make sure that you put the floppy in the drive and that the latch is turned down. Try reinserting the floppy disk. Also, verify that the floppy disk is the one you intended to copy.

7. When the floppy is inserted properly and is being read, the following message is displayed:

Please wait while source floppy is being copied.

CANCEL does nothing if you press it at this time. The system now is copying the files from the source floppy disk onto the hard disk. If your system does not have enough space to copy this floppy, you receive an error message. If you receive such a message, you must delete some files on the hard disk before trying to copy the floppy again.

⇒ NOTE:

If you press **CANCEL** while the source floppy is being copied, the copy is not affected. However, the rest of the task (that is, copy to the destination floppy) is canceled. You are returned to the Disk Operations screen.

When copying is complete, the Remove Source Floppy form appears.

8. Remove the source floppy disk and press **CONT**. The Copy to Destination Floppy form appears.
9. Insert the destination floppy disk and press **CONT**. You may receive the following message:

The destination floppy cannot be copied to. The possible reasons include: there is no floppy inserted; the floppy is inserted improperly; the latch is not turned down; or the floppy is not writable because it has a write protect tab or it is unformatted or formatted incorrectly.

10. Check that you inserted a floppy disk and closed the latch. Take the floppy out and check for a write protect tab. If it has one, remove it or insert a different formatted floppy. If you suspect the floppy may not be formatted, insert one that you know is formatted.

You also might mistakenly insert a 1.44 Mbyte floppy disk when you should have inserted a 720 Kbyte floppy disk. In this case, you should remove the floppy and insert the appropriate floppy disk.

If no errors are encountered, the following message is displayed:

Please wait while floppy is being written.

When the write from hard disk to destination floppy is finished, the Remove Destination Floppy form appears.

11. Remove the destination floppy disk and press **(CONT)**. After you press **(CONT)**, the Additional Floppies form appears.
12. If you do not need another copy, press **(CANCEL)** to exit from this procedure.
13. If you want to make another copy, press **(CONT)** and follow the screen instructions to repeat this procedure.
14. When you are finished, press **(CANCEL)** to return to the Disk Operations screen.

Allocating Speech on the Second Hard Disk Drive

After your second hard disk has been low-level formatted, it may be partitioned to store speech data. Disks are divided into partitions or slices to allow the system administrator to use various parts of the disk for different purposes. The command **addspdisk** will partition the second disk into at most 2 partitions according to the following rules:

- If a speech partition exists on disk 0—slice 4, then a disk partition of the same size will be created on disk 1—slice 4. The remainder of disk 1 will be allocated as a speech partition on slice 3.
- If the size of disk 0—slice 4 partition is greater than all of disk 1, then a single speech slice will be created on disk 1—slice 3.
- If disk 0—slice 4 is not a speech slice, then 2 speech partitions of approximately equal size will be created on disk 1—slices 3 and 4.

These rules are guided by the following rationale: Disk 1 is partitioned under these rules to balance the load between the two disks. The voice system writes speech data on the speech partition with the most free space. If the speech partition on the two disks are of equal size, and if speech is added to the system, the speech will be distributed evenly across the two disks.

To use the **addspdisk** command, follow this procedure:

1. Enter **addspdisk**

System response:

```
Adding disk 01 as a speech disk
Setting up the partitions for disk 01
Partitioning for disk 01 complete.
I will create the following disk partitions for
speech
    SPCH3 with 683 cylinders
    SPCH4 with 337 cylinders
Is this acceptable(y/n)
```

2. Enter **n**

System response:

```
Would you like to specify the partitions? (y/n):
```

3. Enter **y**

At this time you are asked to specify your requirements for disk 1 - slice 3.

System response:

```
Enter number of cylinders for disk 1 slice 3:
```

4. Enter the number of cylinders.

System response:

```
Scanning for bad tracks
    This will take several minutes
Bad track scanning complete
Making the /etc/partitions file
New /etc/partitions entry for disk01 added.
Creating the following entries in /vs/data/fslist
    /dev/rdisk/1s3 5805
    /dev/rdisk/1s4 2864
    /vs/data/fslist entries create
addspdisk for disk 01 completed at Mon Nov 14
16:33:12 EST 1993
```

Alternative Disk Drive Usage

There are several “sophisticated” ways to use your second hard disk drive:

- It is possible to convert the speech partitions created through **addspdisk** to UNIX file system. Use the command **spch3unix**. Refer to the *CONVERSANT VIS Version 4.0 Command Reference*, 585-350-209, for more information.
- It is possible to create additional partitions on the second hard disk. Consult the *UNIX System Administrator's Guide* and the *UNIX System Administrator's Reference* for more information.
- FACE also provides a simple interface to add UNIX file systems to the second hard disk. These file systems may be then be converted to speech partitions using the command **buildfs**. To create the UNIX file systems using FACE:
 1. At the UNIX prompt #, enter **face**. The system responds by opening the AT&T FACE screen.
 2. Highlight System Administration and press **(ENTER)**. The system opens the System Administration screen.
 3. Highlight Peripherals Setup and press **(ENTER)**. The system opens the Peripherals Setup screen.
 4. Highlight Second Hard Disk Setup and press **(ENTER)**. From this point the second hard disk is added to the system, and up to 4 UNIX partitions will be created with the sizes you specify. Once these partitions have been created, they may be converted to speech partitions using the **buildfs** command. For example, if **/dev/dsk/1s4** is a UNIX file system, it can be converted into a speech partition by entering:

buildfs -s /dev/rdisk/1s4

Make sure you indicate the raw disk (rdsk not dsk).



CAUTION:

*Do not attempt to run **buildfs** on the root or /usr file systems!*

File System Operations

The file systems you create are an independent collection of files and directories. The File System Operation function allows you to:

- Create a file system on floppy disk
- Mount a file system on both hard disk and floppy disk
- Mount a file system on a second hard disk, if one is installed
- Unmount a previously mounted file system

Before a floppy disk file system can be accessed through the UNIX system, it must be attached to a directory that is already a part of the file system on the integral hard disk. This is referred to as mounting a file system. The location in the file system where the mount command attaches the mounted file system is called the mount point.

Therefore, a file system is brought under UNIX system control by mounting the file system. To release the file system so that it can be removed from the UNIX system, the file system must be unmounted.

To perform any of these functions, you must be at the File System Operations screen. To get to this screen:

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)** to display the System Administration screen.
2. At the System Administration screen, highlight File System Operations and press **(ENTER)** to display the File System Operations screen.

Create a File System

A 1-kbyte UNIX system file system is created on a floppy disk. After the file system is created, it is marked with a file system name and optional file system label that can be mounted later.

Use the following procedure to create a file system on a floppy disk.

1. At the File System Operations screen, highlight Create File System and press **(ENTER)** to display the Create File System form.
2. You must enter the file system name (the label is optional) and press **(SAVE)**. By default, the label is "none." You may change this label to any other name (up to six alphanumeric characters).

You will receive an error message if your file system or label name is longer than six characters.

The Insert Floppy form appears.

3. Insert the floppy disk, close the latch, and press **(CONT)**. You are asked to wait while the file system is created.

If a write error to the floppy occurs, the following warning message appears:

```
Cannot write to the floppy. Possible reasons
include: floppy disk has write-protect tab on it
(please remove tab), floppy disk is not formatted,
disk is not inserted or is inserted improperly,
latch is not closed or the floppy disk is unread-
able. Please check the disk and try again.
```

4. If the warning message appears, try the following:
 - Remove the floppy from the drive.
 - Check for a write-protect tab
 - Reinsert the floppy and close the latch, then press **(CONT)**.

If the error persists, try another formatted disk.

Another possible error is trying to create a file system on a mounted floppy. If the floppy on the device has a mounted file system, you are not allowed to create a new file system on this floppy. This error is detected and you are notified by the following message:

```
The floppy on this drive is currently mounted and
in use. A "Create File System" operation, at this
time, would overwrite the contents of a currently
active file system. Please make sure this floppy
is unmounted by using the "Unmount File System"
```

screen and removed from the drive before attempting a "Create File System" operation on your floppy.

5. If the previous warning message appears, unmount the floppy and restart the operation by pressing **(CONT)** or **(CANCEL)**. If no errors are encountered, the confirmation form appears.
6. Press **(CONT)**. The floppy file system is created and left unmounted.



NOTE:

Remember to mount the file system using the Mount File System function before trying to use it.

Mount a File System

Floppy file systems, as well as file systems on a second hard disk, can be mounted. You must specify the mount directory name where you want to mount the file system. A write protected floppy must be mounted as read-only. When the operation is completed, the system gives you a confirmation message that the file system has been mounted.

You must have system administration privileges to use the Mount File System function.

Use the following procedure to mount a file system on a floppy disk.

1. At the File System Operations screen, highlight Mount File System, then press **(ENTER)** to display the Mount File System form.
2. With the cursor at the Mount Directory Name field, enter the name of the mount directory.

You must specify the directory you select for the mount point as a full path name. If you select a directory that does not exist, it is created. If you select a directory that exists and has contents, the current contents of that directory are not accessible after the file system is mounted.

3. With the cursor resting on the Do you want to mount the file system read-only? field, press **(CHOICES)** and toggle (Yes or No) until your choice appears in the field.
4. When the form is complete, press **(SAVE)**. The Insert Floppy form appears.
5. Insert the floppy, close the latch, and press **(CONT)**. When the file system is mounted, you receive the following confirmation message:

The file system is mounted.

Do not remove the medium until it is unmounted.

Mount File System Warning Messages

One of the following warning messages may appear while attempting to mount a file system.

- **Directory Not Empty**

If the mount point is not empty, a warning message similar to the following appears:

```
Warning: /usr/jab/mnt exists and is not empty.  
Contents will not be accessible while disk is  
mounted.
```

- **Mount Directory in Use**

If another file system (for example, a hard disk file system) is already mounted using the same mount directory, a warning message similar to the following appears and the file system is not mounted:

```
/mnt currently has a file system mounted.  
This directory cannot be used to mount your disk.  
Please select another directory name.
```

- **Write-Protected Disk (only applies to floppy file systems)**

If you attempt to mount a write-protected floppy disk (that is, the floppy has the write-protected tab on it) as read/write, the following warning message appears:

```
You have inserted a write-protected disk.  
This disk needs to be mounted read-only.
```

- **Floppy Mounted (only applies to floppy file systems)**

If the floppy disk is already mounted (presumably by somebody else), the following warning message appears:

```
The floppy on the drive is already mounted. The  
floppy may be in use by someone else. Please make  
sure this floppy is unmounted by using the  
"Unmount File System" screen and removed from the  
drive before attempting the "Mount File System"  
operation on your floppy.
```

- **Hard Disk File System Already Mounted**

If a file system on a second hard disk is already mounted, the following warning message appears:

```
This file system is already mounted.
```

- **Directory Is a Standard UNIX System Directory**

If the directory you specify is one of the standard UNIX system directories (/dev, bin, /lib, /usr, and tmp), a warning message similar to the following appears:

```
The directory name selected /lib is a standard
UNIX system directory. If you overlay the contents
of this directory, unpredictable things may happen
to your system. If you do intend to overlay this
directory, then continue. Otherwise CANCEL the
operation and try again by selecting a different
directory name to mount your disk.
```

Unmount a File System

You may unmount a previously mounted UNIX system file system on a floppy disk or a second hard disk. When completed, the system gives you a confirmation message that the file system is unmounted.

Use the following procedure to unmount a file system on a floppy disk.

1. At the File System Operations screen, highlight Unmount File System and press **(ENTER)**. The Unmount File System form appears.
2. At the Mount Directory Name field, enter the name of the mount directory in which the file system to be unmounted is stored and press **(ENTER)**. The following confirmation message appears:

```
The file system is unmounted.
You may remove the medium from the drive.
```

3. Press **(CONT)** to close this frame and make the File System Operations screen active.

Unmount File System Warning Messages

- **File System in Use**

If the file system cannot be unmounted because the file system is in use, the following warning message is displayed:

```
The file system is currently in use. You cannot
unmount this file system at this time. Make sure
all current activity has stopped before trying to
unmount this file system again.
```

- File System Not Previously Mounted

If you attempt to unmount a file system not previously mounted, the following warning message appears:

```
The file system on <device> is not currently
mounted.
```

Press **CONT** to close this screen.

Restore from Removable Media

If files are lost due to operator error, system failure, or some other cause, you may be able to restore the files using the latest floppy disk or cartridge tape backup. Remember, you can only restore files that have been backed up. Any changes made since the last backup are lost. Also, any file that is in use at the time of restore cannot be restored.

There are three main types of restore operations:

- Personal restore is used to restore all files (directories or regular files) or selectively restore particular files backed up on floppy disk or tape to the hard disk.
- System restore is used to restore all files from floppy disk or tape to hard disk. The system restore function provides you with the ability to do a restore (from system backup), a selective system restore, or restore other user files (not just your own). The selective system restore function can be used to restore specific files. The files on the floppy disk or tape are displayed on the screen and you can select the ones you want to restore.
- Speech restore is used to restore all talk files and phrases backed up to floppy disk or tape.

To restore the entire contents of the disk, use the “System Backup and Restore” procedure given later in this chapter.

To restore your system, you must select the type of restore you need as explained above and follow the procedure for that type.

If you are restoring speech associated with a specific application, use the procedure given in Chapter 2, “Application Administration.”

⇒ NOTE:

Before attempting a restore, be sure the hard disk on your system has enough space for all the information you want to restore to it.

Personal Restore

To restore all files in your home directory, use the following procedure. The following procedure assumes your home directory is /usr/abc.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)** to display the System Administration screen.
2. At the System Administration screen, highlight Restore from Removable Media and press **(ENTER)** to open the Restore from Removable Media screen.
3. At the Restore from Removable Media screen, highlight Personal Restore and press **(ENTER)** to display the Personal Restore screen.
4. From the Personal Restore screen, highlight Restore Files under /usr/abc and press **(ENTER)**. The Select Removable Media screen appears.
5. Depending on what options are available on your system and what your needs are, select the drive that you want to use for this restore procedure by highlighting one of the three choices (floppy disk drive 0, floppy disk drive 1, or cartridge tape) and pressing **(ENTER)**.
6. The Disk Restore form asks if existing files on disk should be overwritten with restored files.

Choose YES or NO by pressing **(CHOICES)** and toggling between YES and NO. The default is NO.

If you choose YES, all files on the floppy disk or tape are transferred to your file system, overwriting any files with the same name regardless of whether the file on the hard disk is newer than the one on the floppy disk or tape.

If you choose NO, files on the hard disk that are newer (that is, have been modified after the last backup) are not overwritten.

7. Press **(SAVE)**. A restore confirmation message appears telling you to insert the floppy disk or tape containing the files you want to restore.
8. Insert the floppy disk or tape containing the specified files and press **(ENTER)**. Once the restore is in progress, the following instruction is displayed:

Restore in progress. Do not remove the floppy/
tape.

-
- In addition, if the restore spans multiple floppy disks or tapes, you are notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been restored, for example, the following instructions would appear:

```
You may remove floppy number 1
To exit, please press 'q' followed by ENTER

To continue, insert floppy number 2
and strike the ENTER key.
```

If you type **q** to exit, the following message is displayed:

```
You have canceled the Restore from Removable
Media.
```

- Make sure the floppy disks or tapes are in numerical order. Continue inserting and removing the disks or tapes until a message appears indicating the restore is complete:

```
Restore is done. You may remove the floppy.
```

- Remove the last floppy disk when the system informs you that it has completed the restore.

Selective Personal Restore of Files

To restore only some of the files in your home directory, use the following procedure (/usr/abc is assumed to be your home directory).

- From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
- At the System Administration screen, highlight Restore from Removable Media and press **(ENTER)** to display the Restore from Removable Media screen.
- At the Restore from Removable Media screen, highlight Personal Restore and press **(ENTER)** to open the Personal Restore screen.
- From the Personal Restore screen, highlight Selective Restore of Files under /usr/abc and press **(ENTER)**. The Select Removable Media screen appears.
- Depending on what options are available on your system and what your needs are, select the drive that you want to use for this restore procedure by highlighting one of the three choices (floppy disk drive 0, floppy disk 1, or cartridge tape) and pressing **(ENTER)**.
- The Disk Restore form asks if existing files on disk should be overwritten with restored files.
Answer YES or NO by pressing **(CHOICES)** and toggling between YES and NO. The default is NO.

If you choose YES, all files on the floppy disk or tape are transferred to your file system, overwriting any files with the same name regardless of whether the file on the hard disk is newer than the one on the floppy disk or tape.

If you choose NO, files on the hard disk that are newer (that is, have been modified after the last backup) are not overwritten.

7. Press **(SAVE)**.

⇒ NOTE:

This procedure reads the media set twice: once to read the list of files that you can choose and then again to execute the restoring of the files that you chose.

8. You are prompted to insert the floppy or tape. The Show Contents screen appears.

⇒ NOTE:

If you do not wish to restore any files at this time, press **(CANCEL)**.

9. Select the files you want to restore with MARK until you have marked all the files you want to restore.

10. Press **(ENTER)** to restore the marked files.

A restore confirmation message appears telling you to insert the floppy disk or tape containing files you want to restore.

11. Insert the floppy disk or tape containing the specified files and press **(ENTER)**. Once the restore is in progress, the following instruction is displayed:

```
Restore in progress. Do not remove the floppy/  
tape.
```

12. In addition, if the restore spans multiple floppy disks or tapes, you are notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been restored, for example, the following instructions would appear:

```
You may remove floppy number 1.  
To exit, please press 'q' followed by ENTER  
  
To continue, insert floppy number 2  
and strike the ENTER key.
```

If you type **q** to exit, the following message is displayed:

```
You have canceled the Restore from Removable  
Media.
```

-
13. Make sure you insert the floppy disks or tapes in numerical order. Continue inserting and removing the disks or tapes until a message appears indicating the restore is complete:

Restore is done. You may remove the floppy.

14. Remove the last floppy disk when the system informs you that it has completed the restore.

System Restore

To restore system and user files from a system or incremental backup, use the following procedure. You must have system administration privileges to use this function.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. At the System Administration screen, highlight Restore from Removable Media and press **(ENTER)** to display the Restore from Removable Media screen.
3. At the Restore from Removable Media screen, highlight System Restore and press **(ENTER)** to open the System Restore screen.
4. From the System Restore screen, highlight Restore System and press **(ENTER)**. The Select Removable Media screen appears.
5. Depending on what options are available on your system and what your needs are, select the drive that you want to use for this restore procedure by highlighting one of the three choices (floppy disk drive 0, floppy disk drive 1, or cartridge tape) and pressing **(ENTER)**.
6. The Disk Restore form asks if existing files on disk should be overwritten with restored files.

Answer YES or NO by pressing **(CHOICES)** and toggling between YES and NO. The default is NO.

If you choose YES, all files on the floppy disk or tape are transferred to your file system, overwriting any files with the same name regardless of whether the file on the hard disk is newer than the one on the floppy disk or tape.

If you choose NO, files on the hard disk that are newer (that is, have been modified after the last backup) are not overwritten.

7. Press **(SAVE)**. A restore confirmation message appears telling you to insert the floppy disk or tape containing files you want to restore.

-
8. Insert the floppy disk or tape containing the specified files and press `(ENTER)`. Once the restore is in progress, the following instruction is displayed:

Restore in progress. Do not remove the floppy/
tape.

9. In addition, if the restore spans multiple floppy disks or tapes, you are notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been restored, for example, the following instructions would appear:

You may remove floppy number 1.
To exit, please press 'q' followed by ENTER
To continue, insert floppy number 2
and strike the ENTER key.

If you type **q** to exit, the following message is displayed:

You have canceled the Restore from Removable
Media.

10. Make sure you insert the floppy disks or tapes in numerical order. Continue inserting and removing the disks or tapes until a message appears indicating the restore is complete:

Restore is done. You may remove the floppy.

11. Remove the last floppy disk when the system informs you that it has completed the restore.

Selective System Restore

To restore only some of the system or user files from the system or incremental backup of floppy or tape, use the following procedure. You must have system administration privileges to use this function.

⇒ NOTE:

If the backup was performed using the **mkimage** command, you cannot use the AT&T FACE menu to restore the data. Instead, you have to perform the restore using the **cpio** command.

Perform the following steps to selectively restore files/directory from the **mkimage** backup:

1. Insert the tape or floppy into the drive,
2. If restoring from tape, enter:

```
cpio -icvdaml /dev/rmt/c0s0 -C 204800 '<file_name>'
```

If restoring from floppy diskette, enter:

```
cpio -icdvaml /dev/rdisk/fx '<file_name>'
```

where *fx* is either *f0* or *f1* and *<file_name>* is contained in single quotes and specifies the full path name (for example, '**oracle/dbs/initA.ora**'). If you want restore all files directory, use a "*" (asterisk) as the file name. For example, if *file_name* is '**oracle/dbs/***', then all files in the **oracle/dbs** directory will be restored.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. At the System Administration screen, highlight Restore from Removable Media and press **(ENTER)** to display the Restore from Removable Media screen.
3. At the Restore from Removable Media screen, highlight System Restore and press **(ENTER)**.
4. At the System Restore screen, highlight Selective System Restore and press **(ENTER)**.
5. Depending on what options are available on your system and what your needs are, select the drive that you want to use for this restore procedure by highlighting one of the three choices (floppy disk drive 0, floppy disk drive 1, or cartridge tape) and pressing **(ENTER)**.
6. The Disk Restore form asks if existing files on disk should be overwritten with restored files.
Answer YES or NO by pressing **(CHOICES)** and toggling between YES and NO. The default is NO.

If you choose YES, all files on the floppy disk or tape are transferred to your file system, overwriting any files with the same name regardless of whether the file on the hard disk is newer than the one on the floppy disk or tape.

If you choose NO, files on the hard disk that are newer (that is, have been modified after the last backup) are not overwritten.

7. Press **(SAVE)**.

⇒ NOTE:

This procedure reads the media set twice: once to read the list of files from which you choose and then again to execute the restoring of the files that you chose.

8. You are prompted to insert the floppy or tape. The Show contents screen then appears.

⇒ NOTE:

If you do not wish to restore any files at this time, press **(CANCEL)**.

9. Select the files you want to restore and press MARK until you have marked all the files you want to restore.

10. Press **(ENTER)** to restore the marked files.

A restore confirmation message appears telling you to insert the floppy disk or tape containing files you want to restore.

11. Insert the floppy disk or tape containing the specified files and press **(ENTER)**. Once the restore is in progress, the following instruction is displayed:

```
Restore in progress. Do not remove the floppy/  
tape.
```

12. In addition, if the restore spans multiple floppy disks or tapes, you are notified when to remove the current floppy or tape and insert the next one in sequence. When the contents of floppy 1 have been restored, for example, the following instructions would appear:

```
You may remove floppy number 1.  
To exit, please press 'q' followed by ENTER  
  
To continue, insert floppy number 2  
and strike the ENTER key.
```

If you type **q** to exit, the following message is displayed:

```
You have canceled the Restore from Removable  
Media.
```

-
13. Make sure you insert the floppy disks or tapes in numerical order. Continue inserting and removing the disks or tapes until a message appears indicating the restore is complete:

Restore is done. You may remove the floppy.

14. Remove the last floppy disk when the system informs you that it has completed the restore.

Speech Restore

⇒ NOTE:

This restore procedure does not check to see if the talkfile number is already used by another application. This can cause speech on the disk to be overwritten. If you are backing up speech associated with a specific application, use the procedure given in Chapter 2, "Application Administration."

To restore speech files, use the following procedure.

1. At the System Administration screen, highlight Restore from Removable Media and press **(ENTER)** to display the Restore from Removable Media screen.
2. At the Restore from Removable Media screen, highlight Speech Restore and press **(ENTER)** to open the Speech Restore screen.
3. From the Speech Restore screen, highlight either Restore All Talkfiles/Phrases or Selective Restore of Talkfiles/Phrases and press **(ENTER)**. If you choose to Restore specific files and phrases, a form appears.

List the speech files and phrases you want to recover. When you have listed all the phrases, press **(CANCEL)**. The Select Removable Media screen appears. If you choose to Restore all speech, the Select Removable Media screen appears.

4. Depending on the options available on your system and your needs, select the appropriate media from which to restore your data by highlighting cartridge tape and pressing **(ENTER)**.
5. Insert the floppy disk or tape containing the specified files and press **(ENTER)**. If the restore spans multiple floppy disks or tapes, remove the floppy or tape when the files on it have been restored and insert the next one in sequence.

To discontinue the restore procedure at any time, press **(DELETE)**.

6. Make sure the floppy disks or tapes are in numerical order. Continue inserting and removing the disks or tapes until the restore is complete.
7. Remove the last floppy disk or tape when the restore is complete.

Schedule Automatic Task

The Schedule Automatic Task function allows you to set up a program to perform certain tasks at a specific time. For example, you may want to run backups at 3 a.m. every Monday.

⇒ NOTE:

If you are not logged in as root or do not have root permissions, you will not be able to use the schedule automatic task function. To get root permissions, ask the system administrator to add your user login to the `/usr/lib/cron/cron.allow` file.

Add an Automatic Task Schedule

1. From the AT&T FACE screen, highlight System Administration and press **ENTER** to display the System Administration screen.
2. At the System Administration screen, highlight Schedule Automatic Task and press **ENTER** to open the Schedule Automatic Task screen.
3. At the Schedule Automatic Task screen, highlight Add and press **ENTER** to display the Add Automatic Task form.
4. With the cursor on the Month(s) of the Year field, press **CHOICES**. A screen showing the twelve months is displayed. One at a time, highlight the months in which you want the task executed and press **MARK**.

When all the desired months are marked, press **ENTER**. If you enter nothing in this field, the system sets the value to the default value of All.

5. Move the cursor to the Day(s) of the Month field and press **CHOICES**. A screen showing the numbers 1 31 is displayed. One at a time, highlight the days on which you want the task executed and press **MARK**.

When all the desired days are marked, press **ENTER**. If you enter nothing in this field, the system sets the value to the default value of All.

6. Move the cursor to the Day(s) of the Week field and press **CHOICES**. A screen showing the days of the week is displayed. One at a time, highlight the days on which you want the task executed and press **MARK**.

When all the desired days are marked, press **ENTER**. If you enter nothing in this field, the system sets the value to the default value of All.

7. Move the cursor to the Hour(s) of the Day field and press **CHOICES**. A screen showing the hours of the day is displayed. One at a time, highlight the hours for which you want the task executed and press **MARK**.

When all the desired hours are marked, press **ENTER**. If you enter nothing in this field, the system sets the value to the default value of All.

-
8. Move the cursor to the Minute(s) Past the Hour field and press **(CHOICES)**. A screen showing the minutes 00-59 is displayed. One at a time, highlight the minute mark at which you want the task executed and press **(MARK)**.
When all the desired times are marked, press **(ENTER)**. If you enter nothing in this field, the system sets the value to 00.
 9. Move the cursor to the Task field and enter the task you want executed.
 10. When the form is completed, press **(SAVE)**. A confirmation screen displays the information you listed on the form.
 11. Press **(SAVE)** to add this task to the Automatic Task Schedule or press **(CANCEL)** to discard the information and return to the System Administration screen.

Change Automatic Task Schedule

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)** to open the System Administration screen.
2. At the System Administration screen, highlight Schedule Automatic Task and press **(ENTER)** to open the Schedule Automatic Task screen.
3. At the Schedule Automatic Task screen, highlight Change and press **(ENTER)** to display the Change Automatic Task screen.
The Change Automatic Task screen lists the tasks already scheduled.
4. Highlight the tasks that you want to change and press **(ENTER)**. The information about that task is displayed.
5. Move the cursor to the field you want to change and press **(CHOICES)** to see the valid choices for that field.
6. Highlight each choice and press **(MARK)**. When all your choices are marked, press **(ENTER)**. Continue changing information until you are satisfied with the new information in the form.
7. Press **(SAVE)**. A confirmation screen appears that displays the new information for the task.
If you want to activate this information, press **(CONT)**. If you want to cancel the changes you made, press **(CANCEL)**.

Delete an Automatic Scheduled Task

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)** to open the System Administration screen.
2. At the System Administration screen, highlight Schedule Automatic Task and press **(ENTER)** to open the Schedule Automatic Task screen.
3. At the Schedule Automatic Task screen, highlight Delete and press **(ENTER)** to open the Delete Automatic Task screen.

The Delete Automatic Task screen lists the tasks already scheduled. **(MARK)** the tasks that you want to delete and press **(ENTER)**.

4. A confirmation screen is displayed, asking if you want to delete all the tasks you marked. If you want to delete them, press **(CONT)**. If you want to save them, press **(CANCEL)**.

Display an Automatic Scheduled Task

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)** to open the System Administration screen.
2. At the System Administration screen, highlight Schedule Automatic Task and press **(ENTER)** to display the Schedule Automatic Task screen.
3. At the Schedule Automatic Task screen, highlight Display and press **(ENTER)** to open the Display Automatic Task screen.

The Display Automatic Task screen lists all the scheduled tasks. Use the arrow keys on the right side of the keyboard to scroll up and down through the listing.

4. Press **(CANCEL)** or **(CONT)** to return to the Schedule Automatic Task screen.

Shutdown

The shutdown function allows you to bring down the VIS and UNIX system software before turning off the power or rebooting the system.

You must have system administration privileges and be at the console to use shutdown.



CAUTION:

Always stop the VIS before you execute a shutdown. Shutting down the system without stopping the VIS may corrupt the software. Use the Stop Voice System option under System Control in the Configuration Management screen.

When you perform this function, the system asks you to specify how much time (in seconds) to wait for users to finish whatever they are doing (that is, the grace period).

All users are notified that a shutdown will start in however many seconds you specified to allow them to finish their work and log off. At the end of the grace period, users who are still logged on receive another message notifying them that the shutdown is starting. Next, all processes are stopped. You are notified when the shutdown is complete. You may then turn off the machine or press the RESET button to reboot the machine.

Refer to “Shutting Down the Operating System” in Chapter 4, “Common Maintenance Procedures,” of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, for the procedure to shut down your system.

Peripherals Setup

This section describes how to set up and administer the system peripherals, including printer, serial ports, and modem.

Printer Software Setup

To setup a printer, you must tell the system the type of printer (printer model) you are connecting.

⇒ NOTE:

If you installed a AT&T 473 printer, the printer software is set up automatically because the 473 is the default setting, and you can skip this procedure.

⇒ NOTE:

The UNIX and VIS application software must be installed before printer software can be set up.

1. At the UNIX prompt #, enter **face**. The system responds by displaying the AT&T FACE screen.
2. Highlight System Administration and press **(ENTER)**. The system responds by displaying the System Administration screen.
3. Highlight Peripherals Setup and press **(ENTER)**. The system responds by displaying Peripherals Setup screen.
4. Highlight Printer Setup and press **(ENTER)**. The system responds by displaying the Printer Setup screen.
5. Highlight the Parallel Printer Port Setup and press **(ENTER)**. The system responds by displaying the Parallel Printer Port Setup form.

You can press **(CHOICES)**, function key 2 for a list of choices for each field.

6. Use the arrow keys to move the cursor to the first field, Port Number.
7. Select a valid port number. If no add-on multiport card has been installed, port 01 is the only valid port number. If you have installed the multiport card, there are two additional valid port numbers.

The default value for the Port Number: field is 01. If this value is appropriate, go to Step 8.

If you want to configure a port other than port 01, press **(CHOICES)**. If a multiport card has been installed, the Parallel Port Number screen appears.

8. Select the appropriate port number and press **(ENTER)**.

-
9. Use the arrow keys to move the cursor to the second field, Device Currently On Port. If a device has been configured for this port, the name of the device is displayed here. If no device has been configured for the port, "none" is displayed.
 10. Use the arrow keys to move the cursor to the third field, Printer Type. If a printer is already set up for your parallel port, that name appears in this field. If you want to set up a different or new printer, press **(CHOICES)** for a list of printers that can be used with the system.
Use the arrow keys to scroll through the list of printers.
 11. Highlight the name of the printer model you are connecting and press **(ENTER)**. The system responds by displaying the name of the printer model you selected in the Printer Type: field.
 12. Use the arrow keys to move the cursor to the fourth field, Printer Name. Enter the name you wish to use for the printer.
 13. The next field prompts you to enter yes or no to the prompt: *Should filter be used*. Select either yes or no, depending on whether the printer output needs to be filtered for your printer type. You can also press **(CHOICES)** and toggle (yes or no) until your choice appears in the field and press **(ENTER)**.

⇒ NOTE:

In most cases, the answer to this prompt is yes. The only cases where you may need to answer no is where the application itself is doing its own printer filtering.

14. Press **(SAVE)**, function key 3. The system responding by displaying a confirmation message to inform you the printer you selected is set up on the port you selected. Also, the printer is set up as your default printer destination.
15. Press **(CANCEL)**, function key 6, 4 consecutive times to return to the AT&T FACE screen.
16. Highlight Exit and press **(ENTER)**.
17. Press **(CONT)**, function key 3, to exit.

Serial Ports Setup

To enable/disable a serial port follow the steps below:

1. Enter face. The system displays the AT&T FACE screen.
2. Highlight System Administration and press **(ENTER)**. The system displays the System Administration screen.
3. Highlight Peripherals Setup and press **(ENTER)**. The system displays the Peripherals Setup screen.
4. Highlight Serial Ports Setup and press **(ENTER)**. The system displays the Serial Ports Setup form.
5. In the Serial Port Number field, press **(CHOICES)** to select the serial port number and the corresponding device name to be used, then press **(ENTER)**.

⇒ NOTE:

The first port on the IPC-900 is serial port 03 (/dev/ttys01, ttyh00).

6. In the Device Type field, press **(CHOICES)** to select the type of device to which you are connecting, then press **(ENTER)**.
7. In the Device Speed, press **(CHOICES)** to select a speed in the range 300–19200, then press **(ENTER)**.
8. If you are connecting to an IPC-900, the Flow Control field appears. Select **(CHOICES)** to select hardware or software. Hardware flow controls requires that the device you are connecting to must be configured to support hardware flow control. Press **(ENTER)**.
9. After the form has been completed, press **(SAVE)**, function key 3.
10. If you selected modem as the Device Type, the Connect to Modem screen appears. Complete this form as follows:
 - a. In the Modem Name field, press **(CHOICES)** to select the name of the modem to which you are connecting, then press **(ENTER)**.
 - b. In the Device Connection field, press **(CHOICES)** to specify whether the modem is to be used for outgoing, incoming, or both incoming and outgoing, then press **(ENTER)**.
11. Press **(CANCEL)**, function key 6, 4 consecutive times to return to the AT&T FACE screen.
12. Highlight Exit and press **(ENTER)**.
13. Press **(CONT)**, function key 3, to exit.

⇒ NOTE:

If you are connected to a modem, perform the “Modem UUCP Link Setup” procedure.

Modem UUCP Link Setup

The following steps are required to set up a uucp link with the AT&T 2224CEO modem:

1. At the UNIX system prompt (#), enter `cd /usr/lib/uucp/Dialers`.
2. Enter `vi`.
3. Edit this file to change the entry for the ATT2224CEO modem as follows:

⇒ NOTE:

This is a single-line command. Do not enter it on multiple lines.

**att2224CEO =+,, "" atzod,o12=y,o4=n, n3 c1 j0 q3 g0 r c
006 atT T r c Connected**

4. Power cycle the 2224CEO modem by unplugging the transformer from the power outlet and then plugging it in again.
5. Place a call out of the 2224CEO modem to the remote machine.

After following these steps, a uucp link to the VIS with a 2224CEO modem can be set up.

Software Setup

The Software Setup screen offers the following options:

- Display Installed Software
- Install UNIX System Application
- Program Administration
- Remove Installed Software

Highlight the action you want to perform, then press **(ENTER)**. The Display Installed Software action lists all software packages installed on the system.

For the remaining actions, follow the prompts displayed on the monitor.

System Information

The System Information text screen displays the following user information for the system:

- System name
- UNIX system version
- Hard disk space
- Floppy disk space
- Mounted file system space
- Device that is on serial ports (default is “Not setup via AT&T Administration”)
- Device that is on parallel ports (default is “Not setup via AT&T Administration”)
- Date of last backup (default is “No backup was ever performed via AT&T Administration”)
- A listing of users currently logged in to the system (including login names, user’s full names, and their device connection to the system)

To access the System Information form, use the following procedure.

1. From the AT&T FACE screen, highlight System Administration and press **ENTER**.
2. At the System Administration screen, highlight System Information and press **ENTER** to display the System Information text screen.

⇒ NOTE:

System Information only reports on ports that have been setup via “Peripheral Setup” and backups that have been done through FACE.

If ports were not set up through FACE, the following message appears:

Not setup via AT&T FACE.

If a backup was never performed through FACE, the following message appears:

No backup was performed via AT&T FACE.

If you have mounted a floppy disk, the System Information frame reports space on the floppy.

3. Press **CONT** or **CANCEL** to close the System Information screen and return to the AT&T FACE screen.

Tape Operations

The Tape Operations function allows you to erase, retension, rewind, or reset the streaming tape. Highlight the action you want to perform, press **(ENTER)**, then follow the prompts on the monitor. For each action, the prompts ask you to insert the tape, then press **(CONT)** to continue or **(CANCEL)** to stop. If you press **(CONT)**, the system displays a message when the action is complete.

SCSI Cartridge Tape Compatibility

With the new SCSI cartridge tape drive, there are some compatibility issues of which you must be aware.

Read compatibility is transparent; the drive reads at the density with which the tape was written. To write to a tape that can be read on an older tape drive requires an appropriate device node. All of the device nodes supported for the SCSI cartridge tape drive are listed below:

```
/dev/rmt/c t3d s;60 Mbyte format — rewind on close
/dev/rmt/c t3d s n;60 Mbyte format — no rewind on close
/dev/rmt/c t3d s1;120 Mbyte format — rewind on close
/dev/rmt/c t3d s1n;120 Mbyte format — no rewind on close
/dev/rmt/c t3d s3;320/525 Mbyte format — rewind on close
/dev/rmt/c t3d s3n;320/525 Mbyte format — no rewind on close
```

For an example:

To write an archive readable by a 120 Mbyte or higher density tape drive, you need to enter:

```
find -print | cpio -ocvImBO /dev/rmt/c t3d s1
```

The resulting tape is readable on any 120 Mbyte or higher density tape drive.

User Logins

The User Logins Administration function provides a method for:

- Adding user logins
- Changing user logins
- Deleting user logins
- Displaying user logins

You must have system administration privileges to add, change, or delete a user login. However, any user can display user login information.

A login identifies the user and helps prevent unauthorized people from using your system. But a login alone cannot prevent unauthorized access to your work. Assigning a password to your login helps guard against unauthorized use.

When a login name is no longer needed, it should be removed. Each login has a login directory, or home, assigned to it. This directory is named **/usr/login_name** where *login_name* is the name used when you originally added the login (assuming you used the default directory).

When you remove a login, you are asked if you want the files in the login directory removed. To save these files before you delete them, back them up with the Backup to Removable Media function explained earlier in this chapter.

VIS Security

Prior to working with the VIS, you and others who will be interfacing with the system must have VIS Security privileges. These security privileges allow the user to access the various VIS components.

The three security classes are: VIS Administration, Operations, and Applications. VIS Administration allows you to access and interface all VIS components (Configuration Management, Feature Packages, Reports, Script Builder Applications, Switch Interfaces, and System Monitor).

The *Operations* class allows you to access the following VIS components: Configuration Management, Reports, and System Monitor. This class does not allow you to access Switch Interfaces, Feature Packages, or Script Builder Applications.

The *Applications* class allows you to access and interface with the Application Administration component (including DEFINE) as well as Configuration Management, Reports Administration, Script Builder Applications, and System Monitor.

Creating VIS Logins

Once the VIS software is loaded, use the FACE feature, User Logins, to create a login for VIS administration. A Voice System Security Class field appears in each of the form screens when adding, changing, or displaying user logins. This field is where you designate the desired VIS class.

When a new user is added to the VIS and given one of the three VIS classes, one of two screens appears. Depending on whether or not FACE is executed at the time of login, the user will either see the CONVERSANT VIS VERSION 4.0 screen or the Voice System Administration screen. The former is generated by the program `/vs/bin/cvis_mainmenu` and the later by the program `/vs/bin/cvis_menu`. These programs are called by the user's `.profile`. By default, the program displays the CONVERSANT VIS VERSION 4.0 screen.

When the VIS software package is removed from the VIS, the `/vs/bin/cvis_mainmenu` and `/vs/bin/cvis_menu` programs are removed from the user's `.profile`. The AT&T FACE screen returns to its previous appearance and functionality, before VIS software was added.

You must have system administration privileges to give users VIS Security privileges. These privileges are assigned when users are added to the system. Remember, the `root` login always has system administration and VIS privileges. However, the CONVERSANT VIS VERSION 4.0 and Voice System Administration screens do not automatically appear when logged in as `root`. To access these screens, enter `/vs/bin/cvis_mainmenu` or `/vs/bin/cvis_menu` from the UNIX system prompt.

Add User Logins

You must have system administration privileges to add a new user login name to your computer. These privileges are assigned when users are added to the system. Use lowercase letters and numbers when assigning logins.

When adding a new user login, the User Logins screen automatically does the following:

- Creates a home directory (`/usr/login_name`)
- Chooses the next available uid (user identification number) greater than 100
- Assigns the default gid (group identification number)
- Creates a default `.profile` file

 **NOTE:**

Only user logins that are created with the Administration utility can be administered through the interface.

To add a login, use the following procedure.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. At the System Administration screen, highlight User Logins and press **(ENTER)** to display the User Logins screen. The User Logins screen offers the following choices:
 - Add
 - Change
 - Delete
 - Display

The Add User Logins is a special administrative function that requires the user invoking it to have special system administration privileges.

A validation check against the login you are currently using determines if you have system administration privileges. If you do not have system administration privileges, you receive a warning message.

3. Highlight Add from the User Logins screen and press **(ENTER)**. The Login Name and Full Name form appears.
4. With the cursor resting on the "Login Name" field, type the new login name to be added (up to eight characters in lowercase letters) and press **(ENTER)**.
If you press **(SAVE)** without giving a login name, the following error message is displayed:

You must provide a login name to add a user.

The login name you type must be different from all other login names on the system. You can check the other login names using the Display selection of the User Logins function. If you try to add a login name that already exists, the following message appears on the message line:

That login name already exists on your system.
Type another login name.

Login names should only be lowercase letters and they cannot contain spaces or a colon (:). If you include one of these characters, the following message appears on the message line:

Only numbers and lower case letters are permitted in a login name.

5. With the cursor resting on the "Full Name" field, type the user's full name.

⇒ NOTE:

You must provide a full name to add a user. You cannot use a colon (:) in the user's full name.

-
6. With the cursor resting on the Login ID Number field, type the user's login ID number. FACE gives a default number.
 7. A default home directory is generated when the user login name is given. You can change the home directory by positioning the cursor on the HOME Directory field and typing a new directory name. Do not enter a colon (:) in the HOME directory field.

If you specify a home directory that already exists, you receive the following message:

```
<directory name> already exists.Type another HOME
directory.
```

8. With the cursor resting on the System Administration Privileges field, press **(CHOICES)**. Toggle the system administration privileges to Yes or No as appropriate. The system administration privileges field always defaults to "No."
9. With the cursor resting on the Voice System Security Class field, type the desired VIS class or press **(CHOICES)** to make a selection from a screen. Valid choices are Administration, Operations, Applications, and None. Select Administration to access and interface with all VIS components (Configuration Management, Feature Packages, Reports, Script Builder Applications, Switch Interfaces, and System Monitor). Select Operations to access Configuration Management, Reports, and System Monitor. Select Applications to access and interface with Application Administration, Configuration Management, Reports Administration, Script Builder Applications, and System Monitor. Select None to access none of the VIS components.

The default value for the Voice System Security Class field is "Administration."

10. Press **(SAVE)** when you complete the form.

The user login information entered is displayed as follows. Make sure the information is correct before proceeding.

```
Login Name: jas
Full Name: Jane A. Smith
Login ID Number: 101
HOME Directory: /usr/jas
System Administration Privilege: No
Voice System Security Class: Administration
```

11. Press **(CONT)** if the information is correct. If the information is not correct, press **(CANCEL)**.

After you press **(CONT)**, you are prompted for a password.

12. Respond to the prompts to assign a password for the new user login name. When you have assigned a password, press **(ENTER)**.

-
13. After you provide a password, the confirmation screen is displayed. Press **(CONT)**.

Change User Logins

To change user login information, use the following procedure.

⇒ NOTE:

You must have system administration privileges to change a user login.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. From the System Administration screen, highlight User Logins and press **(ENTER)**.
3. Highlight Change from the User Logins screen and press **(ENTER)** to display the Change User Login form.
4. If you do not wish to change the login name, go to Step 6.

To select a login to be changed, move the cursor to the "Login Name" field, press **(CHOICES)** and select the desired login from the screen of user logins. Press **(ENTER)**. The login to be changed is now entered in the login name field.

⇒ NOTE:

If there are fewer than four logins on the computer, the form automatically cycles through the existing logins when you press **(CHOICES)**.

You could type the login name, rather than select it from the CHOICES menu. If you type the login name incorrectly, the following message appears:

```
This is not a valid login name.
```

```
Strike CHOICES for valid choices.
```

When you provide a login name, the interface fills in the remaining values on the form except for New Login name.

You can give new values for the Full Name and System Administration Privileges, but you cannot use the Login Name field to change the Login name. You must use the New Login Name field.

-
5. With the cursor resting on the New Login Name field, type the new login name. If the new login name is not unique, the following message appears on the message line:

That login name already exists on your system.
Type another login name.

⇒ NOTE:

The contents of the old home directory are retained. The new login name is assigned automatically as the owner of all the former login name's files. If you wish to change the name of the home directory to coincide with the new login name, you must create a new directory and move the files from the old to the new directory (`mkdir old-dir new-dir`) without the help of the interface. You must also change the user's entry in `/etc/passwd` to reflect the change.

6. If you do not wish to change the user's Full Name, move the cursor to the System Administration Privileges and go to Step 8.

With the cursor resting on the Full Name field, type the user's new full name, if any (a full name must be entered). If the user's full name is deleted, the old full name is used.

7. With the cursor resting on the System Administration Privileges field, press **(CHOICES)** and toggle between "Yes" and "No" until the appropriate choice is made.
8. With the cursor resting on the VIS Security Class field, type the desired VIS class or press **(CHOICES)** to make a selection from a screen. Valid choices are VIS Administration, Operations, Applications, and None. Select VIS Administration to access and interface with all VIS components (Configuration Management, Feature Packages, Reports, Script Builder Applications, Switch Interfaces, and System Monitor). Select Operations to access Configuration Management, Reports, and System Monitor. Select Applications to access and interface with Application Administration, Configuration Management, Reports Administration, Script Builder Applications, and System Monitor. Select None to access none of the VIS components.
9. Press **(SAVE)** when you complete the form.
10. Check the confirmation form that appears to make sure the information is correct.
11. If the information is correct, press **(CONT)** to close the Confirm Login form and make the User Logins screen active. If the information is not correct, press **(CANCEL)**.

Delete User Logins

When you no longer need a login, it should be removed using the following procedure.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. At the System Administration screen, highlight User Logins and press **(ENTER)**.
3. From the User Logins screen, highlight Delete and press **(ENTER)**.

⇒ NOTE:

A validation check determines if you have special system administration privileges. If you do not, you receive a warning message. You must have special system administration privileges to delete a login, even if it is your own.

4. While the cursor is resting on the Login Name field, press **(CHOICES)** and select the desired login from the screen displaying user logins. Move to an item with the arrow key and press **(ENTER)** to select it. The login to be deleted is now entered into the Login Name field.

You can also type in the login name that you want to delete. If you type the login name incorrectly, the following message appears on the message line:

That is not a valid login name.

Strike CHOICES for valid choices.

If the user you select is currently logged on, you receive a warning message. The user is able to continue working if you delete the login, but cannot login again.

5. Press **(SAVE)**.
6. When you delete a user login name, you must decide if you want to remove all the files from the user's home directory. The Remove Files of <user login> form appears. The default option is Yes. Toggle with **(CHOICES)** between Yes and No until the appropriate choice is displayed.
7. Press **(SAVE)**.

If you respond Yes to delete the files, the following confirmation message appears:

```
User <user_login> will be deleted and <user_login>
files will be moved to /lost+found.
```

The files are stored temporarily in /lost+found. Then they are deleted.

If you respond No to delete the files, the following confirmation message appears:

User <user_login> will be deleted but <user_login> files will not be deleted.

8. Press **(CONT)** if you are sure you want to delete the login. If you do not want to delete the login, press **(CANCEL)**.

When you press **(CONT)**, the confirmation message closes and the User Logins screen becomes active. You can remove another login, if desired, or go to another screen.

Display User Logins

Any user can display login information for other user's logins. To display user login information, use this procedure.

1. From the AT&T FACE screen, highlight System Administration and press **(ENTER)**.
2. At the System Administration screen, highlight User Logins and press **(ENTER)** to display the User Logins screen.
3. At the User Logins screen, highlight Display and press **(ENTER)** to open the Display User Information form.
4. While the cursor is resting on the Login Name field, press **(CHOICES)** and select the desired login from the screen of user logins.
5. Press **(ENTER)**. The Display User Information form displays the information for the login name selected.

⇒ NOTE:

If there are fewer than four logins on the computer, the form automatically cycles through the existing logins when you press **(CHOICES)**.

You can type the login name, but if you type it incorrectly, the following message appears:

This is not a valid login name.

Strike CHOICES for valid choices.

After you select the login name, the other fields of the form display the information for that login.

6. Press **(CONT)** to make the User Logins screen active, **(CANCEL)** to return to the System Administration screen, or repeat selection of Login Names to display other logins.

UNIX System Basics

B

UNIX System Basics Overview

This appendix describes UNIX system computer hardware and software basics. Specifically, the use of the UNIX system commands and the vi editor are covered.

The purpose of this appendix is to:

- Define the functions of a computer
- Describe the purpose and functions of the UNIX operating system
- Describe how to use selected UNIX system commands
- Describe how to use the vi editor
- Describe the UNIX system shell
- Describe commands relating to the Voice System

UNIX System Basics

Computer Overview

Computers are made up of two major components: hardware and software.

Hardware consists of the physical devices, cabinets, and electrical parts of the computer. Software is a collection of instructions, called programs, used to make the hardware perform the required functions.

In general the computer has four basic functions:

- Input
- Store
- Process
- Output

A computer must be given information, called data, and a set of instructions to follow, called a program, in order to accomplish the assigned task. This data is input from a keyboard or read in from an auxiliary storage device such as a disk.

Once the computer receives the data input, it stores the data in main memory along with the program instructions. The computer processes the instructions from the program, and along with the data, produces an output. The output is sent to an output device such as a terminal, a printer, or an auxiliary storage device like a disk.

Software consists of programs that allow the user to have two-way communication with the computer through the input and output devices.

There are four general types of software for most systems.

- System programs necessary to run the hardware and interpret the decisions which must be made.
- Library programs needed for system usage.
- Prepackaged programs written by system programmers for specialized tasks.
- User-developed programs written by individual users of the system for specific tasks.

UNIX Operating System

The UNIX operating system is a software package developed to control and coordinate the operation performed by a computer. It is a multi-user, multi-tasked operating system with a structured file system layout for easy file access. The UNIX system was designed as an interface between the user and the computer, making it easy for the user to interact with the system.

UNIX Operating System File Structure

The UNIX system file is a collection of data written to an auxiliary storage device, such as a disk. Each file has two distinct components. One component is the name which identifies the file for the user. The other is the contents of the file.

A file name can have up to 14 characters, but should not contain any special characters or have the same name as any system command. The file name can have no embedded spaces between characters.

The UNIX system file has three types of files, each differing in content, format, and usage.

Three file types are:

- Directory files are the building blocks of the UNIX system file structure. They contain the reference to related files.
- Ordinary files are executable or informational files. Executable files are the commands that a computer interprets and executes.
- Special files are those files which identify the system hardware devices and the device driver programs.

File System Structure

The UNIX operating system file structure is a hierarchical, tree-like structure of directories that contain the names of files.

The UNIX system root directory is the source of all other directories, and is symbolically defined with a slash (/). Directories may contain other directories called sub-directories.

A specific file can be reached by using a fully qualified path name. A path name is a sequence of file names, separated by slashes (/), that describe the route or path that the system must follow to locate a specific file within the file system.

A fully qualified path name begins with the root slash (/).

Do not confuse the delimiters between file name with the slash for the root directory name.

UNIX System Commands

A command is a line of text that identifies a particular function you want the system to perform.

The following is an example of a UNIX system command line:

\$ command [-or+ options] [arguments] ENTER

Each command line contains four elements. The command, the options, the arguments, and the terminator. The command is entered after the UNIX system prompt, (\$). Press ENTER to execute the command. The options enhance or modify the command. Each option must be preceded by a plus (+) or minus (-) sign followed immediately by the option name. Multiple options can be entered on the command line. The arguments may specify the file name upon which the command operates. Each element must be separated by a space.

The following are commonly used UNIX system commands:

- The **cd** command changes working directory.

The purpose of the **cd** command is to change from the current working directory to another working directory. An example of the **cd** command line is:

cd paul

The command is entered after the UNIX system prompt and is terminated by a carriage return. **cd** is the command and **paul** is the directory name as the argument. There is no option field for the **cd** command.

- The **ls** command lists the contents of directories.

The purpose of the **ls** command is to list the directories and/or files in the tree. An example of the **ls** command line is:

ls

The command is entered after the UNIX system prompt and is terminated by a carriage return. If the command line is:

ls /students

The command is **ls** and **/students** is the directory name where the list of the tree would start. There are many options for the **ls** command. The **-x** which gives a multi-column output is most commonly used.

- The **pwd** command prints the working directory to the screen.

The purpose of the **pwd** command is to display the current working directory. An example of the **pwd** command line is:

pwd

The command is entered after the UNIX system prompt and is terminated by a carriage return. There are no arguments or options for the pwd command.

- The **mkdir** command creates a new directory.

The purpose of the mkdir command is to create a new directory in which to add files. An example of the mkdir command line is:

mkdir temp

The command is entered after the UNIX system prompt and is terminated by pressing **(ENTER)**. **mkdir** is the command and **temp** is the new directory name to be created as the argument. There are no options for the mkdir command. A new directory named **temp** is created as a branch from the tree sprouting from the / directory.

- The **cat** command catalogs or obtains the contents of a file.

The purpose of the cat command is to obtain a display of the text contained in the named file. An example of the cat command line is:

cat /brian/projects/sched

The command is entered after the UNIX system prompt and is terminated by pressing **(ENTER)**. **cat** is the command and **/brian/projects/sched** is the selected path file name as the argument. There are two arguments for the cat command, but neither are necessary for normal usage.

If the file you cat is over one page in length, the screen scrolls the text off the screen and displays only the last page of text.

- The **pg** command prints contents of a file one page at a time.

The purpose of the **pg** command is to display the text contained in the named file (the same as the cat command) one page at a time. To display the next page, press the space bar. An example of the pg command line is:

pg /andi/reports

The command is entered after the UNIX system prompt and is terminated by pressing **(ENTER)**. **pg** is the command and **/andi/reports** is the selected path file name as the argument. There are no options for the pg command.

- The **cp** command copies the contents of a file.

The purpose of the **cp** command is to copy the contents of the file in argument 1 to the file named in argument 2. An example of the cp command line is:

cp /paul/sched /andi/temp

The command is entered after the UNIX system prompt and is terminated by pressing **(ENTER)**. The first argument is the source file from which you are copying. The second argument is the destination file to which your copy is moved. There are no options for the cp command.

When the `cp` command is executed, you have two files with the same text under two distinct named files.

- The **rm** command removes a file from the system.

The purpose of the **rm** command is to remove the contents of the file named in the argument. An example of the `rm` command line is:

rm /paul/students/stu2

The command is entered after the UNIX system prompt and is terminated by pressing `(ENTER)`. Note that `rm` is the command and `/paul/students/stu2` is the file named as the argument.

There are three options available for usage with the `rm` command. Only the `-i` option is of value to you. The `-i` option returns a question mark (?) when the `rm` command is executed. The question mark will give you the choice to respond with `y` if you DO want to remove the file, or `n` if you DO NOT want to remove the named file.

- The **passwd** command changes the current password.

The purpose of the **passwd** command is to change your current system access password. An example of the `passwd` command line is:

passwd

The command is entered after the UNIX system prompt and is terminated by pressing `(ENTER)`. There are no options for the `passwd` command.

When the `passwd` command is executed, you are prompted to enter your OLD password. Next, you are prompted to enter your NEW password TWICE. You now have a new password for entering the system.

- The **grep** command searches for a pattern match.

The purpose of the **grep** command is to search for the string named in the argument and match that string in the filename. When a match occurs, the line of text in which the string appears is printed on your screen. An example of the `grep` command line is:

grep day sched

The command is entered after the UNIX system prompt and is terminated by pressing `(ENTER)`. Note **grep** is the command, with `day` as the argument and `sched` as the filename.

When the `grep` command is executed the screen displays the line of text that contained the string `day` if a match of `day` occurred in the filename `sched`.

-
- The **pipeline** command connects output of one program to input of another.

The purpose of the | (pipeline) command is to take the output from one program and use it as the input to another program. An example of the command line is:

ls | sort

The command is entered after the UNIX system prompt and is terminated by pressing **(ENTER)**. In the example, the **ls** command output is used by the | (pipeline) command as the input to the sort command. The results displayed are a listing of the current directory files in alphabetical order.

- The **vi** command invokes the UNIX system visual editor.

The purpose of the **vi** command is to invoke the UNIX system visual editor program. An example of the vi command line is:

vi newfile

The command is entered after the UNIX system prompt and is terminated by a carriage return. Note **vi** is the command and *newfile* is the file to be edited.

There are many options available for the vi command. The following section deals with vi editor.

UNIX System Editor

The vi editor is used to add, modify, or delete text that is required during the usage of the Script Builder.

The *VI User's Handbook* is used for reference throughout this appendix.

Invoking the Editor

Refer to the *VI User's Handbook* for details about the purpose and usage of the editor commands to invoke **vi**.

The command **vi filename**, allows you to open a new file or edit an existing file. This is the most common means of accessing a file for modification by the vi editor.

Exiting from the Editor

Refer to the *VI User's Handbook* for details about the purpose and usage of the editor commands to exit **vi**.

The **wq** and **ZZ** commands are used to write and exit the vi editor.

File Manipulation

Refer to the *VI User's Handbook* for details about the purpose and usage of the editor commands for manipulating text.

The file manipulation commands are the *w*, *w filename*, and the *w! filename* commands used for writing to the current file and the *r* command for reading text from other files.

Text Scrolling

Refer to the *VI User's Handbook* for details about the purpose and usage of the editor commands for scrolling through text.

The control key, along with the use of other selected keys, allows you to scroll the text on your screen. Those commands are **CTRL** **D** (scroll down), **CTRL** **U** (scroll up), **CTRL** **F** (page forward), **CTRL** **B** (page backward), and **CTRL** **I** (refresh screen).

Cursor Movement

Refer to the *VI User's Handbook* page 17 for details about the purpose and usage of the editor commands for cursor movement.

Cursor movement up, down, right, or left can be controlled by special characters or with the arrow keys. Moving the cursor over words requires the *w* command for moving forward one word, and *b* for moving the cursor back one word.

Searching for Text

Refer to the *VI User's Handbook* page 21 for details about the purpose and usage of the editor commands for text searching.

You can search for text by either using the character within a word or by using a word or phrase itself. Enter a slash (/) followed by the characters you wish to search for. The string search command may be repeated by using the *n* command.

Adding Text

Refer to the *VI User's Handbook* page 25 for details about the purpose and usage of the editor commands for adding text to a file.

There are three methods for adding text to new or existing files. You can append text with the **a** commands, insert text with the **i** commands, or open a new line of text with the **o** commands.

Deleting or Changing Text

Refer to the *VI User's Handbook* for details about the purpose and usage of the editor commands for deleting or changing text.

The **x**, **dw**, and **dd** commands are used to delete text while the **cw** and **C** commands are used to change existing text.

Undoing Changes

Refer to the *VI User's Handbook* for details about the purpose and usage of the editor commands for undoing the last change that was made to the text.

The **u** command allows you to undo the last command that you executed.

UNIX System Shell

Shell Command Usage

The UNIX system shell is more than just the UNIX system command interpreter. The Shell provides the user with a very powerful programming tool.

The Shell provides your terminal with the "\$" prompt and awaits your keyboard input. When you have completed your input by typing a carriage return, the Shell will classify that input as a command line. Each item in the command line will be evaluated and the proper action will be taken.

Shell Program Examples

Greeting Shell Program

The following is an example of a Shell program that will evaluate the date and then display the greeting "Good Morning", "Good Afternoon", or "Good Evening" based on the hour of the day.

Greeting Shell Program Example

```
hour='date | cut -c12-13'
if [ $hour -ge 0 -a $hour -lt 12 ]
then
echo "Good Morning"
elif [ $hour -ge 12 -a $hour -lt 18 ]
then
echo "Good Afternoon."
else
echo "Good Evening."
fi
```

Phone Number Lookup

The following is an example of a Shell program which will examine a file and extract a specified name, if available, and display a message with the results.

Lookup Name in Phone List Example

```
if [ $# -ne 1 ]
then
echo "Usage: lookup name"
else
cd
output='grep "$1" phon_1st'
if [ -z "$output" ]
then
echo "Couldn't find $1 in phone list."
else
echo "$output"
fi
fi
```

Table B-1 describes the usage of the UNIX commands as they relate to similar MS-DOS commands.

Table B-1. Conversion Between UNIX and MS-DOS Commands

Description	UNIX	DOS
Examine text	cat	type
Long directory	ls -la	dir
Page directory	ls -la pg	dir /p
Short directory	ls -x	dir /w
Copy file	cp	copy
Remove file	rm	del or erase
Change file name	mv	ren
Show file type	file	<i>None</i>
Make directory	rmdir	rmdir or rd
Return to home directory	cd	cd \
Current location	pwd	cd

Continued on next page

Table B-1. Conversion Between UNIX and MS-DOS Commands — *Continued*

Description	UNIX	DOS
Regular slash example	cd /usr/go	cd \usr\go
Dash example	ls -la	dir \p
Paging	cat tmp pg	type tmp more

Bibliography

The following manuals may be of assistance for individuals who would like additional information regarding the topics covered in this appendix.

UNIX and C Reference Material

The following manuals may be ordered from:

AT&T GBCS Publications Fulfillment Center
P.O. Box 4100
Crawfordsville, IN 47933
1-800-457-1235 or outside the United States 317-361-5353

UNIX System V Release 3.2
User's Reference manual
Order Code 307-232 and 305-649 (update)

UNIX System V Release 3.2
Programmer's Reference Manual and update
Order Code 307-226 and 305-663 (update)

UNIX System V Release 3.2
User Guide and update
Order Code 307-231 and 305-660 (update)

The following books may be purchased at local bookstores.

UNIX Programming Environment
Kernighan and Pike
Prentice-Hall ISBN 0-13-937681-X

Exploring the UNIX System
Kochan and Woods
Hayden Books ISBN 0-8104-6268-0

Programming in C
Kochan
Hayden Books ISBN 0-8104-6261-3

C Programming Language
Kernighan and Richie
Prentice-Hall ISBN 0-13-110163-3

The Vi User's Handbook
Bolsky
Prentice-Hall ISBN 0-13-941733-8

Database Environment

C

Database Environment Overview

Call data information is stored and organized in the ORACLE relational database management system (ORACLE RDBMS). The DBMS offers a high degree of flexibility in retrieving information which is contained in several data tables. With the DBMS, you can generate your own custom tailored call data reports.

Information is organized in a series of tables, containing rows of data. Each table serves as the “framework” to house the rows of information. A row is the actual data record.

This chapter describes how to determine database space requirements. In addition, this chapter reviews SQL*PLUS software program, a tool used to access the ORACLE RDBMS.

For information on how to install the ORACLE software package, refer to Chapter 3, “Installing the Base System Software,” of *CONVERSANT VIS Version 4.0 Software Installation*, 585-350-111.

Tables Associated with Call Handling Reports

During the installation of the base ORACLE software package, the following tables are created to record detail call handling data:

- CCA — Call classification analysis data (contains one record for each attempted transfer or outdial)
- CCASUM — Summary data for the CCA table (contains one record per hour, phone number, and result code)
- CDH — Call detail handling data (contains one record per call)
- CDHSUM — Summary data for the CDH table (contains one record per hour and script)
- EVENTS — Event data defined in all applications (contains one record per event)
- EVSUM — Summary data for the EVENTS table (contains one record per hour and event number)
- TRASUM — Overall traffic summary data (contains one record per hour and channel)

Following is field (column) information for each of these tables. Note that the data type of each field is the ORACLE data type, not the data type used in Script Builder.

The VIS provides four different reports using the data accumulated in these tables. Refer to Chapter 4, "Reports Administration", for additional information on the reports available from the System Reports screen.

If you are interested in generating your own customized report or would like to query these system tables directly, refer to the *SQL*Plus User's Guide and Reference* manual. Note that all these tables are created and owned by the sqlplus user **sti/sti**.

If you would like to verify the definition of a table (for example, the CCA table):

1. Enter:

sqlplus sti/sti

to start the sqlplus session.

2. Enter:

describe CCA

System response:

The current definition of the CCA table will be displayed similar to the following:

Name	Null?	Type
-----	-----	-----
START_TIME		DATE
PHONE_NUM		CHAR(16)
RESULT_CODE		CHAR(1)

3. Enter:

quit

to exit sqlplus.

CCA Table

The CCA table contains the following rows of data:

- START_TIME is a date field that specifies the starting time of each attempted transfer or outdialed call.
- PHONE_NUM is a character field that specifies the phone number of an attempted transfer or outdialed call. This field can be up to 16 characters in length.
- RESULT_CODE is a character field that indicates the disposition of the call. This field can be 1 character in length.

CCASUM Table

The CCASUM table contains the following rows of data:

- PHONE_NUM is a character field that specifies the phone number of an attempted transfer or outdialed call. This field can be up to 16 characters in length.
- START_TIME is a date field that specifies the starting time of the call summary period.
- END_TIME is a date field that specifies the ending time of the call summary period.
- SUM_TOT is a numeric field that indicates the number of calls transferred or outdialed in this period with this disposition and associated phone number.
- RESULT_CODE is a character field that indicates the disposition of the call. This field can be 1 character in length.

Note that records are generated on per hour, per telephone number and per result_code basis.

CDH Table

The CDH table contains the following rows of data:

- ID is a numeric field that specifies a unique identification number that joins one CDH.ID to multiple EVENTS.ID.
- CHANNEL is a numeric field that specifies a channel number on which the script was running. This field can be up to 3 numbers in length.
- SCRIPT is a character field that indicates the script name. This field can be up to 16 characters in length.
- START_TIME is a date field that specifies the starting time of each call.
- END_TIME is a date field that specifies the ending time of each call.

CDHSUM Table

The CDHSUM table contains the following rows of data:

- ID is a numeric field that specifies a unique identification number joins CDHSUM.ID to EVSUM.ID. Note that this field is not related to the ID field in CDH table but that it is related to the ID field in the EVSUM table.
- SCRIPT is a character field that specifies the script name. This field can be up to 16 characters in length.
- START_TIME is a date field that specifies the start of the hour (for example 10:00:00).
- END_TIME is a date field that indicates the end of this hour.
- DURATION is a numeric field that specifies the sum of script run times during this hour in seconds.
- CALL_TOT is a numeric field that indicates the total number of calls during a one-hour period for this script.

⇒ NOTE:

Records are generated on per hour and per script basis.

EVENTS Table

The EVENTS table contains the following rows of data:

- ID is a numeric field that specifies a non-unique identification number. Note that each call will result in a certain number of events records being created, depending on the number of events defined. All events records associated with this call will have the same ID number as the ID field of the corresponding CDH record.
- EVENT_NUMBER is a numeric field that is an internal mapping number of each of the defined events. Their values can be found in the **<appl.>D=** file in the **/att/trans/sb/<appl>** directory.
- EVENT_CNT is a numeric field that contains the field value if the event type is a number in Script Builder.
- EVENT_TM is a date field that contains the field value if the event type is the time or date format in Script Builder.
- EVENT_STR is a field that contains the field value if the event type is the character string in Script Builder. The value stored in, count, time, or string will be the value of the Script Builder event variable when the script terminates.

EVSUM Table

The EVSUM table contains the following rows of data:

- ID is a numeric field that specifies a unique identification number. Note that the values in this field are not related to the ID values in the EVENTS table but are related to the ID values in table CDHSUM.
- EVENT_NUMBER is a numeric field that specifies the internal mapping between the event and an internal number.
- SUM_TOT is a numeric field that indicates the total number of occurrences for this event. Note that for the number type of event, the value in this field is the sum of the values of this event field of all the calls. For example, if an event NUM_TRANS is defined to keep track of the number of transactions for each call. Each call may result in a different value of NUM_TRANS. This SUM_TOT field will then contain the sum of NUM_TRANS for all calls during this period of time. On the other hand, if the event type is not number, each call will result into the SUM_TOT incrementing by one, that is, count.

⇒ NOTE:

Records are generated on per hour and per event_number basis.

TRASUM Table

The TRASUM table contains the following rows of data:

- START_TIME is a date field that specifies the start of hour (for example 10:00:00).
- END_TIME is a date field that specifies the end of hour (for example 10:59:59).
- CHANNEL is a numeric field that indicates the channel number. This field can be up to 3 numbers in length.
- CALL_TOT is a numeric field that specifies the total number of calls.
- DUR_TOT is a numeric field that specifies the total duration in seconds.

⇒ NOTE:

Records are generated on per hour and per channel basis. No calls during this hour on this channel result in no record.

Resizing Call Handling Data Tables

The sizes of the above call handling tables are defined in **/oracle/dist/cdh/sql** file. Although the sizes were carefully engineered, it is possible that one or more of the tables need to be resized in order to accommodate the heavy traffic on your system or a greater number of events defined in your applications. The EVENTS and CDH tables (as well as their index tables) might need to be resized.

Use the following procedure to resize the call handling data table:

⇒ NOTE:

If you do not want to preserve existing call handling data, skip Steps 7 and 9 in the following procedure.

1. Login to the system as **root**.
2. Enter **cd /oracle/dist** to change directories.
3. Enter **cp cdh.sql o.cdh.sql** to save the original copy.
4. Enter **dbused** and write the number of Mbytes that the troubled table is currently occupying.
5. Modify the **cdh.sql** file as follows:
 - a. Find the **create table xxx** statement block, where *xxx* is the table name (for example, *cdh* or *events*)
 - b. Modify the **storage (initial 999k)** to a bigger number, where *999* is the current initial size for the table and *k* stands for kilobytes (1024 bytes).

The new values specified should be at least one-half of the current table size shown by **dbused** in Step 4. You can use the format **99m**, where *m* stands for Mbytes (1,000,000 bytes). For example, **storage (initial 3m)** means the table will have an initial size of 3 Mbytes.
6. Enter **stop_vs** to stop the voice system or perform the **Stopping the Voice System** procedure in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112.
7. Enter **systblsav file** to save the existing call handling data, where *file* is a UNIX file or a device name where the data will be saved (that is, **/dev/rmt/c0s0**).
8. Enter **sqlplus \@ /oracle/dist/cdh.sql** to reinitialize the table(s).
9. Enter **systblres file** to restore the existing call handling data, where *file* is same file name specified in Step 7.
10. Enter **start_vs** to start the voice system or perform the **Starting the Voice System** procedure in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112.

Database Space Requirements

The amount of space needed for the database should be decided at the initial software load because the size of the database can affect the disk partition sizes (the database is stored in root partition). The formulas that will be discussed in this chapter help to determine the sizing requirement.

⇒ NOTE:

Once the disk partitions are specified, they can be changed only by reloading the software.

A substantial amount of “growth factor” space must also be allocated for expansion purposes (approximately 30%). The following information describes how to determine the database space sizing requirements.

Database Sizing

⇒ NOTE:

The following database sizing formulas are only estimates and are not meant to be exact calculations of the database space allocations on the disk. Furthermore, the following formulas are intended to represent the maximum values that may be attained in sizing the database. Consequently, the database space calculations derived from these formulas is not necessary in every case. You may adjust your calculations to fit your own database sizing needs.

Local Database Sizing

Database space is allocated in 512 byte blocks. The database requires approximately 2500 blocks of overhead space.

Each table requires approximately 5 blocks of initial overhead space for the table definition and the list of data extents. A 512 byte block requires an average of 22 bytes of overhead. Each row requires an average of 5 bytes of overhead. Every column (field) present in a row requires 1 byte of overhead. Columns that contain no data (NULL column) still requires this 1 byte of overhead.

Use the following formula to calculate the number of bytes required for a row in a table:

$$5 + (\# \text{ of columns } - 1) + (\text{the sum of average column sizes})$$

This formula provides an estimate of the number of bytes required for a row in a table. Multiply this by the number of estimated rows to obtain the space requirement for a table:

$$((A W)/(512-22)) + 5 = \text{size of the table in 512 byte blocks}$$

where:

A = number of rows

W = number of bytes in a row

This formula calculates the size of a sequential database table. A sequential database table (the default used by Script Builder) means records are retrieved by searching the table, starting at the first record and continuing down the table until a match is found. An indexed table requires 33% more storage than a sequential table. If you index a table, then you should multiply the previous formula by 1.3.

Example of Calculating Local Database Table Size

An application uses two Local Database Tables. The first table has the following makeup.



NOTE:

Characters (characters) are bytes in the descriptions below:

Table #1 has the following fields:

Name(24 characters)
SSN(9 characters)
DOBirth(Date field, 10 characters)
Sex(1 character)

Table #2 has the following fields:

Policy(10 characters)
Description(30 characters)

Assuming there are 5000 records (or rows) in Table #1, and 500 in Table #2, the calculations would be:

Table #1

$$((A \times W)/(512 - 22)) + 5 = \text{size of table in 512 byte blocks}$$

where:

$$A = \text{number of rows} = 5000$$

$$W = \text{number of bytes in a row} = 24 + 9 + 10 + 1 = 44$$

$$((5000 \times 44)/(490)) + 5 = 454 \text{ blocks}$$

Factor in indexing,

$$454 \times 1.3 = 590 \text{ blocks required for Table \#1}$$

Table #2

$$((A \times W)/(512 - 22)) + 5 = \text{size of table in 512 byte blocks}$$

where:

$$A = \text{number of rows} = 500$$

$$W = \text{number of bytes in a row} = 10 + 30 = 40$$

$$((500 \times 40)/(490)) + 5 = 46 \text{ blocks}$$

$$\text{Total Local Database space} = \text{Table \#1} + \text{Table \#2} = 590 + 46 = 636 \text{ blocks}$$

VIS Database Sizing

There are 7 tables used by all applications loaded on your system. The tables store information about each call. The data stored in these tables are used to generate the reports on the system. With the exception of the tables EVENTS and EVSUM, only the number of days of storage (X) and the expected daily call volume for all applications (Y) are needed. Use the formulas provided in Figure C-1 to determine the amount of space (512 byte blocks) required by each of the seven call data tables. Note that for the formulas shown in Figure C-1, $W = 5 + (\text{number of columns} \times 1) + (\text{sum of average column sizes})$; $X = 1 + \text{number of days of data to keep as specified in /vs/bin/util/croncdh}$ (default is 7); $Y = \text{calls per day}$; and $Z = \text{number of call data events in all scripts used on the system}$.

$$\begin{aligned} \text{CDH} &= \left(\left(\frac{X \times Y \times 51}{512 - 22} \right) + 5 \right) 1.3 \\ \text{CDHSUM} &= \left(\left(\frac{24 \times X \times 55}{512 - 22} \right) + 5 \right) 1.3 \\ \text{EVENTS} &= \left(\left(\frac{W \times X \times Y \times Z}{512 - 22} \right) + 5 \right) 1.3 \\ \text{EVSUM} &= \left(\left(\frac{24 \times X \times Z \times 19}{512 - 22} \right) + 5 \right) 1.3 \\ \text{CCA} &= \left(\left(\frac{X \times Y \times 34}{512 - 22} \right) + 5 \right) 1.3 \\ \text{CCASUM} &= \left(\left(\frac{24 \times 365 \times 47}{512 - 22} \right) + 5 \right) 1.3 \\ \text{TRASUM} &= \left(\left(\frac{24 \times X \times 35}{512 - 22} \right) + 5 \right) 1.3 \end{aligned}$$

Figure C-1. Call Data Table Formulas

When call data events are captured by the application, the events table uses the most space of the seven call data tables. Therefore, you must calculate the value of W very carefully for the EVENTS table.

For example, if an application captures two 10-character event strings, three 15-character event strings, a total of five application events, the formula for W is that provided in Figure C-2.

$$W = 5 + (\text{number of columns} \times 1) + (\text{sum of average column sizes})$$

$$W = 5 + (5 \cdot 1) + \left(5 + 2 + 2 + 0 + \left(\frac{(10 + 10 + 15 + 15 + 15)}{5} \right) \right)$$

$$W = 5 + 5 + (5 + 2 + 2 + 0 + 13)$$

$$W = 32$$

Figure C-2. Events Calculations

The events table has 5 columns or fields:

- ID_EVENT is the internal call data ID and is always 5 characters.
- EVENT_NUM is the event number assigned by Script Builder of the event and is fixed at 2 characters.
- EVENT_CT is the running total of the number of events tracked and is fixed at 2 characters.
- EVENT_TM is a date field that is not currently used but must be accounted for.
- EVENT_STR is a string variable that stores any event strings the developer has established.

⇒ NOTE:

Information on each of the fields in the events table is provided in this chapter in the section on "Tables Associated with Call Handling Reports" on page C-2

In this example, the events table consists of four columns: ID_EVENT (average size is 5 characters), EVENT_NUM (average size is 2 characters), EVENT_CT (average size is 2 characters), and EVENT_STR (the average of 2 10 character strings and 2 15 character strings). The field EVENT_TM is set to 0 since it is not used. The average column sizes was used in the above example in calculating the value for W.

The database also contains a rollback segment which records actions which should be undone in specific cases. The size of the rollback segment grows dynamically. It is recommended that the space to hold call data for one day or 20% of the database, whichever is larger, be allocated to the rollback segment. To find the space to hold call data for 1 day, set X=1 in the calculations you just performed and recalculate the total database size by summing up all the tables. Then, compare that number to 20% of the total database size calculated previously. Use the larger of the two numbers as the 'rollback segment' in the two-line formula below.

The total space allocated to the ORACLE database must take into account any database tables, call data tables, rollback segment, and the 30% growth factor mentioned earlier.

(local database tables + total database + 2500 overhead +
rollback segment) \times 1.3 \times .000512 = Total Mbyte allocated to the ORACLE
database.

Example of Calculating Database Size Required

Using the formula above, the total space required for the ORACLE database can be calculated. The calculations shown earlier for the local database tables will be used and thus will not be duplicated here.

Assume that you want to store the default 7 days of call data on the system, expect 12500 calls per day on the system, and collect 20 events per call. Assume all of the 20 events are numbers (not event strings). The calculations would use the following variables:

- X= 1 + number of days of storage = 8
- Y= calls per day = 12500
- Z= number of call events in script = 20
- W= 5 + (number of columns) + (sum of average column sizes) = 5 + 5 + (5 + 2 + 2 + 0 + 0). Notice the average column sizes for both EVENT_TM and EVENT_STR are 0 because neither event dates or event strings are being used. W = 19.

The database table sizes would be:

- $CDH = (((8 \times 12500 \times 51)/492) + 5) \times 1.3 = 13482$
- $CDHSUM = (((24 \times 8 \times 55)/492) + 5) \times 1.3 = 34$
- $EVENTS = (((19 \times 8 \times 12500 \times 20)/492) + 5) \times 1.3 = 100413$
- $EVSUM = (((24 \times 8 \times 20 \times 19)/492) + 5) \times 1.3 = 199$
- $CCA = (((8 \times 12500 \times 34)/492) + 5) \times 1.3 = 8990$
- $CCASUM = (((24 \times 365 \times 47)/492) + 5) \times 1.3 = 791$ (this table is fixed in size)
- $TRASUM = (((24 \times 8 \times 35)/492) + 5) \times 1.3 = 24$

The database size then is $CDH + CDHSUM + \dots = 123933$ (in blocks).

The rollback segment is calculated as either 20% of 123933 (24786) or the space to hold call data for 1 day, whichever is larger. The space to hold call data for 1 day (substitute 1 for X in above calculations) is:

- $CDH = (((1 \times 12500 \times 51)/492) + 5) \times 1.3 = 1690$
- $CDHSUM = (((24 \times 1 \times 55)/492) + 5) \times 1.3 = 10$
- $EVENTS = (((19 \times 1 \times 2500 \times 20)/492) + 5) \times 1.3 = 12557$
- $EVSUM = (((24 \times 1 \times 20 \times 19)/492) + 5) \times 1.3 = 31$
- $CCA = (((1 \times 12500 \times 34)/492) + 5) \times 1.3 = 1129$
- $CCASUM = (((24 \times 365 \times 47)/492) + 5) \times 1.3 = 791$ (this table is fixed in size)
- $TRASUM = (((24 \times 1 \times 35)/492) + 5) \times 1.3 = 9$

The space to hold call data for one day is $CDH + CDHSUM + \dots = 16217$. Since 24786 is larger than 16217, then the number used for the rollback segment is 24786.

The total space required for the ORACLE database is:

$$\begin{aligned} & (\text{local database tables} + \text{total database} + 2500 \text{ overhead} + \text{rollback}) \\ & 1.3 \times .000512 = .000512 = \\ & (636 + 123933 + 2500 + 24786) \times 1.3 \times .000512 = 101 \text{ Mbyte} \end{aligned}$$

Increasing the Database Size

If the size allocated for the database after the installation of the CONVERSANT VIS DBMS Base ORACLE package is inadequate for your applications, use the following procedure to increase the database size.

1. Login as **oracle**.
2. Type **su -** and then press **(ENTER)**. Enter the root password when prompted to do so, then press **(ENTER)**.
3. Confirm that the database system is up and running.

⇒ NOTE:

There is no need to stop the voice system while resizing the database.

4. Type **/vs/bin/util/dbfrag**.
5. Note the number of free blocks and multiply the number by 4 to get the actual number of free 512 byte blocks.
6. Type **df** to show the number of free blocks available in the root partition. Space will be taken from this partition for the ORACLE database.
7. Calculate the number of bytes you want to add to the database.

⇒ NOTE:

Note that you may not decrease the database size without reloading the software. Consequently, you should be careful when calculating the number of bytes to add to the database size.

- c. Perform the "Database Sizing" Calculations provided in this chapter to determine the proper database size (in megabytes).
- d. Multiply the proper database size (in megabytes) to bytes by multiplying by 1,000,000.
- e. Subtract the current size of the database from the proper database size.

⇒ NOTE:

If there is not enough space in root, you will need to repartition the system.

8. Type **/oracle/bin/sqldba** and then press **(ENTER)** to enter sqldba mode.

9. Type the following commands in the order shown, pressing **ENTER** after each command:

- **connect internal**
- **alter tablespace system**
- **add datafile '/oracle/dbs/dbsA2.dbf'**
- **size <number>;**

(where <number> is the previously calculated number of bytes that you wish to add to the database)

- **exit**

⇒ NOTE:

The file name 'dbsA2.dbf' is a recommended name. If this file is already in existence in this directory, you can use dbsA3.dbf etc.

The 1000K is an example of the additional space needed by the database. It is 1000 1024 bytes).

10. Type **/vs/bin/util/dbfrag** again to verify that the number of free blocks has been increased as desired.
11. Type **exit** to return to user oracle.
12. Type **exit** to log off.

Database Optimization

For large databases, you can use indexes on key fields to greatly reduce the time necessary to search the tables. Think of database indexes as you would the index to a book. If you want to find information on a subject, checking the index first helps you to locate the information in the book much more quickly than paging through the book. The same is true for finding data in the database.

⇒ NOTE:

Modify operations take longer if the table is indexed.

Indexed fields can be especially important in applications that require a “lookup” from a large table based on user input (data) to the script. This input generates a SQL statement for accessing the database that has the following form:

```
SELECT * from "table_name" where "field1" = 'data';
```

If FIELD1 has an index created for it in the database, all records that match the criteria specified in the select statement are located much faster than if there is no index.

FIELD1 is a key field in this example because it is the field that is used to specify selection criteria. Indexes only decrease read time when they are created on key fields. A SQL statement may have more than one key field, as in the following example:

```
SELECT * from "table_name" where "field1" = 'data1' AND "field2" = 'data2';
```

In this example, FIELD1 and FIELD2 are key fields. Creating indexes for each of these fields will enhance system performance.

Creating Unique Indexes

Unique indexes on fields enforce uniqueness of the data in that field across the entire table of records. A good example of a field for which you might create a unique index is one that contains a social security number (SSN). A unique index on an SSN field insures that only one record with a given SSN can exist in the table. Attempts to add records with that SSN will fail.

To create a unique index on a field called **field1** in a table called **table_name**, log in to ORACLE through SQL*PLUS using **SQL*Plus sti/sti**, then type:

```
create unique index field1_iname on "table_name" ("field1");
```

Creating Non-Unique Indexes

Non-unique indexes do not prevent the same data from appearing in that field in several records in the same table. For example, if a field contains the area code of a telephone number and an index is created for that field, it must be a non-unique index since other records may require the same number in their area code field.

To create non-unique indexes on fields called **field1** and **field2** in a table called **table_name**, log in to ORACLE through SQL*PLUS, then type:

```
create index field1_iname on "table_name" ("field1");  
create index field2_iname on "table_name" ("field2");
```

Bibliography

The following manuals may be of assistance for individuals who would like additional information regarding databases and other topics covered in this appendix.

ORACLE Reference Material

The following manuals may be ordered from:

AT&T GBCS Publications Fulfillment Center
P.O. Box 4100
Crawfordsville, IN 47933
1-800-457-1235 or outside the United States 317-361-5353

ORACLE Pro*C documentation set
Order Code 106713670

ORACLE SQL and RDBMS documentation set
Order Code 106673510

ORACLE SQL*FORMS documentation set
Order Code 106673528

ORACLE SQL*MENU
(includes SQL*Menu User's Guide and Reference Version 5.0)
Order Code 106673544

ORACLE SQL*NET
(includes SQL*Net TCP/IP User's Guide Version 1.2)
Order Code 106651730

ORACLE SQL*REPORTWRITER
(includes SQL*ReportWriter Reference Manual Version 1.0)
Order Code 106673536

Access SQL*PLUS Software Program

The SQL*PLUS software program is a tool used to access the ORACLE RDBMS. It is included in the CONVERSANT VIS DBMS Base ORACLE package. This tool can be used to review database information without having to access the Voice System directly. The SQL*PLUS software program allows you to go directly to the database information you need.

At the system prompt, type **sqlplus sti/sti**, then press (ENTER) to access Script Builder database tables or type **sqlplus system/manager** for SQL administrative tasks.



CAUTION:

*Exercise caution when using SQL*PLUS sti/sti or sqlplus system/manager to access Script Builder database tables. Do not alter any data, schema, log-ins, or passwords using SQL*PLUS. Doing so may corrupt the VIS and Script Builder software and result in non-warranty maintenance. The ORACLE right-to-use license is restricted solely to CONVERSANT VIS applications.*

Application table manipulation (creation, drop, or schema change) is best administered using VIS Script Builder software. If you have to use SQL*Plus to drop a table or change a table schema, make sure that the applications referring to this table are re-verified and reinstalled each time a table is dropped. Without re-verifying and reinstalling the applications after the referred tables are dropped or schema-changed, the applications may not be able to communicate with the database correctly.

Note that Script Builder and SQL*PLUS have different conventions for naming tables and columns. Script Builder is case sensitive; table or column names may use either uppercase or lowercase characters in Script Builder. By comparison, SQL*PLUS is not case sensitive; table or column names using lowercase characters are interpreted to uppercase characters. Consequently, if you use lowercase characters while naming a table or column in Script Builder, when later executing SQL*PLUS, you must enclose the lowercase references (including table names and columns) in double quotes (""). An easy way to avoid this confusion would be to use upper case letters on all tables and columns in Script Builder.

For example, if you create a table named "tab_1" which has a column "col_1" in Script Builder, the query of this table running SQL*PLUS should be as follows:

```
select "col_1" from "tab_1" where "col_1" = 'xxx';
```

However, if you type **select col_1 from tab_1 where col_1 = 'xxx'**; the command will be interpreted by SQL*PLUS as *select COL_1 from TAB_1 where COL_1 = 'xxx'*; If table TAB_1 and column COL_1 do not exist, the query will fail. Note that this query will fail even if table tab_1 and column col_1 exist.

ORACLE creates a trace file in the **/oracle/rdbms/log** directory each time the system is rebooted. These trace files are not automatically removed by ORACLE and must be removed by the user or administrator if the files are no longer wanted. In addition, ORACLE creates a log file **/oracle/tcp/log/orasrv.log** that contains all the remote login information which is automatically created and appended by ORACLE. This log file is not automatically removed by ORACLE and may be removed or truncated by the user or administrator.

If you would like additional information on the ORACLE RDBMS or SQL*PLUS, contact your AT&T representative or the AT&T CIC (Customer Information Center).

Database DIP Timeout

WARNING:

Always be sure to stop the voice system before shutting down the remote machine to avoid an unexpected interruption of service. The VIS and remote ORACLE connection is established during the start voice system procedure on the VIS. After the connection is established, the VIS does not keep track of the status change of the remote machine. A shutdown and reboot operation on the remote machine drops the original database connection between the VIS machine and the remote machine. If the remote machine is shut down and rebooted while the voice system is still active, the VIS detects this status change only when calls come in to the system that involve remote database operation for call processing. The VIS will take 20 to 45 seconds to reestablish the remote connection and will not be able to process calls during this time period.

In certain cases, the CONVERSANT database DIP (**oraldb**) may not receive a timely response from the server machine. This may be due to a variety of factors, such as the server machine is down, the server machine is operating slowly, an application query of a large non-indexed table, network congestion, etc. While the DIP is waiting for a response from the server machine, the message queue of the DIP may back up. If the message queue backs up to the current maximum number of messages (255), performance problems on the VIS may result. In order to prevent this, the DIP is equipped with a timeout mechanism. By default, the DIP will timeout every 45 seconds while waiting for a response. After the timeout, the DIP will delete the messages currently queued and continue to wait for the response. The DIP will continue to timeout every 45 seconds and to empty the message queue. After the default of 300 seconds, the DIP will automatically respawn and reinitialize. It is sometimes necessary for the DIP to respawn in order to recover certain abnormal situations.

Note that the 45 and 300 seconds timeout values can be altered in file `/vs/data/ldb dip.rc`. This file is included with the generic package and contains the following default values:

```
FIRST_TMOUT=45
SECOND_TMOUT=300
```

You may change this default value to any number that is appropriate. Note that you must use the **stop_vs** and **start_vs** commands to activate the new timeout values. If the `ldb dip.rc` file is missing, the DIP will use the default timeout values of 45 and 300 seconds.

Database Access Limitations

The script accesses the database through a single database interface process (DIP). This database DIP connects to the database and provides the only interface between the script and the database.

An internal data structure called a database cursor is used to keep track of the point from which the DIP is reading in a specific table. One cursor is allocated for each read of each database table by each channel running a script that requires access to the database. The cursor remains assigned to that table until the script ends on the channel for which the cursor was allocated.

The VIS has an upper limit of 240 per user on the number of cursors that can be in use at any given time. Once this limit is reached, database transactions will not complete successfully; that is, reads may fail and inserts or updates may not occur.

To insure the integrity and consistency of the data in the database, you must keep this limiting factor in mind when you design scripts. Use the following formula to determine the number of database tables that may be accessed by a script with the VIS Version 4.0:

$$\text{ch read} \times 1 < 240$$

where:

- `ch` = number of channels running scripts with database access
- `read` = number of Read Table operations performed on different tables by scripts (per channel)



NOTE:

Multiple reads of the same table use only one cursor.

The following are sample calculations using various configurations and numbers of Read Table operations.

- If you have a 24-channel system running a script that performs four Read Table operations on four different tables per channel, the calculation is:

$$24 \times 4 \times 1 = 96$$

Since 96 is less than 240, the database operations will proceed properly.

- If you have a 36-channel system running a script that performs four Read Table operations on the same table per channel, the calculation is:

$$36 \times 1 \times 1 = 36$$

Since 36 is less than 240, the database operations will proceed properly.

- If you have a 48-channel system running a script with five Read Table operations on five different tables per channel, the calculation is:

$$48 \times 5 \times 1 = 240$$

In this case, if all 48 channels are performing five Read Table operations, some database operations will fail.

- A script developer wants to develop a script that executed three Read Table operations on three different tables per channel:

$$240 / (3 \times 1) = 80$$

Therefore, the script can run on up to 80 channels before it encounters database access problems.

- A script developer wants to develop a script to run on 36 channels simultaneously:

$$240 / (36 \times 1) = 6.666$$

Therefore, the script can perform up to six Read Table operations on up to six different tables per channel before it encounters database access problems.

Monitoring the Database

The following commands may be used to monitor database space utilization. Refer to the *ORACLE RDBMS Database Administrator's Guide* for information on SQLDBA and other commands that may be used to monitor the database.

- The **dbcheck** command checks space usage and rollback segment growth. The **dbcheck** command has three different usages. The *-i* option installs cron entries and error messages. The cron job can be placed in either the root cron file or added to the end of **/vs/bin/util/croncdh** job that runs once a day. This is prompted for interactively. The *-i* option also asks if you want new error messages added to the **att** errors file along with explanations used with the **explain** command. This installation only needs to be run if you want the warnings to show up in the system message log or you want to schedule automatic checking at regular intervals. The *-r* option removes any cron entry set up by the *-i* option.

The third usage of **dbcheck** is [-w n[,m]][-s][-e][-m user[~user...]]. This usage actually checks database space against user set water marks. The following occurs:

- Free space is checked against the user set threshold n, 15% default
- Rollback segment growth is checked against the user set threshold m, 20% default

When executed, the **dbcheck** command will generate the appropriate warnings (below) if the database falls below n percent free or if the rollback segments grow to be more than m percent of the total database size.

The command, by default, will send warning messages to the error log indicating a threshold has been exceeded (the *-i* option must be run first). The *-e* option will disable entries from going into the log file. The *-s* option will print the warning messages to standard output. The *-m user* option allows for the messages to be mailed to *user*. Multiple users can be sent the mail by separating the user names with ~. Following are sample outputs:

(Output to error log when less than 13% available or more than 23% used by rollback)

```
# dbcheck -w13,23
```

```
* Mon Feb 15 16:35:06 1993 dbcheck logTest.c:418
DBC001  -- -- --- Database 10 percent free, 3072 Blocks of 30720 available.
          Reason: Low DB Space.
* Mon Feb 15 16:35:06 1993 dbcheck logTest.c:418
DBC002  -- -- --- Extents low, 100 used of 121, on object MY_TABLE
          Reason: Low DB Extents
* Mon Feb 15 16:35:06 1883 dbcheck logTest.c:418
DBC003  -- -- --- Rollback segments=7680 blocks, 25 percent of total space.
          Reason: High Rollback Usage.
```

Figure C-3. dbcheck Output Example

This command could be set up to run out of cron a few times a day. The **dbcheck** program return the following values:

- 0 — Success (no limits exceeded)
- 1 — Threshold exceeded
- 2 — Processing error
- 3 — Database is not running

- The **dbfree** command is a shell script that lists the amount of free space in the database by free contiguous blocks. The result will be a detailed listing of each free memory area followed by the sum of each tablespace. The free blocks listed are in 2048 bytes/block (ORACLE blocks). There is also a column that lists the same information in Mbytes. The *-h* option will remove the column headers. Following is a sample output using this command.

Contiguous extents

TABLE SPACE NAME	FILE_ID	START_BLOCK	MBYTES FREE	ORACLE BLOCKS FREE
SYSTEM	1	5142	.02	12
SYSTEM	1	5560	.03	13
SYSTEM	1	4892	.04	18
SYSTEM	1	7892	.04	19
SYSTEM	1	4164	.05	28
:	:	:	:	:
:	:	:	:	:
SYSTEM	1	5598	.73	375
SYSTEM	1	8946	4.00	2048
SYSTEM	1	12650	4.45	2277
SYSTEM	1	25179	10.00	5120
SYSTEM	1	14939	20.00	10240
sum			47.18	24070

29 rows selected.

Figure C-4. dbfree Output Example

The **dbfree** program will return either a 0 indicating success or a 1 indicating a processing error.

- The **dbfrag** command is a shell script that reports on database allocation, usage, and fragmentation. The block size reported is in ORACLE blocks (2048 bytes). You can request the information to be reported in Mbytes with the **-b** option. This tool is useful to get a quick check on database usage and provides a shell interface into some key ORACLE statistics. This tool only reports on information in the 'SYSTEM' tablespace. With the **-h** option, the listing will be printed without a header. This option is useful if you want to parse this output to get select a specific field.

(Report information in Mbytes, -b)

dbfrag -b

SYSTEM Tablespace, Space is in Mega-Bytes

ALLOCATED	FREE	% FREE	AVG/FRAG	LARGEST	FRAGMENTS	DB_FILES	ROLLBACK
129.00	108.88	84.40	5.44	108.12	20	1	7.91

Figure C-5. dbfrag Output Example

Following is an example of dbfrag that may be used to get the largest contiguous ORACLE space available:

```
dbfrag -h|awk 'length>1 {print $5}'  
10240
```

The **dbfrag** program will return either a 0 indicating success or a 1 indicating a Processing Error.

- The **dbused** command provides database use by Oracle user. The following are options for the dbused command:

- h — Skip header messages (Useful if parsing)
- s — Only produce summary information
- u uid/passwd — Specify oracle user id and password
default sti/sti, all for all users)

The dbused command is a shell script that shows the amount of space used by each object for a given user. Objects are tables, indexes, clusters, rollback, and cache. The default user is sti/sti. The -s option will report summary information grouped by objects. The special user "all" will report for the entire database.

Following is an output summary for user all.

```
# dbused -su all  
Usage summary for "all"
```

Space allocated to objects. Oracle blocks (2048 Bytes/Block)

TYPE	BLOCKS	MBYTES	EXTENTS	OBJECTS
CACHE	18	.04	1	1
CLUSTER	2843	5.55	41	8
INDEX	1530	2.99	200	113
ROLLBACK	4049	7.91	24	3
TABLE	1860	3.63	172	102
sum	10300	20.12	438	227

Figure C-6. dbused Output Example for user "all"

Following is an output summary for user sti/sti.

dbused

Usage "sti/sti"

Space allocated to objects. Oracle blocks (2048 Bytes/Block)

NAME	TYPE	BLOCKS	MBYTES	EXTENTS	MAX_EXTENTS
C1	INDEX	5	.01	1	99
CCA	TABLE	5	.01	1	99
CCASUM	TABLE	5	.01	1	99
CDH	TABLE	5	.01	1	99
CDHSUM	TABLE	5	.01	1	99
E2	TABLE	5	.01	1	99
EVENTS	TABLE	5	.01	1	99
EVSUM	TABLE	5	.01	1	99
LDBCOLS	TABLE	5	.01	1	99

Figure C-7. dbused Output Example for User sti

The dbused program will return either a 0 indicating success or a 1 indicating a Processing Error.

Information for Advanced Users

D

Information for Advanced Users Overview

This appendix contains information about the more sophisticated aspects of the CONVERSANT Voice Information System (VIS). The procedures discussed here should be used only by advanced users who are very familiar with the VIS. The topics included in this chapter include:

- Call data information storage in the ORACLE database
- Rollback segment
- Transmission level plan
- Signal processor circuit card troubleshooting
- Automatic reboot feature

Call Data Information Storage in the ORACLE Database

The VIS provides access to call classification reports, call data detail reports, and call data summary reports. This information is stored in the ORACLE database. By default, seven days worth of data for both the call classification and the call data detail are kept in the database. Approximately seven days worth of call data summary and a year of call classification summary data are maintained.

This section discusses the ways you can minimize the storage space you need. Before you implement any of these, however, make sure you understand the potential impact on your application. For example, if you reduce the storage space by reducing the days for which you keep data, you may lose information you will need later.

Sizing Your Database

Refer to Appendix C, "Database Environment", for information on calculating how big your database should be to meet your needs. Refer to Appendix E, "Performance Information", for information on commands that may be used to monitor database space utilization.

Minimizing Storage Space Needed

There are several ways to minimize the storage space you need for call data: reducing the days of information you store or storing fewer Call Data Events.

Storing Fewer Days of Data

One way to minimize the amount of storage required for the call classification and the call data detail information is to store less than seven days worth of data. The VIS knows how many days of data to archive by reading the contents of the **croncdh** file in the **/vs/bin/util** directory. The following is a sample **croncdh** file:

```
# Start the ORACLE DBMS

VSUTIL=/vs/bin/util
ORACLE_SID=A;export ORACLE_SID
ORACLE_HOME='/usr/lbin/dbhome $ORACLE_SID'
PATH=$PATH:$ORACLE_HOME/bin;export PATH
if /usr/lbin/orastat -s >/dev/null
then
:
else
ior w pfile=$ORACLE_HOME/dbs/init$ORACLE_SID.ora
fi

# perform the cron jobs

$VSUTIL/cdhsum
$VSUTIL/cdhdel
$VSUTIL/ccasum
$VSUTIL/ccadel
```

This **croncdh** file is the default file installed with the generic software. It automatically stores seven days worth of call classification and call data detail information.

To change the number of days of data stored, use the following syntax in the **croncdh** file:

```
$VSUTIL/cdhdel -x
$VSUTIL/ccadel -x
```

where *x* is the number of days of data to archive. If the “**cdhdel**” commands do not have any arguments, then the default of seven days is used, as illustrated in the default **croncdh** file.

To archive two days worth of call data detail information, and four days of call classification data, your **crondh** file would look as follows:

```
# Start the ORACLE DBMS

VSUTIL=/vs/bin/util
ORACLE_SID=A;export ORACLE_SID
ORACLE_HOME='/usr/lbin/dbhome $ORACLE_SID';export
ORACLE_HOME
PATH=$PATH:$ORACLE_HOME/bin;export PATH
if /usr/lbin/orastat -s >/dev/null
then
:
else
ior w
fi

# perform the cron jobs

$VSUTIL/cdhsum
$VSUTIL/cdhdel -2
$VSUTIL/ccasum
$VSUTIL/ccadel -4
/vs/bin/util/dbcheck -w 15,20
```

Currently, the only report produced in the System Reports for the call classification data is the call classification summary report. Therefore, saving zero days worth of call classification data will save space without affecting the reports produced by the VIS. Storing zero days worth of data means that only the call classification data for the current day will be available until the clean up and summary programs run each night after midnight. The current day's data always is maintained.

Note that if you want to write a cron job that generates your own ORACLE database reports, you will need to include the following ORACLE environment variables in the shell script.

```
# beginning of ORACLE environment variable definition
ORACLE_SID=A;export ORACLE_SID
ORACLE_HOME=/oracle;export ORACLE_HOME
PATH=$PATH:$ORACLE_HOME/bin;export PATH
ulimit 2113674
# end of ORACLE environment variable definition
```

Increasing the ORACLE Database Size

If saving fewer days of data, or fewer call data messages, does not free enough space, then you must allocate more space for the ORACLE database. Space is allocated to ORACLE during the installation of the CONVERSANT VIS DBMS Base ORACLE package. The space that ORACLE uses is in the root partition (/). If root does not contain enough space, the system must be repartitioned and reloaded with software.

If you find that your database needs to be larger than the VIS default of 14,000 blocks, DO NOT follow the hard disk space allocations in the *CONVERSANT VIS Version 4.0 Software Installation*, 585-350-111. These values assume that your database is 14,000 blocks. If your database is larger, then you need to allocate the additional space in the root partition.

For example, for a VIS with a 20,000 block database, you must add 6,000 blocks to the root partition specified in the *CONVERSANT VIS Version 4.0 Software Installation*, 585-350-111. Using the following equation, calculate how much space you need to add to the **root** partition:

$$(6,000 \text{ blocks}) \times (512 \text{ bytes/block}) / (1024 \text{ bytes/Kbyte}) = 3000 \text{ Kbyte} = 3 \text{ Mbyte}$$

Therefore, you must add approximately 3 Mbyte of space to the root partition and take 3 Mbyte from another partition, such as usr2, the speech partition.

Refer to "Increasing the Database Size" on page C-15 in Appendix C, "Database Environment" for the procedure to increasing the size of your database.

Rollback Segment

The installation of the CONVERSANT VIS DBMS Base ORACLE package creates one rollback segment (R1). This section provides information on verifying and reducing the size of this rollback segment, which records actions that should be undone under certain circumstances. As with database tables, the rollback segment will grow as needed as long as there is free space in the database. However, the rollback segment will not automatically decrease in size and some ORACLE operations can cause the rollback segment to grow drastically in size. Consequently, you may wish to restore the rollback segment to the original size by dropping and recreating the rollback segment.

Verifying or Reducing the Size of the Rollback Segment

⇒ NOTE:

The procedure to *reduce the size* of the R1 rollback segment requires that the voice system and the database system be stopped. If at all possible, you should avoid reducing the size of the rollback segment when call traffic is heavy. Note that the procedure to *verify* the size of the rollback segment does not require that the voice system and the database system be stopped. Consequently, you may verify the size of the rollback segment at any time.

You can verify or reduce the size of the rollback segment using the following procedure:

1. Login as **root**.
2. Type **/vs/bin/util/rb_init** and then press **(ENTER)** to display the current size of the rollback segment R1.

The screen will display a message similar to the following:

```
Rollback segment R1 is currently 653312 bytes in
size, would you like to reduce the size of this
rollback segment? (y/n)
```

The original size of the rollback segment was set to 653312 bytes. If the current size is close to this number or if it is less than 1/4 of your total database size, you do not need to reduce the size of the rollback segment.

3. To terminate the **rb_init** command without reducing the size of the rollback segment, type **n** at the prompt. To execute the **rb_init** command and reduce the size of the rollback segment, type **y** at the prompt.

-
4. If you typed **y** to the prompt and the voice system is currently running, you will receive the following message:

```
The voice system is running. Is it OK to stop the
voice system? (y/n)
```

Type **y** to shut down the voice system and continue with the procedure to reduce the size of the rollback segment. Type **n** to abort the `rb_init` procedure.

5. The following message will appear on the screen if the database system is running:

```
The database system is running. Is it OK to shut-
down the database? (y/n)
```

Type **y** to shut down the database and continue with the procedure to reduce the size of the rollback segment. Type **n** to abort the `rb_init` procedure.

6. Some SQL*PLUS commands and operations output will appear on the screen. When the `rb_init` command is finished, you will be prompted with the following message:

```
Would you like to restart the voice system? (y/n)
```

Type **y** at the prompt to restart the voice system and the database. If you do not wish to restart the voice system and the database at this point, you may do so manually at a later time.

Transmission Level Plan

A Transmission Level Plan (TLP) for a piece of telecommunications equipment is a set of specifications dictating the incoming/outgoing speech volume levels which will pass through the equipment as well as hardware and software tools for implementing those specifications. The specifications take into account the level plans of the various telephone network interfaces to which the equipment will connect. The goal of the plan is to make all speech heard by a caller be at a level which is appropriate for listening without causing oscillations in the network.

VIS Transmission Level Plan

As depicted in Figure D-1 most switch designs implement a TLP which “builds in” a -3dB gain (often called insertion loss) in each Tip/Ring loop of a station set-to-station set connection, for a total of -6dB gain from end to end. The VIS default TLP implements this same strategy; that is, the VIS default TLP will attempt to make the end-to-end gain of voice signals passing through it equal to -6dB.

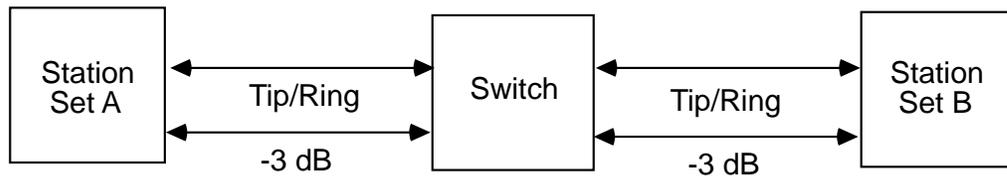


Figure D-1. Typical Switch Transmission Level Plan for Station Set-to-Station Set Connection

CONVERSANT VIS Network Interface Hardware

The VIS connects to two types of telephone network facilities: Analog (Tip/Ring) and Digital (T1).

The VIS default TLP is partially based on the following 2 facts concerning VIS network interface hardware:

1. VIS T1 Interface cards have 0dB gain built into the hardware interface.
2. VIS Tip/Ring Interface cards have nominally 0dB gain built into the hardware interface (when a perfect impedance match exists between the interface and the line to which it is connected).

Typical Network TLP Characteristics

The two types of network facilities (Tip/Ring and T1) have typical TLP characteristics associated with them. The VIS default TLP is partially based on the following typical network TLP characteristics:

1. The VIS default TLP assumes a nominal 0dB gain in each digital trunk connected to any T1 card in the system.
2. The VIS default TLP assumes a nominal -3dB gain in each analog loop connected to any Tip/Ring card in the system.

Incoming and Outgoing Speech Volume Non-Bridging Modes

When a voice signal enters a VIS machine in a non-bridged connection, it is usually going to be coded and stored in the speech file system of the VIS machine. Before it is coded, its incoming volume can be adjusted by a parameter called IVOL.

When a voice signal stored in the speech file system is played back from a VIS machine to a caller, its outgoing volume can be adjusted by a parameter called OVOL.

The CONVERSANT VIS VERSION 4.0 screen "Digital Interfaces" option allows the user to adjust both the incoming speech volume and outgoing speech volume for analog (Tip/Ring) and digital (T1) network interfaces. Therefore, there are actually two system-wide IVOL parameters (Analog IVOL and Digital IVOL), and two system-wide OVOL parameters (Analog OVOL and Digital OVOL). The analog IVOL and OVOL parameters apply to all Tip/Ring cards (IVP-6) in the system, while the digital IVOL and OVOL parameters apply to ALL T1 cards in the system.

⇒ NOTE:

Even though each T1 card in the system allows specification of IVOL and OVOL, changing IVOL or OVOL for any one of the T1 cards in the system changes the digital IVOL and OVOL parameters for all other T1 cards in the system.

IVOL and OVOL should be thought of as volume multipliers (i.e., +/- gain) of the incoming/outgoing signal. A value of 1000 for IVOL or OVOL is equivalent to multiplying the incoming or outgoing signal volume by 1, i.e., unity gain. Each multiplication of the current IVOL or OVOL setting by a factor of .707 results in a -3dB signal volume gain from the current volume (volume 3dB lower); each multiplication of the current IVOL or OVOL setting by a factor of 1.414 results in a +3dB signal volume gain from the current volume (volume 3 dB higher).

⇒ NOTE:

IVOL and OVOL affect only signals being coded or played back by the VIS. They do not affect end-to-end conversations in call bridge mode.

Table D-1 shows the IVOL and OVOL settings required to implement the VIS default TLP along with the actual gain in dB (shown in parenthesis) which each setting represents:

Table D-1. Default System IVOL and OVOL Settings

	IVOL	OVOL
Analog	2000(+6)	1000(0)
Digital	1414(+3)	707(-3)

Voice Coding and Playback

As described above, most switches build in -6dB of gain in a typical station set-to-station set connection. With a VIS in a non-bridging mode, station set-to-station set actually involves a signal being affected by IVOL while it is coded and stored on the disk, then affected by OVOL when it is played back. To be in accordance with the VIS TLP, the level heard by the caller during playback should be 6dB lower than the level that was spoken when the signal was coded.

Voice Coding

Figure D-2 shows how the default IVOL parameters control the level at which a voice signal is coded and stored in the VIS speech file system.

The top part of the figure shows a T1 interface connected to the VIS; the bottom part shows a Tip/Ring interface connected to the VIS. Following the signal from left to right, if the initial spoken level is 0 and all typical network TLP characteristics listed above are true, the coded level that will be stored in the speech file system will always be 0, regardless of which type of network interface is connected to the VIS.

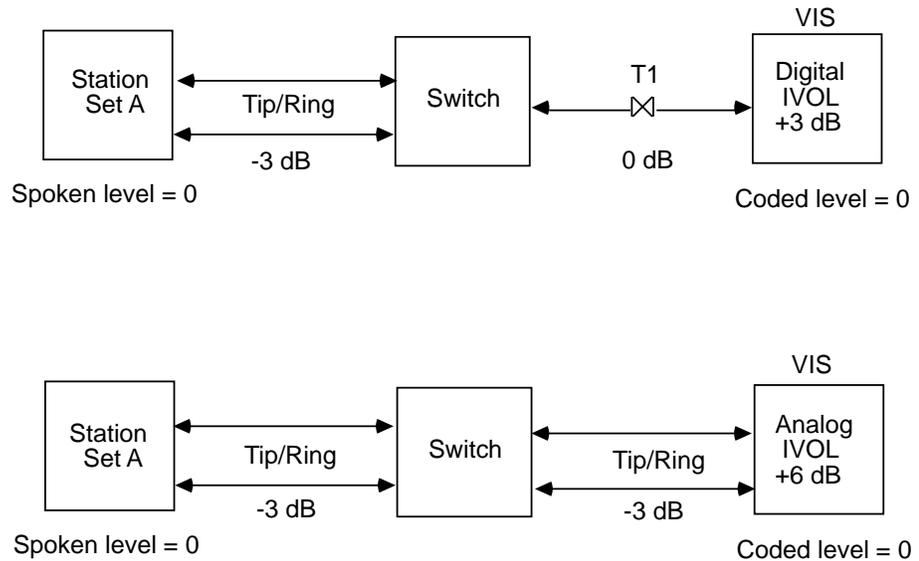


Figure D-2. Effect of IVOL Parameters Voice Coding

Voice Playback

Figure D-3 shows how the default OVOL parameters control the level at which a previously coded voice signal stored in the VIS speech file system is played back.

The top part of Figure D-3 shows a T1 interface connected to the VIS; the bottom part shows a Tip/Ring interface connected to the VIS. Following the signal from right to left, if the signal was coded in the manner depicted in Figure D-2 the initial playback level will be 0. If all typical network TLP characteristics listed above are true, the level which will be heard at the station set will always be -6, regardless of which type of network interface is connected to the VIS. Since the initial spoken level shown in Figure D-2 was 0, the heard level of -6 is in accordance with the VIS TLP.

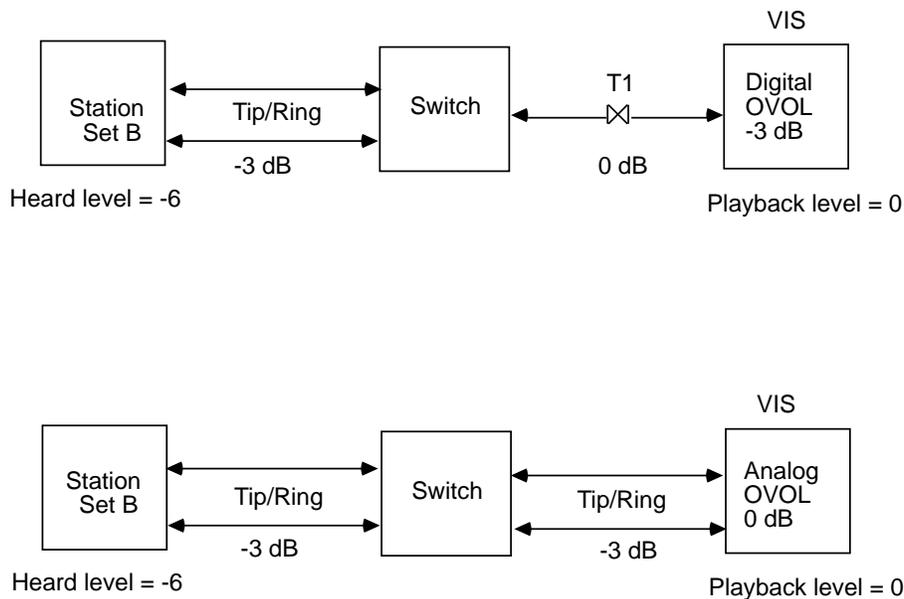


Figure D-3. Effect OVOL Parameters Voice Playback

Reasons for Deviating from the Default IVOL and OVOL Settings

For most applications, the default TLP will provide callers with appropriate speech volume levels for prompts that were coded as depicted in Figure D-2 on page D-11.

In many cases, however, speech prompts are coded in a studio and may be coded at higher volumes than they would have been if they had been coded from a VIS network interface. In these situations, it may be desirable to decrease the applicable OVOL parameter (analog or digital, depending on whether playback is from Tip/Ring or T1) to decrease the volume actually heard by the caller. Note that if the system is used to code speech which will be played back with the prerecorded speech, you should increase IVOL by the same amount that you decrease OVOL to insure that speech is coded at the same level.

Also, some network lines/trunks do not abide by the typical network characteristics listed above. For example, some T1 trunks actually have insertion loss in the network. This loss can be compensated for by increasing the corresponding IVOL and OVOL parameters by an amount equal to the additional insertion loss. For example, if the digital trunks connected to a VIS actually had insertion loss of -3dB instead of 0 associated with them as the default VIS TLP assumes, the default digital IVOL and OVOL parameters could be changed to 2000 and 1000 respectively which would have the effect of adding +3dB of gain to the incoming signal before coding, and adding +3dB of gain to the outgoing signal before playback (refer to Table D-1 on page D-10) and accompanying explanation). Making these changes results in meeting the TLP goal of -6dB gain from end to end.

Finally, subjectivity plays a large role in the effectiveness of a TLP. What sounds appropriate to one person may sound inappropriate to another. The default IVOL and OVOL parameters have been carefully selected to provide appropriate volume levels in the majority of applications. It is highly recommended that they not be changed based on subjective evaluation. However, the flexibility is provided to tune them to whatever suits the needs of the application at hand.

Transmission Level Plan and Call Bridging

When two incoming calls are bridged together by the VIS, the callers on either end (station set A and station set B) can talk with each other through the VIS. In such a situation, the previously discussed IVOL and OVOL parameters do not apply. Instead, software on the VIS machine (specifically the TSM process) has built in rules for directing the VIS Network Interface cards to insert up to +6dB gain in either direction of a call bridge connection.

The rules governing the amount of gain inserted are depicted by Figures D-4 through D-7. Recall that the VIS TLP dictates that there be a -6dB gain from station set to station set. Assuming the typical network TLP characteristics for the network facilities (as discussed in the previous section), Figures D-4 through D-7 show the amount of gain (in dB) that is automatically inserted in each direction for each of the four possible call bridging scenarios.

Figure D-4 illustrates analog-to-analog (Tip/Ring to Tip/Ring) call bridging.

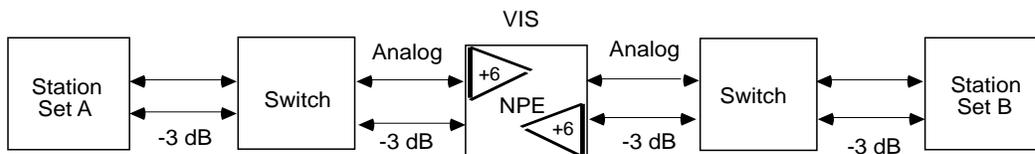


Figure D-4. Analog-to-Analog Call Bridging

Figure D-5 illustrates digital-to-digital (T1 to T1) call bridging.

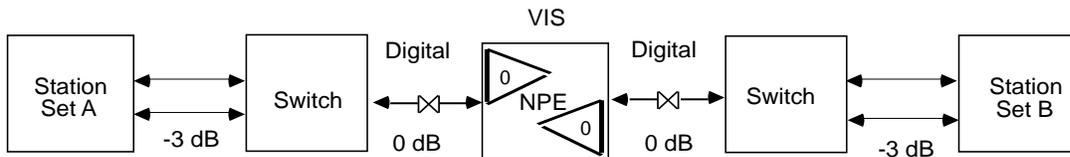


Figure D-5. Digital-to-Digital Call Bridging

Figure D-6 illustrates analog-to-digital (Tip/Ring to T1) call bridging.

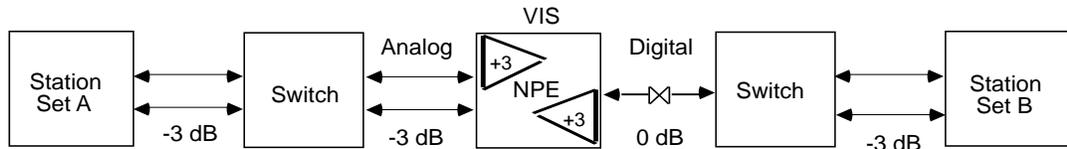


Figure D-6. Analog-to-Digital Call Bridging

Figure D-7 illustrates digital-to-analog (T1 to Tip/Ring) call bridging.

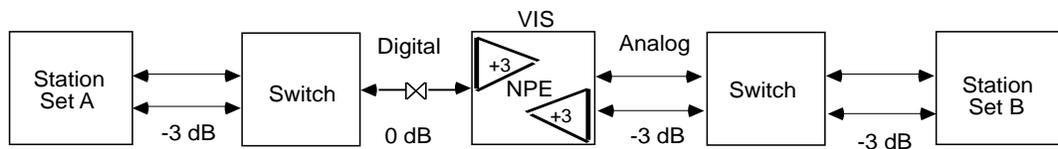


Figure D-7. Digital-to-Analog Call Bridging

Signal Processor Circuit Card Troubleshooting Guidelines

The standard 12 Mbyte version of the SP Driver will be installed by default during Signal Processor (SP) circuit card installation. To determine which version of the SP Driver is installed on your system, type the following at the system prompt:

spVrsion

Refer to *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, Appendix D, "Circuit Card Settings," for information on SP circuit card switch settings.

IBM Host Troubleshooting Guidelines

Information concerning the host interface is provided in the *CONVERSANT VIS Host Interface*, 585-350-815. This book provides information to help you to install, administer, and troubleshoot the interface between the VIS and the 3270 environment.

Automatic Reboot

When the automatic reboot feature is enabled and activated, the system automatically reboots after a UNIX panic. By default, the automatic reboot feature is turned on (enabled).

The **autoreboot** command enables and disables the autoreboot feature and changes the window, reboots, and uptime parameters. Following is an example of the **autoreboot** command:

autoreboot disable

or

autoreboot window 120 uptime 10

For more information on the **autoreboot** command and the command line syntax, refer to the *CONVERSANT VIS Version 4.0 Command Reference*, 585-350-209.

NOTE:

The **autoreboot** command is executed from the `/vs/bin` directory and requires system administration privileges.

The automatic reboot feature includes the following parameters:

The *enable/disable* parameter enables or disables the automatic reboot feature. The default values for this parameter is enable.

The *reboots <number>* parameter specifies the number of unanticipated reboots “allowed” within the time period specified by the window parameter. The default value for this parameter is 5.

The *window <minutes>* parameter specifies the time period for the *reboots <number>* parameter. The default value for this parameter is 60 minutes.

The *uptime <minutes>* parameter specifies the minimum time that the system must be at run level 2, 3, or 4 before the automatic reboot feature is activated. The default value for this parameter is 5 minutes.

The *status* parameter display the current values of the automatic reboot parameters as well as the number of unanticipated reboot occurring in the minutes preceding the most recent system boot (specified by the window parameter).

If there were fewer than reboots unanticipated reboots during the window minutes prior to the most recent system boot, the automatic reboot feature is activated uptime minutes after the most recent system boot.

Following is an example:

Assume the parameters associated with the autoreboot feature are set with default values; that is, the autoreboot feature is enabled, the reboot <number> parameters is set to 5, the window<minutes> parameter is set to 60 minutes, and uptime <minutes> parameter is set to 5 minutes. A system crash occurs (prompted by either a UNIX panic, a system restart via the reset button, or a sudden power loss). The system reboots at 8:00 a.m. If there were fewer than 5 unanticipated reboots between 7:00 a.m. and 8:00 a.m., the automatic reboot feature is activated at 8:05 a.m. Otherwise, it is activated at 9:00 a.m.

Automatic Reboot Suggestions

In determining reasonable values for the automatic reboot parameters, the main concern is time required for the system to reboot after a system crash (such as UNIX panic or a power failure). A number of factors affect the recovery time.

These include:

- Hardware platform
- Disk storage space
- Applications running on the system; that is, the number, types, and configurations of applications

The following procedure may be used to determine exact values for the *uptime* and *reboots* parameters:

1. Stop the voice system using **stop_vs** or the **Stopping the Voice System** procedure in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112.
2. Type **sync** to confirm that file changes are saved on the disk.
3. Type **date** to find out the current time and record the time displayed by the system.
4. Press (RESET).
5. After the voice system is started, log in and type **who -b** to show the time of the most recent system boot.
6. Type **sysmon** and observe the System Monitor screen.
7. As soon as all voice channels are INSERV, press (CANCEL).
8. Type **date** to find out the current time and record the time displayed by the system.
9. Type **disp message id ICK004 1**. Record the time of the message that is displayed.
10. Subtract the time from Step 9 from the time in Step 8.
11. Set the *uptime* parameter to the number derived in Step 10, using the **autoreboot** command.
12. Subtract the time in Step 3 from the time in Step 9. Add the *uptime* to this value this value. The result is the approximate time for your system to recover from a system crash.
13. Divide the window parameter by the number derived in Step 12.
14. Set the reboot parameter to the number derived in Step 13 using the **autoreboot** command.

Below is an example of the procedure described above:

Assume the system is reset at 15:25:01 and all channels are in service (INSERV) by 15:36:55. The **disp messages** command shows ICK004 was reported at 15:31:23. Subtracting 15:31:23 from 15:36:55 gives 5:32 and this rounded the nearest whole number yields 6. Set the *uptime* parameter to 6 using **autoreboot uptime 6**. Subtracting 15:25:01 from 15:31:23 gives 6:22. Add this to the 6 used for the *uptime* parameter yields 12:22, or 13. Dividing 60 (the default for the *window* parameters) by 13 gives 4.6 and this rounded down yields 4. Set the *reboots* parameter to 4 by enter **autoreboot reboots 4**.

Performance Information

E

Performance Information Overview

This appendix describes the CONVERSANT Voice Information System (VIS) with regards to performance. Understanding the concepts in this chapter will aid in identifying and resolving performance-related problems in applications. You should use this chapter in conjunction with the repair procedure "Reducing the Load" in Chapter 4, "Common Maintenance Procedures," of *CONVERSANT VIS Version 4.0 Maintenance*, 585-350-112, to help pinpoint the root cause of a particular performance problem.

Performance Considerations

The performance of a VIS 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 VIS.

System Architecture

The following sections provide performance information in relation to the VIS system architecture.

Voice Processing Architecture

With respect to performance, the most important aspect of the VIS 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 48 channels 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) to 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 channels, 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 through the `nbufs` parameter in the `/vs/data/spchconfig` file. It is set to 180 by default. Minimally, it should be set to 2.5 times the number of channels in the system.

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.

UNIX is a time-shared operating system as it tries to satisfy all tasks of the applications running on it on request. The UNIX system is not concerned of what gets done when from the VIS perspective. The UNIX 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 CPU is capable of satisfying 48 simultaneous requests for data at a rate of 32 kbit/s (or 200 kbytes/s) total system throughput. Additional testing shows that the CPU is capable of loads of 300 kbytes/s. 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 and Buffer Cache

The effect of paging on a system can be worse than the effect of not finding a phrase in memory. If pages of speech buffer cache have been paged out and VROP finds it needs a phrase from the buffer cache that has been paged, VROP generates a page fault and waits for the required speech to be brought in from the swap device. Meanwhile, many serviceable requests may go unserved since VROP is blocked, thus, impeding speech processing. If, however, the phrase is not in the speech buffer cache, VROP requests the phrase from DIO and it still able to service other requests.

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.

Voice Play

Voice play (or 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

Phrase length affects play performance in two ways. The concatenation of several short phrases requires the VIS 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 VIS 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.

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.

Speech Coding Rate

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). They also reduce storage space. The drawback of SBC-type algorithm occurs in DSP requirements. To avoid DSP overload, do not exceed any of the voice coding capacities as provided in Chapter 6, "CONVERSANT VIS Requirements and Specifications," of *CONVERSANT VIS System Description*, 585-350-207. DSP resources are adequate with IVP cards to handle any coding type but when using SP cards for voice, capacities are reduced.

Voice Play Usage Summary

The following information summarizes the voice play 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	Same as CPU.

Memory Same as CPU. Also, 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 lot 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. Phrases Ids are hashed (uniformly distributed) into a table and the appropriate address for the phrase is found. This technique provides for very fast identification of where phrases are on the disk. The drawback is that addresses of every phrase on the disk(s) must be stored in shared memory (in core or on the swap device). The hash table is sized at system startup, its size is proportional to max_phrases. Since hash algorithms attempt to uniformly distribute indexes across the table, it is possible that system with only a small speech pool will require the entire hash table to reside in core, this can be wasteful. When max_phrases is set to 32,000, 234 pages of shared memory are reserved for this table.

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 that 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 48 channels continuously and simultaneously using the ADPCM32 coding algorithm will easily fill a 600 MB disk 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 48 channels) 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***.

NOTE:

Systems with 486 CPUs will tend to be less likely to experience problems related to event processing.

Events Usage Summary

The following information summarizes the events feature usage on the system.

CPU	CPU usage will increase at the rate of about 1% CPU utilization per event per second for 386 CPUs, and about 0.5% for 486 CPUs.
Disk	Disk throughput, assuming basic voice system play and touch tone type activity, will be saturated at about 8 events per second on an ESDI system. SCSI systems can handle twice that rate or more.
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 48 channels) 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 0.4% per touch tone per second for 386 CPUs and 0.2% for 486 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 that change in size as the database never reclaims the space for a table after it has grown and shrunk. This is true for VIS 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 perform 30 simple updates than 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. Note that the 486 processor performs 3 to 4 time faster than the 386 processor.
Disk	Same as CPU, note that SCSI systems performed at least twice as well as ESDI systems.
Memory	Additional 200 pages 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 CONVERSANT VIS. Due to the enormity of features available with the VIS, 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 channel 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. For this reason, in conjunction with the assumption given above, only a memory requirement for each feature is given. This memory requirement should be subtracted from the free memory of an application. If the free memory value drops below 100 pages, serious consideration should be given to reducing the memory requirements of the application.

Features Using SP 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) cards to perform the computations required to provide the feature functionality. The SP cards contain a microprocessor similar in power to the processor of the main voice system plus some DSP chips that are used to perform the signal processing portion of their operations. The voice system software understands the limits of the SP cards for operations they perform, and SP cards are guaranteed to perform with no performance related problems up to those limits.

Thus, the SP 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 channels 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. Refer to the *CONVERSANT VIS Version 4.0 Planning*, 585-350-602, for information on channel capacity for optional features. For additional information about performance issues on features using SP cards refer to "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 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 that 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 VIS. 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 (4800 baud), will have difficulty supporting 30 channels of host access. The host uses CPU resources primarily. There is little or no load placed on the link with the host.
 - AUDIX Voice Power is not any worse than standard voice code and play applications with the possible exception of a larger speech pool and longer code times. However, the AUDIX Voice Power application is limited to 12 channels.
 - 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 VIS, less disk utilization since database access will be performed on a remote system, and less CPU usage. Use of a VIS 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 that 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 VIS will be reduced by as much as half since, in aggregate, the VIS 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. The VIS has been tuned to make as efficient use as possible of its memory resources. All critical VIS processes must be in memory when voice processing is occurring and it is also desirable to have as much speech as possible in main memory.

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 UNIX 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.

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. If utilities are written for administration and other activities, they should be run during off hours. Shell scripts are very dangerous since they typically will fork and exec many processes. As processes are formed in UNIX, 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 that 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 UNIX commands.

Known Poor Performers

The following types of applications have been identified as poor performers either through testing or in the field. The VIS can support these applications but only at reduced channel counts or with carefully-tuned applications. Where appropriate, a recommended channel capacity is given for the application type. Customer 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 486 processor 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 30 channels.

- 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" on page E-7 in this chapter.

- Systems used simultaneously for both application development and call processing

Customers should be strongly encouraged to purchase low end development systems to support script development (or to hang onto their old systems). If customers insist on doing script development on production systems then they should be warned up front about the performance impact. 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 customers expect high traffic volumes overnight, the call data summary cron jobs should be moved 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.

General Conclusions About Performance

There are two general conclusions that are important to understanding performance on the CONVERSANT VIS:

- Performance limitations are probabilistic numbers.
- The CONVERSANT VIS is a general purpose computing device.

The limitations advertised for the VIS 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 VIS as a general purpose computing device lends the VIS to all the same performance issues of any other general purpose computing device. Since the VIS is programmable, there is nothing that prevents customers 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.

Abbreviations

A

ACD	Automatic Call Distributor
ADPCM	Adaptive Differential Pulse Code Modulation
ANI	Automatic All Identification
ARU	Alarm Relay Unit
ASAI	Adjunct/Switch Application Interface
ASCII	American Standard Code for Information Interchange

B

BB	Bulletin Board
bps	Bits per second
BSC	Binary Synchronous Communication

C

CCA	Call Classification Analysis
CDH	Call Data Handler
CIC	AT&T Customer Information Center
CICS	Customer Information Control System
CMP	Companion card
CMS	Call Management System
CO	Central office
CPE	Customer provided equipment or customer premise equipment
CPU	Central processing unit
CSU	Channel service unit

D

dB	Decibels
DBMS	Database Management System
DC	Direct current
DCE	Data Communications Equipment
DCP	Digital Communications Protocol
DIO	Disk Input and Output Process
DIP	Data interface process
DNIS	Dialed Number Identification Service
DSP	Digital Signal Processor
DTE	Data Terminal Equipment
DTMF	Dual Tone Multi-Frequency

E

EBCDIC	Extended binary Coded Decimal Interexchange Code
EIA	Electronic Industries Association
EISA	Extended Industry Standard Architecture
ESDI	Extended Serial Data Interface
ESS	Electronic Switching System

F

FACE	Framed Access Command Environment Interface
FDD	Floppy disk drive
FEP	Front end processor
foos	Facility out-of-service state

H

HDD	Hard disk drive
hwoos	Hardware out-of-service state
Hz	Hertz

I

IBM	International Business Machines
ID	Identification
IE	Information Element
inserv	In-service state
IPC	Inter-Process Communication
IPCI	Integrated personal computer interface
ISDN	Integrated Services Digital Network
ITAC	International Technical Assistance Center
IVP4	Integrated Voice Processing card with 4 analog channels
IVP6	Integrated Voice Processing card with 6 analog channels

K

Kbps	Kilobite per second
Kbyte	Kilobyte

L

LAN	Local Area Network
LED	Light-emitting diode
LU	Logical unit

M

manoos	Manually out-of-service state
MAP/100	Multi-Application Platform 100
MAP/100C	Multi-Application Platform 100C
MAP/40	Multi-Application Platform 40
Mbyte	Megabyte
ms	Millisecond
msec	Millisecond
MHz	Megahertz
MTC	Maintenance process

N

NCP	Network Control Program
netoos	Network out-of-service state
nonex	Non-existent state
NRZ	Non Return to Zero
NRZI	Non Return to Zero Inverted

P

PBX	Private Branch Exchange
PC	Personal computer
PCB	Printed circuit board
PCM	Pulse Code Modulation
PEC	Price element code
PRI	Primary Rate Interface

R

RAM	Random Access Memory
RDBMS	ORACLE relational database management system
RMB	Remote maintenance circuit card

S

SBC	Sub-band coding
SCCS	Switching Control Center System
SCSI	Small Computer System Interface
SDLC	Synchronous Data Link Control
SIMM	Single Inline Memory Module
SNA	Systems Network Architecture
SP	Signal Processor card
SPIP	Signal Processor Interface Process
SPPLIB	Speech Processing Library
SQL	Structured Query Language
sysgen	System generation

T

TCC	Technology Control Center
TCP/IP	Transmission Control Protocol/Internet Protocol
TDM	Time Division Multiplexing
TE	Terminal emulator
TLP	Transmission level plan
T/R	Tip/Ring card
TRIP	Tip/Ring Interface Process
TSC	AT&T Technical Services Center
TSO	Time Share Operation
TSM	Transaction State Machine

TTS	Text-to-Speech
TWIP	T1 Interface Process

U

UK	United Kingdom
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V

VIS	CONVERSANT Voice Information System
VPC	Voice processing co-marketer
VRU	Voice response unit
VROP	Voice Response Output Process

Glossary

Numerics

3270 interface

A link between one or more VIS machines and a host mainframe. In CONVERSANT Voice Information System (VIS) documentation, the 3270 interface means the link between one or more VIS machines and an IBM host mainframe.

4ESS

A large, AT&T central office switch used to route calls through AT&T's telephone network.

A

ACD

See "Automatic Call Distributor."

ADPCM

See "Adaptive Differential Pulse Code Modulation."

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, Adjunct/Switch Application Interface) that the CONVERSANT Voice Information System (VIS) administers via cut-through access to the inherent management capabilities of the product itself; this is in opposition to CONVERSANT VIS's ability to administer the switch directly.

Adjunct/Switch Application Interface

An optional feature package that provides an Integrated Services Digital Network-based interface between AT&T PBX's and adjunct processors.

affiliate

A business organization that AT&T controls or which with AT&T is in partnership.

Alarm Relay Unit

A unit used in central office telecommunication arrangements that transmits warning indicators from telephone communications equipment (like the CONVERSANT VIS) to audio

alerter

A system process which responds to patterns of events logged by the "logdaemon" process.

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.

application

Made of several components which provides an automated version of the communication between a caller and an attendant.

application administration

The component of the VIS 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 VIS invokes the TSM script assembler for the specific application name and files are moved to the appropriate directories.

application verification

A process in which the VIS verifies that all the components needed by an application are complete.

ASCII

An acronym for American Standard Code for Information Interchange, a standard for data representation. ASCII code represents alphanumeric characters as binary numbers. The code includes 128 upper- and lower-case letters, numerals, and special characters. Each alphanumeric and special character has an ASCII code (binary) equivalent that is one byte long.

asynchronous communication

A method of data transmission in which bits or characters are sent at irregular intervals and bits or characters are spaced by start and stop bits and not by time. See also "synchronous communication."

asynchronous data unit

An electronic communications device that allows computer systems to communicate over asynchronous lines more than 50 feet in length.

AUDIX Voice Power

A complete voice-mail messaging system accessed and operated by touch-tone telephones and integrated with a switch or "Private Branch Exchange."

Automatic Call Distributor

A phone system that recognizes and answers incoming calls and completes these calls based on a set of instructions contained in a database. The Automatic Call Distributor 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.

B

back up

To preserve a copy of the information in a file in a different location, so that the data will not be lost in the event of hardware or system failure.

backing up an application

A utility that makes an archive copy of a completed application or makes an interim copy of an application in progress. The backup copy can be restored to the VIS if the online version is damaged, or if you make revisions and wish to go back to the previous version.

barge-in

A capability provided by WholeWord Speech Recognition that allows a caller to speak their response to the VIS prompt and have that response recognized before the prompt has finished playing.

batch file

A file containing one or more lines, each of which is a command executable by the UNIX shell.

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 phone is busy, or if the caller answered.

BSC

See "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 eight bits (binary digits), the equivalent of one character of text.

C

Call Classification Analysis

An optional feature package that allows application developers to classify the disposition of originated and transferred calls.

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 someone making a telephone call. It can be used by telephone switching equipment to selectively route an incoming call to a particular department or agent.

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 CONVERSANT VIS 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.

caution

An admonishment used when there is a possibility of a service interruption.

CCA

See "Call Classification Analysis."

CDH

See "Call Data Handler process."

central office

An office or location in which large telecommunication machines such as telephone switches and network access facilities are maintained. These locations follow strict installation and operation requirements.

Central Processing Unit

A component of the VIS that is based on either the Multi-Application Platform 100 (MAP/100), the Multi-Application Platform 40 (MAP/40), or the Multi-Application Platform 100C (MAP/100C).

CICS

See "Customer Information Control System."

cluster controller

A bisynchronous interface that provides a means of handling remote communication processing.

command

An instruction or request given by the user to the VIS software to perform a particular function. An entire command consists of the command name and options.

CompuLert/SCCS Interface

An optional feature that enables remote or console monitoring of error messages generated from the CONVERSANT VIS. CompuLert is a centralized maintenance system for monitoring minicomputers, computer mainframes, etc. The Switching Control Center System (SCCS) is similar to the CompuLert system but is used to support 4ESS local switching systems.

configuration

The arrangement of the software and hardware of a computer system or network. The CONVERSANT Voice Information System configuration includes either a standard or custom processor, peripheral equipment (for example, printers, 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 VIS 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 SP and T1 cards, and perform various maintenance functions.

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 the VIS environment. It supports the DEFINITY “converse” vector command to establish a two-way routing mechanism between the switch and the VIS 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 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.

co-residency

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 co-residency of AUDIX Voice Power on a CONVERSANT VIS platform.

CPU

See “Central Processing Unit.”

crash

An interactive utility for examining the operating system core and for determining if system parameters are being exceeded.

custom speech

Unique words or phrases to be used in CONVERSANT VIS voice prompts that are recorded for a customer on a custom basis.

custom vocabulary

A specialized package of unique words or phrased crated on a pre-customer basis and used by WholeWord or FlexWord Speech Recognition purposes.

Customer Information Control System

Considered 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.

D

danger

An admonishment used when there is a possibility of personal injury.

data interface process

A software process that communicates with Script Builder applications.

database

A structured set of files, records, or tables.

database fields

Used to extract values from a local database and form the structure upon which a database is built.

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 change too often to "hard-code," or permanently store, in the transaction outline.

debug

The process of locating and correcting errors in computer programs. This process is also referred to as troubleshooting.

default

The way a computer will perform a task in the absence of other instructions.

diagnose

The procedure used to perform diagnostics on Tip/Ring, T1, or SP cards or a bus.

Dialed Number Identification Service

A service that allows incoming calls to contain information about the phone number for which it is destined.

directory

A type of file used to group and organize other files or directories.

DNIS

See "Dialed Number Identification Service."

DIP

See "data interface process."

display errdata

A command that displays system errors sent to the logger.

DSO

Digital Service Level 0 (64,000 bps).

DTMF

See "Dual Tone Multi-Frequency."

Dual 3270 Links

A feature that provides an additional physical unit (PU) to allow a cost-effective means of connecting to two host computers. The customer can connect a VIS 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.

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 upon system crashes. The dump can be fetched after rebooting for analysis of what may have caused the crash.

E

Earth recall

A method of call transfer used by some PBXs outside of the U.S. Special considerations must be taken when identifying and tuning some communication protocol parameters before attempting to interface another machine to a system that uses this method of call transfer.

Enhanced Serial Data Interface

A software- and hardware-controlled method used to store data on magnetic peripherals.

error message

A message on the screen indicating that something is wrong and possibly suggesting how to correct it.

Error Tracker Process

See “etStub.”

Ethernet

Another name for a local area network that uses 10BASE5 or 10BASE2 coaxial cable and InterLan signaling techniques.

etStub

A system process which processes pre-Version 3.1 error message logging requests. These requests are transformed and passed on to the “logdaemon” process.

external actions

Specific tasks and interfaces controlled by CONVERSANT VIS software that allow a Script Builder application script to invoke processes and interact with other products or services. For example, a CONVERSANT VIS application script can invoke AUDIX Voice Power functionality through the used of an external action within an application script.

F

FACE

See "Framed Access Command Environment."

feature

A function or capability of a product or an application within the CONVERSANT VIS.

feature package

An optionally purchased package that may contain both hardware and software resources, which provides additional functionality to a standard system.

featurest

A standard CONVERSANT VIS software program that allows a VIS user to perform self-tests of critical hardware and software functionality.

field

A "slot" in a VIS window that holds one column of information in a row.

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. File transfer is performed either interactively or directly using the File Transfer System.

filename

Alphabetic characters used to identify a particular file.

Form Filler Plus

An optional feature package that provides the capability for application scripts to record caller's responses to prompts for later transcription and review.

Framed Access Command Environment

An interface that enables you to execute a variety of administrative procedures including, disk operations, user login setup, and peripherals setup.

function key

A key, labeled F1 through F8, on your keyboard to which the CONVERSANT VIS software gives special properties for manipulating the user interface.

G

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 to be used by VIS applications.

H

hard disk drive

A high-capacity data storage/retrieval device that is located inside a computer platform. A hard disk drive stores data on non-removable high-density magnetic media based on a predetermined format for retrieval by the system at a later date.

hardware

The physical components of a computer system. The central processing unit, disks, tape and floppy drives, etc., are all hardware.

host computer

A computer linked to a network providing 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.

I

iCk

The system integrity checking process.

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.

indexed table

A table that, unlike a non-indexed table, may be searched via a field name that has been indexed.

initialize

To start up the system for the first time.

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 card

The IVP4 or IVP6 card.

intelligent transfer protocol

A transfer protocol that monitors 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.

interface

The access point of a system. With respect to the VIS, the interface is designed to provide you with easy access to the software's capabilities.

ipcs

A command that reports interprocess communication facilities status.

ISDN

See "Integrated Services Digital Network."

K

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 VIS to recognize a single word in the middle of an entire phrase spoken by a caller in response to a prompt.

L

LAN

See "local area network."

Line Side T1

A digital method of interfacing a CONVERSANT VIS 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 local area network provides communications between computers and peripherals.

local database

A database residing on the VIS.

logical unit

A type of SNA Network Addressable Unit.

logdaemon

System information and error logging process.

logger

See "logdaemon"

logging on/off

Entering or exiting the CONVERSANT Voice Information System software.

LU

See "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 CONVERSANT VIS VERSION 4.0 screen, from which you are able to enter FACE or Voice System Administration.

maintenance process

A software process that runs temporary diagnostics.

Manual Configurator Program

A software program that resolves or blocks the allocation of CPU and memory resources for controlling and optional circuit cards.

master

A board that provides clock information to the TDM bus.

megabyte

A unit of memory equal to 1,048,576 bytes (1024 x 1024). It is often rounded to one million.

Microsoft

A company that manufactures 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-DOS

A personal computer DOS operating system developed by the Microsoft Corporation.

MTC

See "maintenance process."

N

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.

non-indexed table

A table that may be searched only in a sequential manner and that may not be searched via a field name.

note

An admonishment used to supply supplementary information for the topic being discussed.

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.

on-line help

Messages or information that appear on the user's screen when a "function key" (F1 through F8) is pressed.

O

Operator Generated Alerts

System monitoring messages transmitted from the CONVERSANT VIS or other computer system to an IBM host computer that are 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 will execute 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

PBX

See "Private Branch Exchange."

PCM

See "Pulse Code Modulation."

peripheral (device)

Equipment such as printers or terminals that is in addition to the basic processor.

phoneme

A single basic sound of particular spoken language. The English language contains 40 phonemes that represent all basic sounds used with the language. As an example, the 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 tag

A string of up to 50 characters that identify the contents of a speech phrase used by an application script.

poll

A message sent from a central controller to an individual station on a multi-point network inviting that station to send if it has any traffic to send.

polling

A network arrangement whereby a central computer asks each remote location whether they wish to send information. This arrangement enables each user or remote data terminal an opportunity to transmit and receive information on shared facilities.

Primary Rate Interface

An optional feature package that provides a digital interface capable both of receiving and originating telephone calls directly from/to an AT&T 4ESS switch.

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 CONVERSANT Voice Information System documentation, the computer on which the UNIX Operating System and CONVERSANT Voice Information System software runs. In general, the part of the computer system that processes the data. Also known as the "central processing Unit."

ps

A command that shows active processes. This command displays the process table and can be used to determine which processes are consuming large amounts of system resources, such as CPU time.

Pulse Code Modulation

A digital modulation method of encoding voice signals into digital signals. See also "Adaptive Differential Pulse Code Modulation."

R

raw mode

Conveys data from a terminal to a user without processing the data.

recovery

The process of using copies of the VIS software to reconstruct files that have been lost or damaged. See also "restore."

remote database

The component of the VIS that provides access to information not currently on the VIS.

remote maintenance circuit card

A CONVERSANT VIS circuit card that is equipped standard with all new Version 4.0 purchases. This card, available with or without a built-in modem, allows remote personnel (for example, field support) to access all CONVERSANT VIS machines with a standard simplified process.

reports administration

The component of the VIS that provides access to system reports, including VIS call classification reports, call data detail reports, call data summary reports, message log reports, and traffic reports. In addition, if AUDIX Voice Power R2.1.1 is installed on your system, the reports administration component gives you access to AUDIX Voice Power reports.

restore

The process of recovering lost or damaged files by retrieving them from available backup 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.

roll back

To cancel changes to a database since the point at which changes were last committed.

rollback segment

A portion of the database which records actions which should be undone under certain circumstances. rollback segments are used to provide transaction rollback, read consistency, and recovery.

root space

An area of the disk that houses the UNIX Operating System, all VIS executables and data files, Script Builder application files, and the database.

S

sar

A command that is associated with the system activity report package.

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 Builder

An optional software package that provides a menu-oriented interface designed to assist in the development of custom voice response applications on the VIS.

SCSI

See "Small Computer System Interface."

shared database table

Using the same database table 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.

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.

slave

A board that depends on the TDM bus for clock information.

Small Computer System Interface

A disk drive control technology in which a single SCSI adapter card plugged into a PC slot is capable of controlling as many as seven different hard disks, optical disks, tape drives, etc.

software

The set or sets of programs that instruct the computer hardware to perform a task or series of tasks -- for example, the UNIX operating system software and the VIS Version 4.0 software.

speech energy

The amount of energy in a 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 file-system

A collection of several talkfiles. The file-system is organized into 16-Kbyte blocks for efficient management and retrieval of talkfiles. The CONVERSANT VIS speech file-system is not consistent with standard UNIX file-systems, and can not be referenced with standard UNIX commands such as "ls," "cat," etc.

speech modeling

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 phrase

A continuous speech segment encoded into a digital string.

Speech Recognition

An optional feature that provides speaker independence, connected digit recognition, key word spotting, prompt interrupt, and DTMF support functionality.

speech space

An area that contains all digitized speech used for playback in the applications loaded on the system.

standard speech

The speech package containing simple words and phrases produced by AT&T for use with a CONVERSANT VIS. 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 the voice prompts played by the VIS.

standard vocabulary

A standard package of simple word speech models provided by AT&T and used for WholeWord Speech Recognition purposes. These phrases include the digits "zero" through "nine," "yes," "no," and "oh."

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.

swap space

An area of the disk that is fixed in size depending on the amount of Random Access Memory (RAM) that is on the system. This area is used to temporarily store programs (swap in and out) that are competing for CPU time and cannot remain in core memory due to size constraints.

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 which is depressed when the handset is resting in the cradle (on hook). The device is raised when the handset is picked up (the phone is off hook).

switch hook flash

A signaling technique in which the signal is originated by momentarily depressing the “switch hook.”

switch interface administration

The component of the VIS that enables you to define the interaction between the VIS 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 switching systems.

synchronous communication

A method of data transmission in which bits or characters are sent at regular time intervals, rather than being spaced by start and stop bits. See also “asynchronous communication.”

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 3,000 lines that provides voice and data communications for its users.

system administrator

The person assigned the responsibility of monitoring all VIS software processing, performing daily system operations and preventive maintenance, and troubleshooting errors as required.

system architecture

The manner in which the CONVERSANT Voice Information System software is structured.

system message

An event or alarm generated by either a VIS or end user process.

system monitor

A component of the VIS in which tests are performed to verify that each incoming telephone line and its associated tip/ring or T1 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

A collection of records that are logically grouped together.

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 may contain up to 65535 phrases and the speech file-system may contain multiple talkfiles.

TDM

See “Time-Division Multiplex.”

Terminal Emulator

Software which allows the VIS 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 speech directly from ASCII text by converting that text to synthesized speech. The text may 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 Script Builder.

ThickNet

A 10-millimeter (10BASE5) coaxial cable used to provide InterLan communications.

ThinNet

A 5-millimeter (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, each assignment being for a discrete time interval.

Tip/Ring

A term used to denote analog telecommunications using four-wire media.

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

Comprised of the exchanges between the caller and the voice system.

Transaction State Machine process

A software process that controls transactions via script execution and commands. The Transaction State Machine Process manages interaction with the network, manages interaction with other parts of the Voice System, allocates and frees devices and channels, and executes script language programs.

troubleshoot

The process of locating and correcting errors in computer programs. This process is also referred to as debugging.

TSM

See “Transaction State Machine process.”

TTS

See “Text-to-Speech.”

U

UNIX Operating System

A multi-user, multitasking computer operating system developed by Bell Telephone Laboratories division of AT&T.

UNIX shell

The command language that provides a user interface to the UNIX operating system.

usr space

An area of the disk that houses user home directories and files, and is used at installation time to temporarily load some feature packages. This is also a file system which is fixed in size once the system is partitioned at installation.

V

vi editor

A screen editor used by the VIS to create and change electronic files.

virtual channel

A channel that is not associated with an interface to the telephone network (Tip/Ring, T1, 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 may be initiated only by a "virtual seizure" request to TSM from a DIP.

VIS

See "Voice Information System."

vocabulary

A collection of words that a VIS is able to recognize using either WholeWord or FlexWord Speech Recognition.

voice channel

A channel that is associated with an interface to the telephone network (Tip/Ring, T1, or PRI). Any VIS application may run on a voice channel. Voice channel applications may be initiated by being assigned to particular voice channels or dialed numbers to handle incoming calls or they may be initiated by a "soft seizure" request to TSM from a Data Interface Process (DIP) or the **soft_srz** command.

Voice Information System

A computer connected to a telephone network that handles touch-tone input, voice response, and line transfer. The Voice Information System uses a screen-based, menu-driven user interface to interact with the system operator or administrator.

Voice Processing Co-Marketer

A company licensed to purchase voice processing equipment, such as the CONVERSANT VIS, 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 SP cards) and data storage devices (that is, hard disk, etc.)

Voice System Administration

The means by which you are able to administer both voice and non-voice related aspects of the system.

VROP

See "Voice Response Output Process."

W

warning

An admonishment used when there is a possibility of equipment damage.

wink signal

An interruption of current to a busy lamp indicating that there is a line on hold.

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