



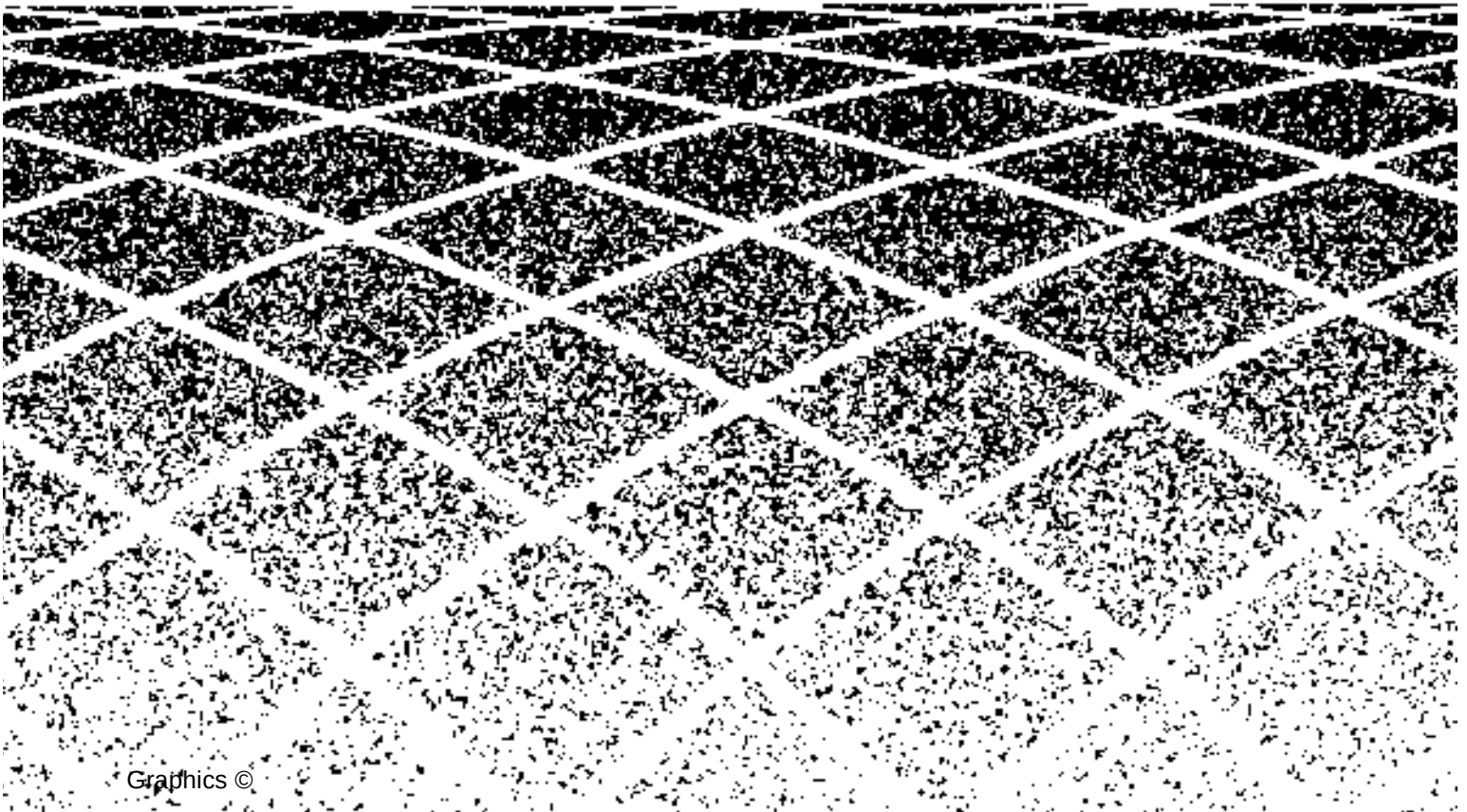
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CONVERSANT VIS V4.0

Maintenance



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About This Book

Purpose

This book is a procedural reference that describes basic repair, diagnostic, and maintenance tasks for the AT&T Intuity™ CONVERSANT® Voice Information System (VIS) Version 4.0 software and the following hardware platforms:

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

Intended Audiences

This book, *CONVERSANT VIS V4.0 Maintenance*, 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.

The intended audiences for this document are:

- **Installation Technician** — This person is responsible for making sure that the configuration they are installing is functioning properly. The installation technician uses this flowchart when troubleshooting problems that may occur when testing the system functionality. It is the object of the technician to turn over to the "customer" a system that has hardware and software correctly installed.
- **Application Developer** — This person is responsible for changes in the software and modifications to applications. The application developer uses this book when troubleshooting during application testing. For example, if the message log reports the signal processor (SP) is overloaded during application testing, the developer should refer to the appropriate system message repair procedure in Chapter 3, "System Message Listings". This message will provide a pointer to the specific procedure for reducing the system load.
- **System Administrator** — This person is responsible for day-to-day monitoring of the VIS. The system administrator assumes that the application running on the system has been verified by the application developer and was functioning properly at the time of installation. The application support person uses this book when viewing the log or running system reports to recognize when a problem occurs and when attempting to isolate and correct the problem. For example, the application support person can fix the problem using the repair procedures provided with each system message in Chapter 3, "System Message Listings", or defer the problem to the application developer or the installation technician.

How This Book Is Organized

This book is organized into the following sections:

- Chapter 1, "Getting Started"

This chapter provides basic hardware and software descriptions as well as a troubleshooting overview and preventive maintenance recommendations. This chapter gives the reader detailed descriptions and explanations about the general approach to VIS maintenance.

- Chapter 2, "Trouble and Failure Indications"

This chapter contains trouble and failure indications grouped in tables according to related problems.

- Chapter 3, "System Message Listings"

This chapter contains an explanation of the components of a VIS system message, including message number derivations, possible message originators, and severity level classifications. This chapter also contains a complete list of all VIS system messages, along with a repair procedure for each message.

- Chapter 4, "Common Maintenance Procedures"

This chapter provides the actual procedures referenced by title in the repair procedures for the system messages.

- Appendix A, "MAP/100 Hardware Replacement"

This chapter describes procedures used to replace faulty hardware components of the MAP/100.

- Appendix B, "MAP/100C Hardware Replacement"

This chapter describes procedures used to replace faulty hardware components of the MAP/100C.

- Appendix C, "MAP/40 Hardware Replacement"

This chapter describes procedures used to replace faulty hardware components of the MAP/40.

- Appendix D, "Circuit Card Settings"

This chapter describes the settings for each card in the system that requires special switch settings and/or jumper settings.

- Appendix E, "SCSI Error Messages"

This chapter contains descriptions of the error messages displayed if a problem occurs with a SCSI device and the action to take, if necessary.

The book also includes a list of Abbreviations, a Glossary, and a cross-referenced Index.

How to Use This Book

This book is a procedural reference that describes basic repair, diagnostics, and maintenance tasks to be used on an as-needed basis. The book approaches maintenance from two perspectives related to how a problem may be discovered in the VIS: from an observable or experienced symptom reported by a customer or administrator, or from a system message indicating a degree of change in the current operating system.

Using this book, the user can do the following:

- Identify problem symptoms (Chapter 2)
- Perform emergency restoration and repair procedures (Chapter 3 and Chapter 4)
- Perform maintenance tests (Chapter 4)
- Analyze displays of alarms, errors, and test results (Chapter 4)
- Replace system components (Appendixes)

Refer to Chapter 1, "Getting Started" for a detailed description of the audiences and how this book should be used. The flowcharts provided in Chapter 1 will help lead the application developers, installation technicians, and application support personnel to successful resolution of troubles experienced with the VIS.

Conventions Used in This Book

The following typographic conventions are used in this book:

- Terminal keys

- 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 rounded boxes followed by the function of that key in parentheses. For example, an instruction to press function key 3 is shown as

Press **F2** (CHOICES).

- 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**.

- User input

- 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 *type* means to press the key or sequence of keys specified. For example, an instruction to type **y** is shown as

Type **y** to continue.

Do *not* press **ENTER** after you type the value specified.

- The word *select* is used to mean one of the following:

- a. Move to the desired menu item using the arrow keys and press **ENTER**. For example, an instruction to select an item from a menu and press **ENTER** is shown as

Select Configuration Management from the Voice System Administration menu.

- b. Type the first character of the item. The first menu item beginning with that letter is selected. If more than one item begins with the same letter, then type enough letters to identify the desired item. Press **ENTER** when the correct item is highlighted.

- Information that you enter or type 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.

- Screen displays

- Information that is displayed on your terminal screen — including screen displays, prompts, script code, and system messages — is shown in typewriter-style type; for example

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

- The sequence of menu options that you must select to display a specific screen is shown as follows:

Begin at the CONVERSANT Administration menu, and select the following sequence:

```
> Voice System Administration
```

```
> Configuration Management
```

In this example, you would first access the CONVERSANT Administration menu. Then you would select the Voice System Administration option to display the Voice System Administration menu. From that menu, you would select the Configuration Management option to display the Configuration Management menu.

- The screens shown in the Intuity CONVERSANT library are only examples. Your screens may not appear exactly as illustrated.

Related Resources

The following books are expected to be used in conjunction with this book:

- *CONVERSANT VIS Version 4.0 Software Installation*, 585-350-111
- *MAP/100 Voice Processing Hardware Installation*, 585-350-107
- *MAP/100C Voice Processing Hardware Installation*, 585-350-108
- *MAP/40 Voice Processing Hardware Installation*, 585-350-109
- *CONVERSANT VIS Version 4.0 Operations*, 585-350-703
- *CONVERSANT VIS Version 4.0 Application Development*, 585-350-208
- *CONVERSANT VIS Version 4.0 Command Reference*, 585-350-209
- *CONVERSANT VIS System Description*, 585-350-207
- *CONVERSANT VIS Version 4.0 Planning*, 585-350-602

Refer to the appropriate optional software feature book for additional information concerning that particular feature. A full description of the CONVERSANT VIS documentation library is available in the *Intuity CONVERSANT VIS Version 4.0 Documentation Guide*, 585-350-002.

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 Intuity CONVERSANT VIS V4.0 product behaves differently than is documented in the core library.

To help with this, an online bulletin board is available to all Intuity CONVERSANT VIS V4.0 customers that provides supplemental information about this product in an electronic, E-mail format. These updates include hints, tips, and exception conditions about all aspects of the Intuity 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 Intuity CONVERSANT VIS V4.0 Access articles, call 1-800-242-6005, and ask for department 186.

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Please include the name and document number of this book.

Getting Started

1

What's in this Chapter

This chapter contains information about the isolation and resolution strategy, the escalation strategy, and general maintenance of the VIS.

Isolation and Resolution Strategy

The primary maintenance objective is to detect, report, and clear problems as quickly as possible with minimum disruption to normal service. The information presented in this book is designed to help you fix those problems that you can, and escalate those you cannot through the appropriate escalation process.

When a system is having problems, you should:

- Check the Message Log report
- Isolate the problem
- Attempt to resolve the problem

In all cases, it is assumed that when you have exhausted all methods to resolve the problem, you should escalate the trouble through your normal escalation process.

The steps to guide you through the isolation and resolution process are divided into three areas according to the activity that is being performed when the trouble arises. These areas include:

- Installation technician
- Application support
- Application development

Each of these areas are described below, with flowcharts, and are based on general knowledge of the various roles played in the function of a VIS. As you step through the isolation procedures, be sure to document the actions taken and the results of those actions. This helps to expedite the resolution process should technical support personnel become involved. It is also helpful when trying to recreate the problem, should the problem be software-related.

Following are some general guidelines to follow when using the flowcharts:

- One person may perform one, two, or all three of the functions of each of the target audiences depending on the environment in which the VIS resides.
- Each of the audiences involved have "hand-offs" to the others when a problem migrates to an area outside that audience expertise. For example, an application support person has determined that the trouble being experienced is caused by a defective circuit card. At this time, the application support personnel should allow the installation technician to perform the replacement procedure for the circuit card.



NOTE:

These "hand-offs" are implied and are only meant to allow each audience to perform the tasks that they are most comfortable with.

- Use the flowcharts only as a guideline to allow you to resolve troubles without the aid of support personnel.

Installation Technician

The installation technician is responsible for making sure that the configuration they are installing is functioning properly. The installation technician uses this flowchart when troubleshooting problems that may occur when testing the system functionality. It is the objective of the technician to turn over to the "customer" a system that has hardware and software correctly installed. For example, if the VIS does not answer when the installation technician places a test call, the technician should refer to Chapter 2, "Trouble and Failure Indications" in this book to isolate the problem.

Refer to Figure 1-1 for the installation technician flowchart.

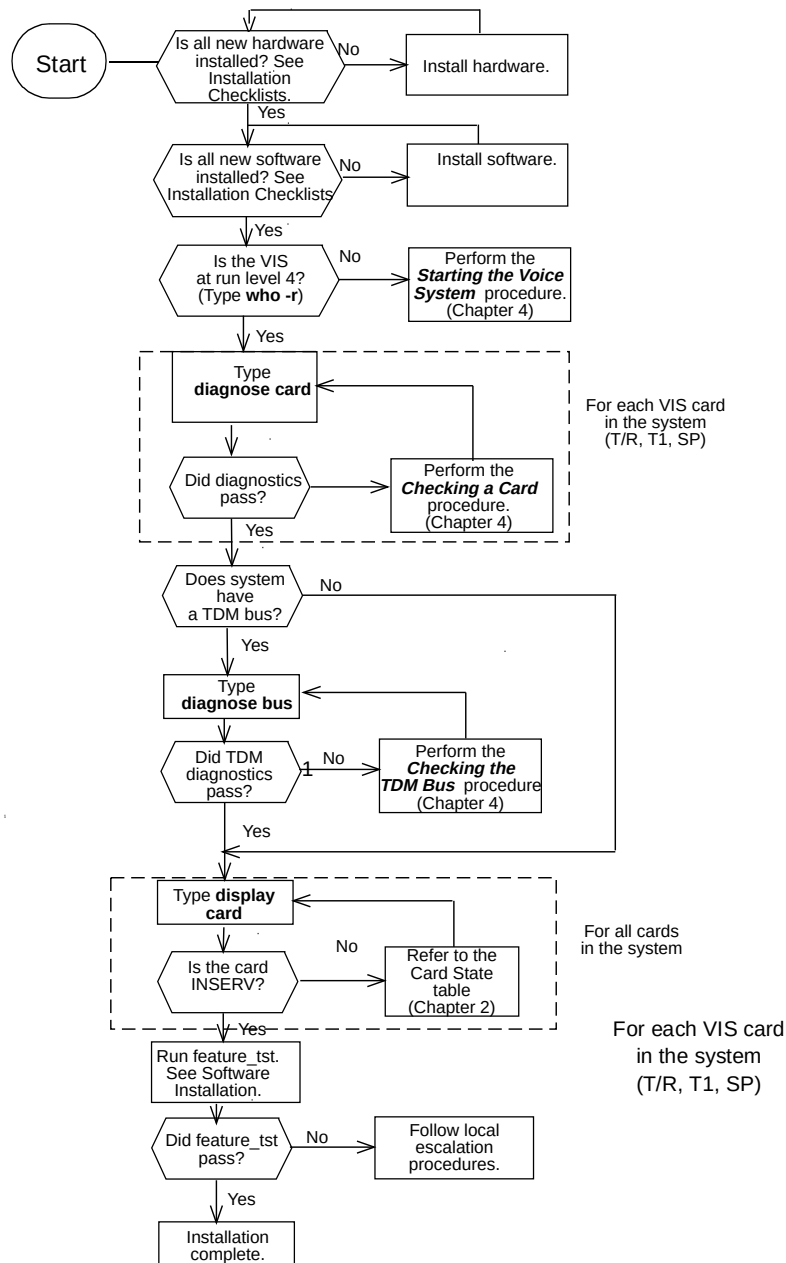


Figure 1-1. Installation Technician Flowchart

Application Developer

The application developer is responsible for changes in the software and modifications to applications. The application developer uses this book when troubleshooting during application testing. For example, if the message log reports that the signal processor (SP) is overloaded during application testing, the application developer should refer to the appropriate system message repair procedure in Chapter 3, "System Message Listings" in this book. This message will provide a pointer to the specific procedure for reducing the system load.

Refer to Figure 1-2 for the application developer flowchart.

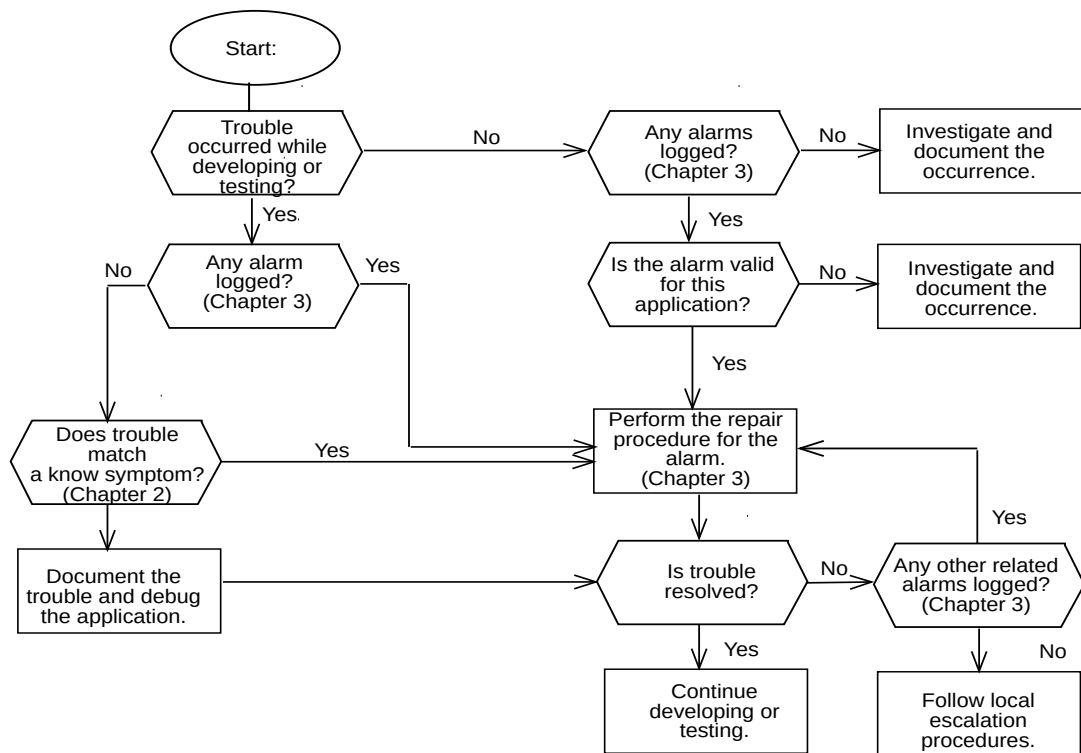


Figure 1-2. Application Developer Flowchart

Application Support Personnel

The application support person is responsible for day-to-day monitoring of the VIS. The application support person assumes that the application running on the system has been verified by the application developer and was functioning properly at the time of installation. This person uses this book when viewing the log or running system reports to recognize when a problem occurs, and when attempting to isolate and correct the problem. For example, the application support person can fix the problem using the repair procedures provided with each system message in Chapter 3, "System Message Listings" in this book, or defer the problem to the application developer or the installation technician.

Refer to Figure 1-3 for the application support flowchart.

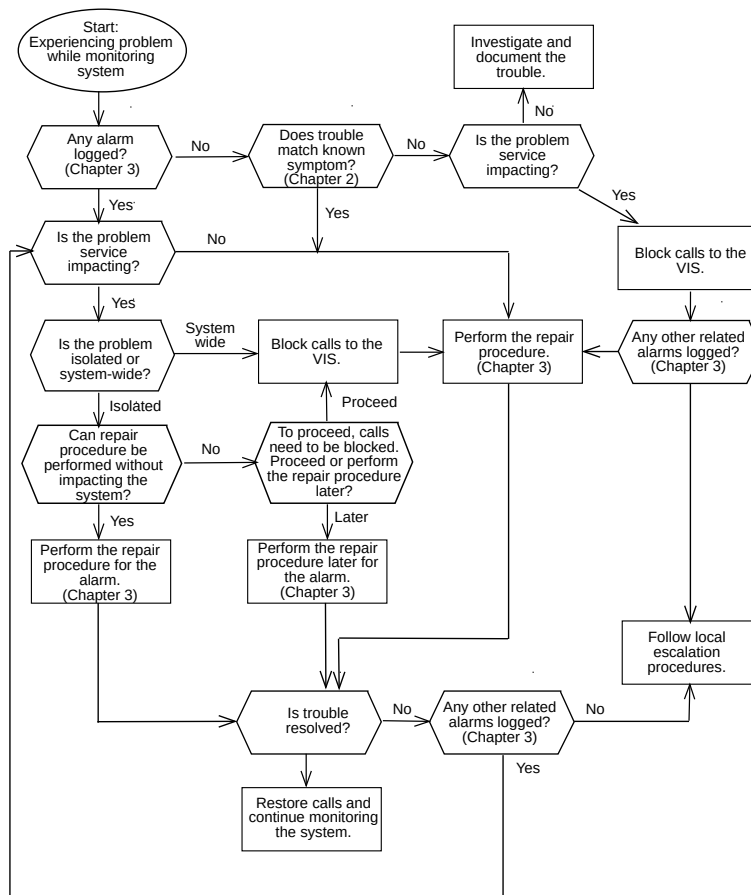


Figure 1-3. Application Support Flowchart

Escalation Strategy

When it becomes necessary to report a problem on the VIS, contact your technical support organization. A customer engineer records the problem and begins to work on its resolution. The customer engineer has an in-depth knowledge of the VIS and the ability to dispatch necessary components and/or an installation technician to the customer site if needed. To help expedite the resolution, a Trouble Information Form (shown on the next page) should be completed.

When you are unable to resolve the trouble you have experienced, use the following Trouble Information Form to provide the customer engineer with general information concerning the trouble as well as the necessary passwords and modem numbers.

Trouble Information Form	
Company Name _____	Contact Person _____
Location Address _____	Phone Number _____
CONVERSANT VIS software version number _____	
Login information for remote access:	
Modem phone number _____	
Login ID for install _____	
Password for install _____	
Dial-up password (if available) _____	
root passowrd _____	
If no modem, complete the following concerning the system configuration:	
Lines into the system _____	
Number of T/R cards _____	
Number of T1/E1 cards _____	
Number of SP cards _____	
Number of 3270 cards _____	
Any updates or patches _____	
Name of application _____	
Any custom DIPs or custom software of the system? _____	
Any deviation of hardware or software from the CONVERSANT standard loading procedure? _____	
How long has the system (or the application) having difficulties been in place? _____	
Was the system working prior to an application change or addition? _____	
Was the system working prior to a hardware change or addition? _____	
Is the system out of service (that is, is it not taking calls)? _____	
Has this problem occurred before? _____	
Were there any message in the Message Log report about the time that the trouble occurred? _____	
Symptoms of trouble. Include a scenario that would make the trouble happen, if possible.	

What have you done to isolate and/or resolve the trouble so far?	

Routine Maintenance

This section contains the following preventive maintenance procedures for the VIS:

- Inspecting the Floppy Disk Drive
- Cleaning the Cartridge Tape Drive
- Cleaning the Fan Filters
- Visual Inspection of the equipment as required to help prevent premature equipment failures

Inspecting the Floppy Disk Drive

The following should be considered when inspecting the floppy disk drive:

1. Is the bus interface cable connected properly to the floppy disk drive and the controller card?
2. Is the power cable for the floppy disk drive plugged in properly to the power supply?

Because the disk heads are easily scratched, we do not recommend cleaning your floppy disk drive. Rather, if you find that you can no longer read or write when your floppy disk drive is in use, replace the drive. Refer to the appropriate appendix in this book for instructions on how to remove and install the floppy disk drive.

Cleaning the Cartridge Tape Drive

To improve cartridge tape usage, the following is recommended:

- Clean the tape drive heads after every 8 hours of use. If you are using new tapes, clean the tape drive heads after every 2 hours of use. Use the following commands:
 - The command `/usr/lib/tape/tapecntl -r` cleans the read head of the cartridge tape drive.
 - The command `/usr/lib/tape/tapecntl -w` cleans the write head of the cartridge tape drive.
- Use only the following cleaning tape cartridges, which are available at most local computer office supply stores. Follow the instructions provided with the tapes.
 - 3M DC 6150
 - 3M DC 6320
- Do not perform backups while the system is active in multi-user mode.

- When using a shell command for tape access, specify `/dev/rmt/c0s0r` to automatically retension the tape before reading and writing. The command `/usr/lib/tape/tapecntl -t` will also retension the tape.

Cleaning the Fan Filters

Clean the fan filters on the VIS platforms at least once a month, depending on the environment, even if the filter doesn't appear dirty. The location of the fan filters is platform-dependent.

MAP/100 Platform

The MAP/100 is equipped with two fan filters located behind the two front doors. To clean the filters, open the front doors and detach the filters from the velcro fasteners. Rinse in warm water and squeeze dry.

To reinstall the filters, simply position them behind the door and press on to the velcro fasteners.

MAP/100C Platform

The MAP/100C is equipped with three cooling fan filters; one is located behind the power supply filter access door, a second on the fan access panel, and a third on the drive bay door. To clean the filters, release the two captive screws that secure the door to the unit and remove the filter. Rinse in warm water and blow dry.

To reinstall the filter, simply position it behind the door, close the door, and tighten the captive screws.

MAP/40 Platform

The air filter in the MAP/40 is located in the front of the chassis in the lower bezel cover and is reusable. The air filter should be checked and cleaned on a regular basis. To remove the air filter, clean it and reinstall it using the following procedure.

1. Press down on the center tab at the top of the lower bezel and pull forward to remove the bezel.
2. Remove the filter.
3. Wash with mild soap and water.
4. Allow the air filter to thoroughly air dry.

Do not use heat to dry the filter and do not place a wet or damp filter into the computer.

5. Place the dry filter in the lower bezel.
6. Insert the bottom tab of the bezel into the chassis.

7. Bring the bezel forward and press the top center tab down.
8. Lock into place.

Visual Inspection

The visual inspection helps you to identify any obvious equipment problems before you perform more exhaustive tests. Perform a visual inspection of system equipment at least once a month unless local guidelines, such as central office guidelines, warrant a different schedule.



CAUTION:

This is only a VISUAL inspection. Do not physically touch anything in the unit unless you observe proper ESD precautions and the unit is gracefully powered down. Failure to power down before handling equipment can cause irreparable equipment damage.

1. Verify that the input power connections are secure.
2. Verify that the rear circuit breaker and power switch on the unit are in the ON position.
3. Check the status of the visual indicators listed in Table 1-1, Table 1-2, and Table 1-3 for the MAP/100, the MAP/100C and the MAP/40. Notice that the second column of tables list the color of the indicator and the number of indicator lights on the unit.

If any of the indicators are not in the proper state, refer to Table 1-4 through Table 1-6 for the recommended action.



CAUTION:

Make sure the unit has been gracefully powered down before performing any replacement procedures such as reseating cables. Failure to power down before handling equipment can cause irreparable equipment damage. Refer to "Shutting Down the Operating System" in Chapter 4, "Common Maintenance Procedures" in this book for additional information on powering down the VIS.

4. Check the following cables to make sure that the connectors are not damaged or loose, and replace any damaged cables or re-insert loose connectors:
 - All external cables
 - TDM cable spanning slots inside the card cage
 - All connectors on the CPU card
 - All connectors on the hard disk controller card
 - The connector on the cartridge tape card

- Both signal processor to companion card cables (if so equipped)
 - All connections (power, control, and data) to all disk bay devices
5. Check the cooling fans by putting your hand behind the fan locations to feel the air circulating.
 6. Check to make sure all circuit cards are properly seated in the backplane and held in place with a screw.
 7. Check for proper placement of circuit cards. Refer to the hardware installation book for the particular platform for information on proper placement of circuit cards.

**NOTE:**

The disk activity, floppy disk drive, and hard disk drive lights are on or flashing while the disks are accessed. This is normal. When there is no disk activity, the lights are off.

Table 1-1. Normal State of the MAP/100 Visual Indicators

Indicator Description	Color (number of indicators)	Indicator Location	Normal State
Main power available	Green (1)	Front of unit	ON
Battery status - online	Red (1)	Front of unit (on AC units)	OFF
Battery status - low	Yellow (1)	Front of unit (on AC units)	OFF (will be ON when unit is powered by battery)
Battery status - charging	Yellow (1)	Front of unit (on AC units)	OFF
Battery status - charge fault	Red (1)	Front of unit (on AC units)	OFF
Fan status	Green (6)	Front of unit	ON
Disk activity	Green (1)	Front of unit	ON, OFF, or FLASH
Floppy Drive	Red or amber (1)	On the floppy drive	ON, OFF, or FLASH
Hard Drive	Amber (1)	On the hard disk drive	ON, OFF, or FLASH

Table 1-2. Normal State of the MAP/100C Visual Indicators

Indicator Description	Color (number of indicators)	Indicator Location	Normal State
Fan status	Green (6)	Front of unit	ON
Floppy drive	Red or Amber (1)	On the floppy drive	ON, OFF, or FLASH
Hard Drive	Amber (1)	On the hard disk drive	ON, OFF, or FLASH
Power	Green (1)	Front of the unit (on the user interface panel)	ON

Table 1-3. Normal State of the MAP/40 Visual Indicators

Indicator Description	Color (number of indicators)	Indicator Location	Normal State
Power-On indicator	Green (1)	Center control panel	ON
INT Drive indicator	Green (1)	Center control panel	ON, OFF, or FLASH

Table 1-4. MAP/100 Visual Inspection Fault Isolation

Indicator Not in Normal State	Recommended Corrective Action
Main power available	1. Make sure the power cord is plugged into an active power outlet and the rear circuit breaker and power switch are turned on. 2. Make sure the power supply and battery module (PS&BM) is completely installed in the unit with all 1/4-turn fasteners secured. There is a "deadman" switch on this assembly. 3. Replace the PS&BM using the replacement procedures in Appendix A, "MAP/100 Hardware Replacement". 4. Escalate to the next level of support.
Floppy disk drive	1. Inspect the floppy disk drive as described earlier in this chapter. 2. If the problem persists, escalate to the next level of support.
Hard disk drive indicator or disk activity indicator	Escalate to the next level of support.
Battery status indicators	If you suspect a fault with any of the battery status indicators, escalate to the next level of support.
Fan status indicators	1. Check connectors on the suspect fan (Fan 1, 2, 3, 4, or rear fan). 2. Replace the fan using the procedures in Appendix A, "MAP/100 Hardware Replacement". (The power supply fan is not serviceable.) 3. Escalate to the next level of support.

Table 1-5. MAP/100C Visual Inspection Fault Isolation

Indicator Not in Normal State	Recommended Corrective Action
Power on	Make sure the input power connections are secure and power is turned on.
Floppy disk drive	1. Inspect the floppy disk drive as described earlier in this chapter. 2. If the problem persists, escalate to the next level of support.
Hard disk drive indicator or disk activity indicator	Escalate to the next level of support.
Fan status indicators	1. Check connectors on the suspect fan (fan 1, 2, 3, 4, 5, or 6). 2. Replace the fan using the procedures in Appendix B, "MAP/100C Hardware Replacement" (The power supply fan is not serviceable.) 3. Escalate to the next level of support.

Table 1-6. MAP/40 Visual Inspection Fault Isolation

Indicator Not in Normal State	Recommended Corrective Action
Power on	1. Make sure the power cord is plugged into an active power outlet. 2. Check the LED on the monitor to see if it has power. 3. If the monitor has power, type ps -ef and observe the INT LED. 4. If no response is seen on the monitor, escalate to the next level of support.
INT drive	1. Type ps -ef and observe the INT LED. 2. If no response is received, escalate to the next level of support.

Trouble and Failure Indications

2

What's in This Chapter

This chapter provides troubleshooting information to help you isolate and correct problems that may occur with the CONVERSANT Voice Information System (VIS). Refer to this chapter to determine the action to take when trying to isolate a problem. This chapter assumes that you have read Chapter 1, "Getting Started" for a description of the trouble resolution strategy.

Checking the Message Log

Checking the Message Log should be the first step you take when a problem occurs.

1. Check the Message Log, if possible (that is, if the system is up), for a message reported around the same time that you observed or experienced the problem.

Use the **display messages** command to check the Message Log and the **explain** command to display online description and effect statements for each message. For additional information on these commands, refer to *CONVERSANT VIS 4.0 Command Reference*, 585-350-209.

2. If your inspection of the log finds a message similar to the problem, refer to Chapter 3, "System Message Listings" in this book for the appropriate repair procedure for that message.

If your inspection of the log does *not* find a message relating to the problem, continue with the next section, "Isolating Troubles"

For additional information concerning system troubles that do appear in this book, refer to *CONVERSANT VIS 4.0 Change Description*, 585-350-402.

Isolating Troubles

The tables in the following sections provide a list of actions to try when trouble is observed. These tables should be used to help identify troubles before proceeding with more exhaustive isolation tests. The tables are divided into the following major classes based on the type of trouble that you are experiencing.

Table 2-1. Trouble Classes

Class	Description
Power up troubles	These are experienced when you are first turning the system on or after a complete shutdown has been performed
Boot (or reboot) troubles	These are experienced when the system crashes and reboots itself or when you perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures".
System installation, upgrade, or setup (hardware and software) troubles	These are experienced during initial installation of the VIS, while upgrading either hardware or software, or when adding additional hardware and/or software
Application troubles	These are experienced when the VIS is not taking calls or when the VIS is taking calls but the application is not working as expected. There are a number of subgroups for application troubles, such as speech, database, Text-to-Speech, Speech Recognition, etc.
Administrative troubles	These are experienced while performing a task you have initiated (for example, a trouble arises while doing a <i>mkimage</i> of the system software)
Operational troubles	These are experienced with the physical components of the VIS, such as a blank monitor or an inoperable modem. These troubles can occur at any time
Other VIS troubles	These include those general trouble areas that do not fall into the other classes listed above

To use the tables, first determine the class under which your trouble is included, then find the condition in the table that is best described by the trouble listed in the first column, and follow the recommendations listed in the second column.

Assumptions

The following assumptions are made in this chapter:

- The resolutions in the second column of the tables may not be exhaustive. They are intended to provide a starting point to isolate a problem.
- The procedures in the second column assume general editing knowledge and script familiarity, as most of the commands and procedures are performed from the command line.
- A visual inspection of the system has already been performed. Refer to Chapter 1, "Getting Started" for additional information.

Isolating Power Up Troubles

The following indications are related to powering up troubles:

Table 2-2. Isolating Power Up Troubles

Trouble Indication	Corrective Action
System will not power up.	1. Verify that both circuit breaker(s) on the back of the platform and/or the power toggle switch on the front are in the ON position. 2. Verify all external system connections (power cords and monitor cables) are correct and make sure that all cables are connected to the right place (for example, the blue cable connects to the 3270 card and not to the system parallel port). 3. If you have a platform with a battery backup, reseal the battery backup unit. Refer to the appropriate appendix for the replacement procedure, but only reseal the battery instead of replacing it.
During startup, the following message is displayed: "Shared memory is marked as invalid. cvis_menu exiting."	1. Perform the "Stopping the Voice System" and "Starting the Voice System" procedures. 2. Enter cvis_mainmenu. 3. If the problem persists: a. Perform the "Stopping the Voice System" procedure. b. Enter cp /gendb/shmem/devtbl /gendb/shmem/devtbl.old c. Enter rm /gendb/shmem/devtbl d. Perform the "Starting the Voice System" procedure.
The start_vs command takes a long time to initialize on a system with many analog lines.	1. Go to the Switch Administration screen and set Dial-Tone Training to "No." Refer to Chapter 5, "Switch Interface Administration," of If dial-tone training is "no," you should specify the dial-tone frequency to be used with a particular switch (350 and 440 is the default for DEFINITY). 2. Verify that the transfers being performed in the application are still functioning properly.

Isolating Boot Up Troubles

The following indications are related to booting up troubles.

Table 2-3. Isolating Boot Up Troubles

Trouble Indication	Corrective Action
Cards are not recognized during boot up.	1. Enter displaypkg to make sure the driver software is installed (that is, SP,T1 or driver software). 2. Perform the "Checking a Card" procedure in Chapter 4, "Common Maintenance Procedures", making sure that cards have the proper switch settings and correct placement of terminating resistors if attached to the TDM bus cable.
When the system boots, you see messages in the message log report or on the console such as Unable to attach shared memory, Bad DEVTBL, and/or VROP respawning too rapidly.	1. Perform the "Stopping the Voice System" procedure. 2. Enter cp /gendb/shmem/devtbl /gendb/shmem/devtbl.old 3. Enter rm /gendb/shmem/devtbl 4. Perform the "Starting the Voice System" procedure.
A memory size error is printed when the system is rebooted.	1. Press CONTROL ALT ESC when prompted. (Perform the "Rebooting the UNIX System" procedure if you have already passed this point.) 2. In the Software CMOS Setup screen, move the cursor to the BASE MEMORY and change the number so that it matches that in field (FOUND=). Perform the same procedure for EXTENDED MEMORY. The actual value must be entered. 3. Press F1 to exit this screen.
Message received: Non-system disk or disk error. Replace and hit any key to continue.	1. Check the floppy disk drive to confirm there is not a disk in the floppy drive. 2. Check the cartridge tape drive to confirm there is not a tape in the cartridge tape drive. 3. Check the power connections. 4. Check the power supply by watching for hard disk access with the disk access light. 5. Perform the "Rebooting the UNIX System" procedure.

Continued on next page

Table 2-3. Isolating Boot Up Troubles — Continued

Trouble Indication	Corrective Action
The system exhibits rolling reboot (that is, the system passes run level four, then reboots; this happens continuously).	1. Power down the system using the "Shutting Down the Operating System" procedure in Chapter 4, "Common Maintenance Procedures" or power off the platform right after the system reboots. 2. Remove one card (for example, SP, T1, , 3270, T/R, etc.). 3. Perform the "Rebooting the UNIX System" procedure. 4. Continue Steps 1–3 until the system reboots cleanly. 5. Replace the defective card.
A file system check shows a file system with 0 files, 0 blocks, or 0 free.	1. If 0 free, verify the disk partition was adequate. Refer to "Partitioning the Disk" in Chapter 2, "Installing the UNIX Operating System," of . 2. Reload the system software from a backup tape. If no backup is available, reload the software as described in .
SCSI system hangs after reboot, screen is blank.	1. Check the floppy disk drive to confirm there is not a disk in the floppy drive. 2. Check the power connections. 3. Check the power supply by watching for hard disk access with the disk access light. 4. Reboot the machine after checking all of the above.

Isolating System Installation/ Upgrade/Setup Troubles

The following indications are related to system installation, upgrade, or setup troubles.

Table 2-4. Isolating System Installation/Upgrade/Setup Troubles

Trouble Indication	Corrective Action
Cannot initialize IPCI card.	1. Check for possible conflict with memory and I/O addresses or interrupt conflicts. 2. Log in as root. 3. Enter crash at the system prompt. 4. Enter strstat at the > prompt. The output should be similar to that shown in Figure 2-1. a. Increase the values to slightly higher than what is listed under the "CONFIG" column. b. If there is anything other than 0's in the "FAIL" column, use the /etc/conf/bin/ldtune command to increase the tunable parameter. The parameters to tune are NSTREAM, NQUEUE (should be 4 X NSTREAM), NBLK4, NBLK16, NBLK64, NBLK128, NBLK256, NBLK512, NBLK1024, NBLK2048, and NBLK4096. c. After the tunable parameters have been changed, use the /etc/conf/bin/ldbuild command to rebuild the UNIX kernel. 5. Perform the "Shutting Down the Operating System" and "Rebooting the UNIX System" procedures.

```

> strstat
ITEM          CONFIG  ALLOC  FREE    TOTAL    MAX    FAIL
streams        106    106     0      592    109     0
queues         522    522     0     1926    530     0
message blocks   75     57    18    24269    77     0
data blocks     68     57    11    18271    68     0
link blocks     16     16     0      16     16     0
stream events    6      4     2       6      6     0
Count of scheduled queues:  0

```

Figure 2-1. strstat Sample Output

Table 2-5. System Installation/Upgrade/Setup Troubles

Trouble Indication	Corrective Action
Speech file system failures during installation	1. Perform the "Stopping the Voice System" procedure. 2. Save the /etc/partitions file to floppy before starting (in case of disk crash or other disaster, this file is NOT on the mkimage tape.) 3. Make sure the /vs/data/fslist file has the proper speech file size: a. Edit the /etc/partitions file and look at the number of blocks associated with the speech file system (/usr2, speech01, whatever the name is). b. Once the number is known, edit the /vs/data/fslist file and update the speech file size. c. Calculate the proper speech file system size by obtaining the "size =" number from the /usr2 entry within the /etc/partitions file. Divide this number by 32 to get the blocksize required in the /vs/data/fslist. For example, if the /etc/partitions entry looked like: <pre>usr2010: partition = 4, start = 1886208, size = 495616, tag = USR, perm = VALID</pre> Divide 495616 by 32 to get 15488. The /vs/data/fslist file should look like: <pre>/dev/rdisk/c0t0d0s 415488 readwrite DIO0</pre> 4. Run the audit -v -f command to rebuild the speech file system and check for errors. (Use audit -2vf) 5. Perform the "Starting the Voice System" procedure.

Isolating Application-Related Troubles

The following troubles are application related.

Table 2-6. Isolating Application-Related Troubles

Trouble Indication	Corrective Action
The VIS is ringing but is not answering the phone or is busy.	1. Enter display messages to find messages related to the trouble. If found, refer to Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Enter display card all to check the status of all the cards and to check if the application is properly assigned to the channel(s). If the cards are not Inserv, refer to the Channel/Card State Troubles table later in this chapter. 3. Make sure the application contains the Answer Phone action.
The VIS answers the call, but does not play any speech.	1. Enter display messages to find messages related to the trouble. If found, refer to Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Enter display card all to verify that the spadm script is not assigned to any channels and to check the status of all the cards. If spadm is assigned, re-assign the channel to the correct script name (see Chapter 3, "Configuration Management," of). If the cards are not Inserv, refer to the Channel State Troubles table later in this chapter. 3. Place test calls to determine if this is occurring on every channel. If the problem is occurring only on certain channels, this could be a hardware problem. Place the problem channels in a MANOOS state until the card can be replaced. 4. Enter trace tsm chan all tee /tmp/trace.out. This sends the trace output to the console and to the file /tmp/trace.out. Review the trace output for failure indications or error messages.

Continued on next page

Table 2-6. Isolating Application-Related Troubles — *Continued*

Trouble Indication	Corrective Action
All calls are dropped.	1. Enter display messages to find messages related to the trouble. If found, refer to Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Enter hstatus all to check the status of the host if this feature is being used. If all sessions are recovering or logging in, this could explain the trouble. 3. Enter who -rpb 4. Search for different time stamps on the processes. A recent date different from most of the others may indicate the process respawned. 5. Record the scenario that caused the problem using the Report Form in Chapter 1, "Getting Started". If the process is specific to a feature package, refer to the trouble table for that feature package in this chapter.

Isolating 3270 Communication Troubles

For additional troubleshooting and detailed information about the host interface communication process, refer to the *CONVERSANT VIS Host Interface*, 585-350-815.

Isolating Speech Recognition Troubles

The following tables attempt to isolate troubles related to the speech recognition functionality on the VIS. These troubles are separated into general speech recognition troubles (WholeWord and FlexWord) and accuracy troubles.

Isolating General Speech Recognition Troubles

The following speech recognition troubles are related to general problems on the VIS with the feature.

Table 2-7. Isolating WholeWord Speech Recognition Troubles

Trouble Indication	Corrective Action
Script prompt does not give you time to respond.	Enter display card <sp_card_number> to check the following: 1. Check that the functionality assigned to the SP card is WW_RECOG or VOICE+WW_RECOG. Refer to “Assigning Functions to SP Cards” in Chapter 3, “Configuration Management,” of , to assign the correct functionality. 2. Make sure the SP is in the INSERT state. If the SP is MANOOS, enter restore card <sp_card_number>. If the SP is BROKEN, enter diagnose card <sp_card_number>. If the SP card or CMP card(s) associated with it fails diagnostics, refer to the appropriate appendix to replace the card. 3. Make sure all CMP cards attached to the SP providing speech recognition functionality are in the INSERT state. If any CMP is BROKEN or NOT_DIAG: a. Make sure the SP has WW_RECOG or VOICE+WW_RECOG assigned. b. Enter diagnose card <sp_card_number>. If either the SP board or CMP card(s) fail diagnostics, refer to the appropriate appendix in this book to replace the card. 4. Check the number of speech recognition resources available. For each CMP board attached to an SP, six channels of speech recognition are provided. Use SP_Allocate to check if a recognition resource is available before each Prompt and Collect statement, and if possible, explicitly reserve the resource. 5. Make sure the SP performing speech recognition and the telephone cards indicate “tdm1” in the OPTIONS list by entering diagnose card <sp_card_number>. If it says “no tdm,” install a TDM bus cable between these boards. If the cable is already there and it says “no tdm”, make sure the cable is installed properly. If the problem persists, replace the TDM cable.

**Table 2-8. Isolating Speech Recognition Troubles
(WholeWord and FlexWord)**

Trouble Indication	Corrective Action
Companion card NOT_DIAG state.	1. Assign speech recognition functionality (WW_RECOG, SW_RECOG, Voice+WW_RECOG or VOICE+SW_RECOG) to the SP card as described in Chapter 3, "Configuration Management," of . 2. Enter diagnose card <sp_card_number> where <sp_card_number> is the number of the SP card with the NOT_DIAG CMP card attached.
BSS error occurred during boot or start_vs.	1. Perform the "Checking a Card" procedure to make sure the SP is installed correctly. 2. Check the SP/CMP cable connections.
SP INIT failed, diagnostics not run.	1. Perform the "Shutting Down the Operating System" procedure in Chapter 4, "Common Maintenance Procedures." 2. Disconnect the SP/CMP cables from each of the CMP cards one at a time and run the SP diagnostics again. If the BSS error goes away, replace the CMP card that is no longer connected to the SP/CMP cables. 3. Replace the SP/CMP cables. 4. Make sure the SP card is an AYC2B or an AYC2C by verifying the name of the card on the front plate. Note: The AYC2 SP card cannot be used for speech recognition.
Speech playback stops on the first keyword spoken by VIS.	1. Enter display messages -c and look for a message about the SP board. Then, refer to Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Determine if barge-in is enabled for this prompt by checking the Announce or Prompt and Collect actions. There may be a touch tone simulation in the prompt. Disable the prompt if enabled to see if it plays.
A corrupted speech phrase is heard.	When rerecording an active speech phrase, first record the speech into a temporary speech buffer, then copy the phrase into the active phrase.

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**Table 2-8. Isolating Speech Recognition Troubles
(WholeWord and FlexWord) — *Continued***

Trouble Indication	Corrective Action
Clicking heard on line.	1. If the lines are connected to PBX and T/R lines, verify that the lines are configured on the PBX as ECTS (electronic custom telephone service) and <i>not</i> POTS (plain old telephone service). 2. Check the outgoing and incoming volume parameters as described in. For T1 cards, defaults are ovol=ivol=1414. For T/R cards, defaults are ovol=1000 andivol=2000. Re-record speech if volume levels were too high. 3. Perform the "Checking a Card" procedure, if necessary. 4. If other lines are available on the system, connect those to the card exhibiting the noisy/clicking conditions. If the problem goes away, the lines may be bad. If the problem persists, enter diagnose card <card number>. If the card passes and the problem persists, replace the card.
No memory found on CMP <cmp number>.	Replace the CMP card. Refer to the appropriate appendix.
SP diagnostics fail intermittently.	Replace the SP/CMP cables.

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**Table 2-8. Isolating Speech Recognition Troubles
(WholeWord and FlexWord) — *Continued***

Trouble Indication	Corrective Action
No voice heard when script answers the phone.	1. Determine the type of T/R card you have by entering display card. a. The VRS6 cards should be in the tdm mode and the SP should be assigned to WW_RECOG, VOICE+WW_RECOG, SW_RECOG, or VOICE+SW_RECOG functionality or some other SP in the system should have just VOICE functionality. To change the VRS6 card to TDM mode, refer to "Changing Voice Equipment Options" in Chapter 3, "Configuration Management," of . b. The IVP6 must be set to "talk" if the SP card is assigned to WW_RECOG or SW_RECOG. There must be another SP in the system with VOICE only functionality providing the voice. 2. Make sure the SP is in the INSERTV state. If MANOOS, enter restore card <sp_card_number>. If BROKEN, enter remove card <sp_card_number>, then diagnose card <sp_card_number>. If either the SP card or CMP card(s) fail diagnostics, refer to the appropriate appendix to replace the card. 3. Make sure that both the SP performing speech recognition and the telephony cards say "tdm1" in the OPTIONS list. If it says "no tdm," install a TDM bus cable between these cards. If the cable is already there and it says "no tdm", check the cable connection by pushing down the cable at each connector to insure proper installation. If the problem persists, replace the TDM cable.

Isolating Speech Recognition Accuracy Troubles

The following speech recognition troubles are related to accuracy problems on the VIS with the feature.

Table 2-9. Isolating Speech Recognition Accuracy Troubles

Trouble Indication	Corrective Action
Script chooses the wrong option after you speak.	Have your script speak back what it recognized (the value of \$CI_VALUE) right in the Prompt and Collect action. This helps you make sure it is not a bug in the script that is making you think that recognition does not work. Perhaps your script is copying the result of \$CI_VALUE to a variable and then evaluating the variable. For a YES/NO prompt, the variable must be of type character since it returns "Y" or "N". If you are using an SDIG recognition type with a length greater than 1, you can trace the recognition dip (trace recog_dip) to see what the dip is returning to the script.
Initial timeout not long enough for digit string.	Make sure the Initial Timeout value in the Prompt and Collect action is long enough for the system to recognize valid keywords in the caller's speech. If you are having recognition problems on a prompt expecting a digit string, try increasing the initial timeout by three to five seconds.
Broken CMP or SP card. Return without result.	Enter diagnose card <sp_card_number> to diagnose the SP and its associated CMP cards. Make sure all the tests pass. If a Prompt & Collect statement is using speech recognition and has Speak with Interrupt enabled, the prompt should not exceed 30 seconds because the SP card can only buffer up to 30 seconds worth of input speech for performing recognition. Replace the single Prompt & Collect statement (which had the >30 second prompt) by a series of Prompt & Collect statements all with prompts shorter than 30 seconds in length. As long as the prompts within the commands are less than 30 seconds in length, a series of statements can be used to replace a single Prompt & Collect which has a long prompt.
A speakerphone is being used.	Use a normal handset with the receiver near the mouth and retest.

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Table 2-9. Isolating Speech Recognition Accuracy Troubles — *Continued*

Trouble Indication	Corrective Action
Trouble is effecting a specific person and not all callers.	There are people whose voices fall outside of the speech models and will have difficulty getting speech recognition to work for their voice every time. You may want to attempt to collect data samples of the specific audience.
Wrong recognition type.	Make sure the recognition types used are appropriate for what the caller is being asked to say. For example, if the recognition type is SY_N, the system expects callers to say "Yes" or "No". If the callers are responding with digits instead of the words "Yes" or "No", accuracy will be very poor.
Custom grammar was overwritten.	Reinstall the custom work package if your script uses a custom grammar and the speech recognition package has been reloaded for some reason.
Custom grammar or DIP inoperable.	Check to see if the speech recognition problem you are having is only for prompts that use custom work (a custom grammar or DIP). Contact the developer of your custom work for assistance.
Speech recognition not installed correctly.	Perform the "Reinstalling the CONVERSANT Application Software Package" procedure in Chapter 4, "Common Maintenance Procedures," for Speech Recognition. Then, reinstall all customer grammars and DIPs.
SP card will not download with speech recognition functionality assigned.	If using custom grammars, check with the developer of the custom work to make sure the grammar does not exceed design limitations. Also, make sure the SP card is an AYC2B or an AYC2C by verifying the name of the card on the front plate.
Recognition type is too wide.	Use the WholeWord recognition type is smallest for the expected data. For example, if callers are asked to say 1, 2, 3, or 4, use the SI_5 rather than SDIG with minimum and maximum digits of 1.
Script reprompts MAX_TRIES number of times	Check for sufficient speech recognition resources. See the SP_Allocate external action as described in <i>CONVERSANT VIS WholeWord Speech Recognition</i> , 585-350-813.

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Table 2-9. Isolating Speech Recognition Accuracy Troubles — Continued

Trouble Indication	Corrective Action
Barge-in does not work when talk over the prompt (applies to WholeWord speech recognition only — FlexWord does not support barge-in).	1. Make sure SR_Prompt is set to “yes.” See the SR_Prompt external action as described in <i>CONVERSANT VIS WholeWord Speech Recognition</i>, 585-350-803. 2. Make sure the Prompt and Collect and Announce actions have Prompt With Interrupt set to “yes.” 3. Check that your incoming and outgoing speech volume levels are near the recommended levels. Refer to . If these values are changed, you must stop and start the voice system. 4. Check that an IVP6 or VRS6 card is set to “tdm”.
Cards not set correctly for barge-in (applies to WholeWord speech recognition only — FlexWord does not support barge-in).	For T1 systems: at least one SP with VOICE function and at least one SP must have WW_RECOG or VOICE+WW_RECOG. For Tip/Ring systems: at least one SP with VOICE+WW_RECOG and IVP6 or VRS cards set to “tdm”. You can also have an SP with VOICE only, an SP for speech recognition set to WW_RECOG, and IVP6 or VRS6 cards set to “tdm”.
No barge-in resources available (applies to WholeWord speech recognition only — FlexWord does not support barge-in).	Check the return code for SR_Prompt to see if barge-in resources are available (return = 0). If none are available, the call should be handled as touch tone if possible, or sent to an agent. If the problem persists, consider adding SP and CMP cards to increase the available resources.

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Table 2-9. Isolating Speech Recognition Accuracy Troubles — *Continued*

Trouble Indication	Corrective Action
Prompt is talked off without saying keywords (applies to WholeWord speech recognition only — FlexWord does not support barge-in).	Check the following: 1. Test the prompt with considerable background noise and then again in a quiet environment. 2. Make sure the caller is not using a speakerphone. 3. Investigate whether the prompt needs to be interruptible. If not, set Speak With Interrupt to “no” in the Prompt and Collect action. 4. Make sure SR_Prompt is set early enough in the script. This can be done immediately after the Answer Phone action as shown below: <pre> start 1. Answer Phone 2. External Action SR_Prompt Recognize_During_Prompt = “yes” 3. Announce Speak Without Interrupt Phrase “sil.050”.in -2 </pre>
Wrong wordlist (applies only to FlexWord speech recognition).	Check your wordlist to make sure the words the caller is speaking are included in the wordlist.
You hear stuttered speech during talkoff.	Refer to “Reducing Load” in Chapter 4, “Common Maintenance Procedures.”

Isolating ORACLE Database Troubles

The following troubles are related to the database problems on the VIS.

Table 2-10. Isolating ORACLE Database Troubles

Trouble Indication	Corrective Action
The voice script gets incorrect information or no information from the local database.	1. Enter display messages and check Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Enter dbfree to check the amount of free database space. 3. Enter trace tsm dip1 chan all, where <i>dip1</i> is the local database dip, to determine whether the database is full. Determine whether an attempt has been made to modify a record without first reading the record. 4. Check to see if the local database table exists or is properly configured with data.
An existing database record is occasionally not found by the script.	1. Enter display messages and check Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. If no message exists, it is likely the database DIP is not responding to the script request in a timely fashion due to heavy traffic load or system load. Verify the MATCH_FOUND value after the Read Table action. If MATCH_FOUND is -2, the script timed out on the Read Table request. The application should retry the Read Table or prompt caller to call back later.

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Table 2-10. Isolating ORACLE Database Troubles — *Continued*

Trouble Indication	Corrective Action
The voice script gets incorrect information or no information from the remote database.	1. Enter display messages and check Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Check the Database Access ID Table under Database Administration in the cvis_menu to make sure the Database Access ID is assigned to the remote machine. 3. Enter ps -ef grep oraldb to verify that the name of the remote machine is displayed. 4. Consult the database administrator of the remote machine to determine if the remote database is up and had not been shutdown ungracefully during the period the voice system was running. An example of an ungraceful shutdown of the database is to abort the database using the sqldb command shutdown abort. The observed ORACLE 6.0.30 symptom is that the shadow process of orasrv in the remote machine to which the VIS remains connected remains alive in memory after the remote database is shutdown gracefully. When the remote database is up again, this shadow process of orasrv is still able to access some of the database data in memory. However, the result would be unexpected. The script is not able to get information correctly from the remote database in this case and you should perform the "Stopping the Voice System" and the "Starting the Voice System" procedures, respectively. 5. Consult with the database administrator to see if any changes have been made to the tables on the remote machine. If changes have been made, the effected application must be verified and installed again. Refer to. 6. Enter trace tsm chan all dbdipx where x is the database ID number (either 2, 3, 4, or 5).

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Table 2-10. Isolating ORACLE Database Troubles — Continued

Trouble Indication	Corrective Action
ccasum never finishes its cron job	1. Determine if you are transferring to more than 100 numbers. 2. If so, kill the cron job: a. Enter ps -ef grep ccasum b. Search for the PID (it is located in the second column from the left) for ccasum. c. Enter kill -9 <pid #>, where <i><pid #></i> is the parent process id (PID) number. 3. Create an index for ccasum: a. Log on to sqlplus as sti/sti. b. Enter create index cca_idx on cca(phone_num); c. Enter :quit to exit the SQL*PLUS utility. 4. When the call traffic is light, enter /vs/bin/util/ccasum. Enter /vs/bin/util/ccadel when ccasum is finished.

Isolating Script Builder Troubles

The following tables provide troubleshooting related to the Script Builder package. Refer to these tables for appropriate corrective action if a trouble with Script Builder arises.

Table 2-11. Isolating Script Builder Troubles

Trouble Indication	Corrective Action
Messages are cut off.	Add a few seconds of initial silence (.2 to .5 seconds) to the beginning of the message to be played. Another way to avoid missing any segment of a message is to construct a phrase consisting of a few seconds of silence and play that phrase first.
Terminal is locked-up.	Use the following key sequence to release your terminal keypad: <code>(CONTROL) (J) stty sane (CONTROL) (J)</code>
Receive message No Space On Root File System.	Press <code>(EXIT)</code> from Script Builder and clean up the root file system. Try to free a minimum of several hundred free blocks. After that, re-enter Script Builder with your application. You may find that everything is functioning properly with your application. You may be able to continue right where you left off and just retype any previous changes that were not saved. However, depending on where you were in the application when root ran out of space, some files may be corrupted. If Script Builder fails completely with this application, you should remove the transaction part of the application (press REMOVE in Script Builder Applications screen) and restore it from a backup.

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No speech output.	1. Make sure phrase actually exists. See the Speech Administration screen in. If not, record it. 2. Make sure the OVOL and IVOL parameters are correctly set in the Switch Interface screen. Refer to . 3. Enter display card sp to check the status of the SP cards. If the cards are not Inserv, refer to the Channel/Card State Troubles table later in this chapter.

Table 2-11. Isolating Script Builder Troubles — *Continued*

Trouble Indication	Corrective Action
Host sessions recover repeatedly.	1. Enter display messages and check Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Make sure a Transaction Base screen has been specified. 3. Make sure the Login and Recovery sequences both leave the host session at a Transaction Base screen.
A ring no answer for an application that has a host interface.	1. Enter display messages and check Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Check the host timeout value and verify that the host response time is not exceeded.

Isolating Primary Rate Interface Troubles

Refer to the *CONVERSANT VIS Primary Rate Interface*, 585-350-805, for troubleshooting information.

Isolating Text-to-Speech Troubles

The following troubles are related to the Text-to-Speech feature.

Table 2-12. Isolating Text-to-Speech Troubles

Trouble Indication	Corrective Action
Text is not spoken during playback of a PROMPT that is text.	1. Check the outgoing text volume in the analog/digital interface screen. Refer to , for changing the volume level. 2. Enter display card <sp card number>, where <i><sp card number></i> is the number of the SP card allocated for TTS, to verify the card is in the INSERT state. 3. Refer to "Assigning Functions to SP Cards" in Chapter 3, "Configuration Management," of , to verify the SP card is assigned to the function TTS. 4. Check the return code of either the tts_file external function or the particular say instruction. If the return value is -2, the SP card may be under the maximum load it can handle for TTS (six simultaneous channels per SP). 5. Enter ps -ef to make sure the tts_dip is running. 6. Make sure the TDM cable connects the SP with the T/R cards on the system. 7. Perform the "Stopping the Voice System" and "Starting the Voice System" procedures in Chapter 4, "Common Maintenance Procedures" in this book

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Table 2-12. Isolating Text-to-Speech Troubles — Continued

Trouble Indication	Corrective Action
Text is not spoken during playback of a TTS file.	1. Check the outgoing text volume in the analog/digital interface screen. Refer to , for changing the volume level. 2. Verify that the /vs/bin/vrs/tts_dip process is running on the system by entering ps -ef. 3. Check the Script Builder function tts_file for the particular application and ensure that the function has been correctly configured. Refer to . 4. Verify where and what file the tts_dip external function is attempting to access. The file is located in /vs/data/tts_file directory by default. Verify that the file contains data to be synthesized. 5. Make sure the text file does not have unusual characters. 6. Create a test file to be spoken. 7. Check the tts_dip external function in the application and verify that argument 2 of the external function contains the full directory path of the file to be synthesized.
TTS speech is being played too fast or too slow.	1. Check the speaking rate of the text being played. The default speaking rate is the rate value of 2. Refer to “Advanced Text-to-Speech Features” in <i>CONVERSANT VIS Text-to-Speech</i>, 585-350-807.
Addresses, telephone numbers, fractions, and proper names are not being properly pronounced.	1. Verify that the text is grammatically correct. 2. Attempt to activate a “class detector” for the appropriate text class (address, proper names, telephone numbers, or proper names) that is not being properly pronounced. Refer to “Advanced Text-to-Speech Features” of <i>CONVERSANT VIS Text-to-Speech</i>, 585-350-807.

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Table 2-12. Isolating Text-to-Speech Troubles — Continued

Trouble Indication	Corrective Action
Assigning the TTS function to the SP card fails.	1. Verify that the SP card is an AYC9 SP card. The output for displaycard <sp card number> should be "SP-8." 2. Make sure that the SP card is in the MANOOS state before attempting to assign the TTS function to the card. 3. Verify that the system recognizes that the SP card exists in the system. Refer to the <i>CONVERSANT VIS Text-to-Speech</i>, 585-350-807, for proper hardware switch settings.
SP (AYC9) board not being recognized by the system.	1. Check the switch settings for the AYC9 SP card and ensure there are no address/interrupt conflicts. 2. Verify that the SP card is properly connected to the TDM bus and that the other cards are configured correctly for communication on the TDM bus (for example, TDM resistors, etc). 3. Attempt to install a new SP card if available. If it works, compare the hardware settings to the old card for any differences.
Run out of disk space while loading the TTS package.	1. Check the remaining disk space to ensure that the root slice has at least seven Mbytes of free space to install the TTS package. 2. Check if there are any files that can be temporarily moved to another area of the disk or removed.
TTS pronunciation of text output is grammatically incorrect.	1. Verify that the text being synthesized contains appropriate sentence structure using capitalization, commas, and action verbs. 2. Refer to "Advanced Text-to-Speech Features" in <i>CONVERSANT VIS Text-to-Speech</i>, 585-350-807, for escape sequences that can improve the pronunciation.
Script Builder fields are not correctly spoken using Text-to-Speech.	1. Verify that the Type Field in the Announce screen is set for TEXT. 2. Verify that the Field Format of the Announce screen is preceded with an "A" for speaking fields in the TTS format. 3. Refer to "Advanced Text-to-Speech Features" in <i>CONVERSANT VIS Text-to-Speech</i>, 585-350-807, for changes to ANNOUNCE action for Text-to-Speech.

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Table 2-12. Isolating Text-to-Speech Troubles — Continued

Trouble Indication	Corrective Action
Talkoff is inhibited during TTS playback.	■ Utilizing the <code>tts_file</code> external function: 1. Verify that argument one of the external function for tts_file has the numeric value of “1” to enable talkoff. 2. Check the return value for the tts_file external function. Refer to <i>CONVERSANT VIS 4.0 Text-to-Speech</i>, 585-350-807, for the possible reasons for the return code. ■ Utilizing the Announce action: 1. Check the Announce action and ensure the Speak with Interrupt option is set to “Yes”.
Sentences using TTS are spoken as if they are run together.	Verify that there is a space after the last character in a complete sentence on the lines within the Announce action. Refer to <i>CONVERSANT VIS 4.0 Text-to-Speech</i> , 585-350-807.
Fields using TTS are spoken as if they are run together.	Insert a silence phrase (<code>!si50</code>) at the beginning of a sentence to make it sound more natural.
Text that should be spoken in sentence format is being spelled.	1. Verify that the text that is being spelled is NOT in all capital letters. Text in all capital letters will be spelled. 2. Check all escape sequences for correctness.
SP card changes to BROKEN state after executing an application that uses Text-to-Speech.	1. Check the text that is being spoken in the application and ensure all escape sequences are being properly implemented. Refer to <i>CONVERSANT VIS 4.0 Text-to-Speech</i>, 585-350-807. 2. Ensure that escape sequences that are inserted within the text are adjacent to some text and not surrounded by space. 3. Diagnose the SP card via the “System Control” in Chapter 3, “Configuration Management,” of .

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TTS quits talking.	1. Make sure all escape sequences are utilized properly (especially the <code>!si</code> and <code>!sf</code> sequences). 2. Check that the amount of silence with the escape sequences are either greater than 0 or less than 100. For example, <code>!si100</code> will cause TTS to quit talking. Refer to , for information on the use of these instructions. 3. Make sure the text does not have considerable white space or commas in a row (,,,,).



Isolating Administrative Troubles

The following table contains troubles related to administrative tasks.

Table 2-13. Isolating Administrative Troubles

Trouble Indication	Corrective Action
UNIX commands failing or disk reported failures.	1. Enter display messages and check Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Boot off of the recovery floppy, delete out of the install, mount the hard disk, and run file system check. If errors are reported, reformat the hard disk and reload the software completely (see <i>CONVERSANT VIS 4.0 Software Installation</i>, 585-350-111).

Isolating Operational Troubles

The following table contains troubles related to operational tasks.

Table 2-14. Isolating Operational Troubles

Trouble Indication	Corrective Action
The monitor screen is blank, but the VIS is still taking calls.	1. Check the power on the VIS. If on, place a test call to the system. 2. Check the LED on the monitor. If on, check the contrast and brightness controls on the monitor. 3. Check the monitor connection to the VIS. 4. Unplug/plug in the monitor cable to the VIS. 5. Check the on/off switch on the monitor. 6. Log in remotely to check out the system and see if the VIS is taking calls. 7. If the problem persists, replace the monitor and or the video card.
When reading/writing files to a tape, the message I/O error on<read/write>(). error 5, I/O error is received.	Verify that there are no other circuit cards installed in the VIS that could interfere with the interrupt value, I/O address, or DMA channel used by the tape controller card. For example, there could be a possible conflict with the LAN card using the same DMA channel as the tape controller card causing this message to appear. The parameters for the tape controller card are as follows: Interrupt value: 5 or 7 I/O address: 288 DMA channel: 1 Refer to "Routine Maintenance" in Chapter 1, "Getting Started," for additional information about the cartridge tape drive and recommendations for its use.
LED on the MAP/100C power distribution panel indicates that the power supply fan is failing.	1. Check to see if the fan is running by placing your hand next to the power supply fan output. 2. If the fan is not running, replace the power supply. If the fan is running, you do not need to replace the power supply. Refer to "Installing the Power Supply Unit" in Appendix B, "MAP/100C Hardware Replacement" of this book for information on setting jumper JP1.

Isolating Other VIS Troubles

The following tables contain some general trouble areas that do not fall into the other classes listed above. Specifically, the troubles include:

- Adjunct/Switch Application Interface (ASAI) troubles
- Switching Control Center System (SCCS) and Alarm Relay Unit (ARU) troubles
- Call transferring troubles
- Performance-related troubles
- Speech-related troubles
- Diagnostic troubles
- Touch-tone input troubles
- Report troubles
- Channel state troubles

Some of these troubles have only one indication. To make it easier to locate the trouble, it has been placed in a table of its own.

Table 2-15. Isolating ASAI Troubles

Trouble Indication	Corrective Action
Script Builder fields within a script get overwritten.	Make sure all fields within the ASAI external actions are defined as the feature documentation states. If Script Builder must convert fields from one type to another (that is, char to num) sometimes fields do not contain the values expected.
VIS ACD Domain in netoos state.	Refer to , for a table listing all of the cause values and a brief explanation.

Table 2-16. Isolating SCCS/ARU Troubles

Trouble Indication	Corrective Action
ARU/SCCS hardware is not responding to alarms from the VIS.	1. Check the hardware/cabling connections. Refer to Chapter 4, "CONVERSANT VIS Connectivity," in , and the <i>CONVERSANT VIS CompuLert/SCSS</i>, 585-350-808. 2. Verify that the serial port on the eight-port asynchronous unit or the motherboard (tty00) is properly configured on the VIS. 3. Verify that the software is communicating with the ARU: a. Enter load_aru_b if the ARU is a J1P158B-1, without scan points or load_aru_c (if the ARU is a J1P158C-1, with scan points. As you enter this command, you should see one of the two LEDs on the front of the ARU flicker, and the word DOWNLOAD should flash on the display panel. These LEDs correspond to serial ports A & B on the ARU. b. If you did not see the LED flicker or DOWNLOAD displayed, try swapping the connection to the other serial port on the ARU and repeat the procedure. If you still fail to see the other LED flicker, this indicates a cabling/portconfig problem. If the 2nd port works and it has the same switch settings as the 1st, this may indicate a bad serial port on the ARU. 4. Verify that there are no other processes communicating with the TTY port assigned to the ARU. The getty for the TTY port used by the ARU should be initialized at the baud rate configured for the ARU. Once the getty has been initialized for that port it should be turned off. It will be turned off when the CompuLert/SCCS/ARU package is loaded. If not, manually turn off the getty process. Check all other processes, dips, etc. and ensure they are not attempting to send/retrieve data from that port.

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Table 2-16. Isolating SCCS/ARU Troubles — *Continued*

Trouble Indication	Corrective Action
Error message ERROR 03, ERROR 04, or ERROR 10 shows up on the ARU when the unit is powered-on or reset, or when receiving a message from the VIS.	1. Hold the Lk-Out and Reset keys in at the same time for approximately two seconds to verify that the BAUD rate of the ARU (according to switch settings on the back of the unit) for Port A match the BAUD rate of the TTY port used for communication. 2. Press Reset again to get back to the NORMAL mode. 3. Check the ARU Users Manual if changes to the DIP switch settings are necessary. If changes are made, the ARU must be reset or powered off/on for the new settings to take effect on the unit.
Error message ERROR 06, ERROR 07, or ERROR 11 shows up on the ARU when the unit is powered-on or reset, or when receiving a message from the VIS.	1. Hold the Lk-Out and Reset keys in at the same time for approximately two seconds to verify that the BAUD rate of the ARU (according to switch settings on the back of the unit) for Port B match the BAUD rate of the TTY port used for communication. 2. Press Reset again to get back to the NORMAL mode. 3. Check the ARU Users Manual if changes to the DIP switch settings are necessary. If changes are made, the ARU must be reset or powered off/on for the new settings to take effect on the unit.
The red LED for port A/B of the ARU stays on when it is connected to the VIS.	1. Perform the ` from "ARU/SCCS hardware is not responding to alarms from the VIS." 2. Check the behavior of the serial port with another device, like an asynchronous modem. If the port works fine with the modem then the port is probably fine, it just needs to be cabled and configured properly for the ARU.
Wrong priority (critical, major, informational) level is assigned for a particular message.	Enter the chg_alarm command to change the priority level for a particular message sent to the ARU.

Table 2-17. Isolating Call Transfer Troubles

Trouble Indication	Corrective Action
VIS not transferring calls properly.	1. Enter display messages to find a message similar to the trouble. If found, refer to Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Verify the values on the Switch Administration screen as described in Chapter 5, "Switch Interface Administration," of <i>CONVERSANT VIS 4.0 Operations</i>, 585-350-703. If this screen is changed: a. Save the values. b. Perform the "Stopping the Voice System" and "Starting the Voice System" procedures in Chapter 4, "Common Maintenance Procedures." c. Verify and reinstall the application to utilize the new values. Refer to Chapter 10, "Using Advanced Features," of <i>CONVERSANT VIS 4.0 Script Builder</i>, 585-350-704. 3. Try to transfer a call manually to determine whether transfers can be completed. An analog phone is needed for this test. Plug the line going into the VIS into this phone, and place the call to this phone. Answer and try to transfer to another extension. 4. Assign the feature test script to the channel and place test calls. 5. Enter trace tsm chan all trip tee /tmp/trace.out. 6. Check the logic of the application that is doing the transfer.
Direct agent calls do not work properly.	Make sure all fields within the ASAI external actions are defined as the feature documentation states. If Script Builder must convert fields from one type to another (that is, char to num) sometimes fields do not contain the values expected. For a direct agent call to be successful, the Split Extension field must contain the number identifying a valid ACD split. If the field is corrupted the direct agent call will not work.

Table 2-18. Isolating Performance Troubles

Trouble Indication	Corrective Action
System is slow or delayed in speaking.	1. Perform the "Reducing Load" procedure in Chapter 4, "Common Maintenance Procedures."
System performance is degraded (for example, speech breaks are occurring, bad response time to commands, etc).	1. Make sure the value for the Cache Controller is "Enable" in the CPU CMOS SETUP screen. It is highly unlikely that this is the root cause of degraded system performance and the system must be powered down and rebooted to check this screen. Refer to "Accessing the Setup Screen" in Chapter 3, "Connecting Peripherals and Powering Up," of the hardware installation book for your platform. 2. Perform the "Reducing Load" procedure in Chapter 4, "Common Maintenance Procedures."

Table 2-19. Isolating Speech Troubles

Trouble Indication	Corrective Action
Speech stops on the first key-word.	1. Enter display messages for a message similar to the trouble. Then, refer to Chapter 3, "System Message Listings" for the appropriate repair procedure. 2. Determine if barge-in is enabled for this prompt by checking the Announce or Prompt and Collect actions. There may be a touch tone simulation in the prompt. Disable the prompt if enabled to see if it plays.
A corrupted speech phrase is heard.	When rerecording an active speech phrase, first record the speech into a temporary speech buffer, then copy the phrase into the active phrase.
Clicking heard on line.	1. If the lines are connected to PBX and T/R lines, verify that the lines are configured on the PBX as ECTS (electronic custom telephone service) and <i>not</i> POTS (plain old telephone service). 2. Check the outgoing and incoming volume parameters as described in Chapter 5, "Switch Interface Administration," of <i>CONVERSANT VIS 4.0 Operations</i>, 585-350-703. For T1 cards, defaults are ovol=ivol=1414. For T/R cards, defaults are ovol=1000 andivol=2000. Rerecord speech if volume levels were too high. 3. Perform the Checking a Card procedure, if necessary. 4. If other lines are available on system, connect those to the card exhibiting the noisy/clicking conditions. If the problem goes away, the lines may be bad. If the problem persists, enter diagnose card <card number>. If the card passes and the problem persists, replace the card.

Table 2-20. Isolating Diagnostics Troubles

Trouble Indication	Corrective Action
Card diagnostics failed.	Perform the "Checking a Card" procedure in Chapter 4, "Common Maintenance Procedures."

Table 2-21. Isolating Touch-Tone Input Troubles

Trouble Indication	Corrective Action
User touch-tone input is not being correctly interpreted by the system.	1. Verify the Prompt and Collect action matches the intended use in the script. 2. If this is channel-related (that is, the trouble only appears on a particular channel) and you have another card, see if the trouble occurs on another card. If not, replace the original card.

Table 2-22. Isolating Report Troubles

Trouble Indication	Corrective Action
Call data reports are not accurate or they are not complete.	1. Enter dbfrag to determine if there is any additional free space in the database. 2. Enter display messages to find messages related to the trouble. If found, refer to Chapter 3, "System Message Listings" for the appropriate repair procedure. If you are losing call data reports, you may need to increase the call holding time defined in the script.

Table 2-23. Isolating Channel/Card State Troubles

Trouble Indication	Corrective Action
Channel/card is in state Hwoos or Netoos.	Determine the type of channel by typing display channel <channel number> a. If the outcome shows PRIB or PRID, refer to the "Checking the PRI Channel" tables in the <i>CONVERSANT VIS Primary Rate Interface</i>, 585-350-805 . b. If the maintenance state is displayed by looking at the Channel Administration screen under the ASAI Feature Packages, refer to the ASAI troubleshooting section in the <i>CONVERSANT VIS Adjunct/Switch Application Interface</i>, 585-350-812 .
Channel/card is in state Manoos.	Enter restore [channel/card] [channel/card #] to restore the channel or card. Refer to the <i>CONVERSANT VIS 4.0 Command Reference</i>, 585-350-209.
Channel/card is in state Foos.	Type display channel <channel number> If T1.5, PRIB, or PRID is displayed, check the error log for a message in the range TWIP013–TWIP018. Follow the recommended repair procedure for that message. If VRS6, IVP4, or IVP6 is displayed: a. Enter diagnose card <card number>. b. If the channel remains Foos, check the phone connection to the card.
Channel/card is in state Broken.	Follow the repair procedure for message MTC003 provided in Chapter 3, "System Message Listings". If the card is an SP card, perform the "Checking the TDM Bus" procedure in Chapter 4, "Common Maintenance Procedures," as well.

What's in This Chapter

System messages alert you to problems, potential problems, or a change in the state of the system. These messages are collected in the Message Log Report screen as described in Chapter 5, "Reports Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.

Refer to this chapter to determine the action you should take regarding these system-reported troubles. If a repair procedure for the message does not effectively correct the problem experienced, escalate the problem to the next level of support.

Categorizing System Messages

System messages are divided into two major groups: alarms and events.

Alarms

Alarms messages are divided into three categories based on the urgency of the actions: critical, major, and minor.

Critical

Critical messages are denoted by *C preceding the message. Messages in this category have the following system characteristics:

- The voice system is completely inoperable (for example, it is unable to send/receive interprocess communication [IPC] messages).
- There is permanent customer-visible impact on an active application (for example, the speech file system is corrupted).
- Immediate action is required to correct the situation (for example, all signal processing (SP) cards are out of service).
- All applications are prevented from operating properly (for example, TSM is respawning).

Major

Major alarms are denoted by ** preceding the message. Messages in this category have the following system characteristics:

- The system has experienced visible customer impact on an active application (for example, corrupted speech phrase). If the problem persists, escalate it to critical using the message thresholding capability as described in Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.
- System services are degraded, but the system software cannot clearly determine if an application has been impacted (for example, a card state changes from INSERT to any state except MANOOS). These problems do not necessarily require immediate attention, but action must be taken relatively soon to correct the situation.
- The system has experienced temporary overload conditions (for example, a bridge failure occurs because all channels are busy, which causes speech breaks).
- There is permanent impact on the voice system and/or an application, if it happens persistently (for example, UNIX panics). In this case, escalate the problem to critical by creating a new message. Refer to Chapter 6,

“Adding and Modifying System Messages,” of *CONVERSANT VIS 4.0 Application Development*, 585-350-208, for information on creating new messages.

Minor

Minor messages are denoted by * preceding the message. Messages in this category have the following system characteristics:

- There is no visible customer impact.
- Manual action is not required (that is, the system can recover automatically).

Events

Events messages do not have anything preceding the message. Messages in this category have the following system characteristics:

- These can be non-error messages that require no action.
- These can be system history messages.
- The following are examples of events:
 - A state change, such as any state to MANOOS, MANOOS to any state, and any state to INSERV, occurred.
 - The state of host sessions, host cards, or the Adjunct/Switch Application Interface (A/SAI) link changed.
 - Diagnostics started and ended on a card.
 - The script started and ended specifying the channel, dialed number identification service (DNIS), and script name.
 - A script was assigned or unassigned to a channel, DNIS, and script name.

Determining System Message Priority

Perhaps the most difficult area in determining message urgency exists between a critical and a major message. A message may be critical only if it appears numerous times. For example, TSM may not be able to start playback because it cannot get SP resources. This problem should be reported as major because it may mean an occasional system overload.

If the problem persists and exceeds a predefined number of occurrences within a predefined time, it should be escalated to critical because it may mean long-term overload or a poorly engineered system requiring manual administration (for example, another board may need to be added to the system). On the other hand, if the playback cannot be started during an active application because all SPs are out of service, the problem is critical because it can only be resolved by manual intervention.

NOTE:

The message priorities listed in this chapter are those determined appropriate at the time of the software delivery. For information on modifying message priority, refer to Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.

Description and Effect Statements

Each alarm message (critical, major, and minor) has a description and effect statement. This statement describes the impact of the alarm on the system in terms of application functionality, and includes the effect of the alarm on the system or the phases of operation during which the alarm might be reported (for example, initialization, call processing, installation, administration, etc). Description and effect statements for events describe the situation and the possible cause for the occurrence of the message.

Repair Procedures

A step-by-step repair procedure is provided for all alarm messages (critical, major, and minor) to correct the problem experienced. Many repair procedures require you to perform one or more general "mini" procedures, such as stopping and restarting the voice system. In these cases, the general procedures themselves are not given in this chapter. Rather, you are referred to Chapter 4, "Common Maintenance Procedures" in this book, where step-by-step instructions for performing these general procedures are provided.

Conventions

Below are the conventions used in the repair procedure for each message:

- If a repair procedure includes steps that must be followed only if the previous step failed to resolve the problem, the following convention is used, where *N* is the step number:

N	Required step
[N+1]	Optional step if step <i>N</i> did not work
[N+2]	Optional step if step <i>N+1</i> did not work
N+3	Required step

The following is an example of the required/optional notation, which shows the optional step or steps enclosed in square brackets ([]).

1. Perform the "Stopping the Voice System" procedure.
2. Perform the "Starting the Voice System" procedure.
- [3.] If the problem persists, perform the "Rebooting the UNIX System" procedure.

In this example, you have completed the repair procedure for this message with the completion of Step 1 and Step 2 unless you continue to observe the same message. At this point, you should proceed to Step [3] and reboot the UNIX system.

- If a repair procedure contains an if/then/else statement, the following convention is used, where *N* is the step number:

N	Step number
[a]	If this, do this
[b]	Else do this

The following is an example of the if/then/else notation.

1. Edit the **vs/data/irAPI.rc** file.
 - [a.] If the VCHANS=32 entry exists, change the number **32** to **40**.
 - [b.] If the VCHANS=32 entry does not exist, add the line
VCHANS=32

In this example, you are instructed to edit a file. What changes you make depends on an entry that may or may not exist in the file. Your action is based on what is found in the file (that is, whether you perform Step [a] or Step [b]).

For Application Developer

A “For Application Developer” section appears as part of many of the repair procedures. This section is for those that develop applications for the VIS using Script Builder, TSM script-level language, and/or C language. This section provides detailed information about aspects of the application that may be causing the alarm to be generated. The information in this section assumes that the audience is familiar with the *CONVERSANT VIS 4.0 Application Development*, 585-350-208, and the *CONVERSANT VIS 4.0 Script Builder*, 585-350-704.

System Message Format

The following is the format of a system message:

```
PR DAY MON DD HH:MM:SS ZZZ YYYY SOURCE TTTTTTTT YY UU NUM TEXT
```

Table 3-1 details the field explanations for the system message format as they appear in the Message Log Report. In this chapter, variable fields (denoted in the table with three asterisks [***]) are not provided with each individual message. This information includes the time the message occurred and the source of the message.

The priority (PR) of the message appears first on the top line in the Message Log Report. In the system message listings provided in this chapter, the priority is displayed before the message identification (ID) tag (for example, *C CGEN003).

Table 3-1. System Message Display Format Explanations

Field	Meaning	Examples
PR	Priority or severity level of the message	*C Critical ** Major * Minor (none) Event
***DAY	Day of the week the message occurred	Sun, Mon
***MON DD	Day and month the message occurred	Jan 1, Dec 31
***HH:MM:SS	Time of day in hours, minutes, and seconds when message occurred	00:00:00, 11:59:59
***ZZZ	Time zone	EST, EDT

Continued on next page

Table 3-1. System Message Display Format Explanations — Continued

Field	Meaning	Examples
***YYYY	Year	1993, 1994
***SOURCE	Source or process from which the message originated	TSM, TWIP
TTTTTTTT	Eight-character message ID (tag) that identifies the process to which the message is associated	TSM008, TWIP004
YY	Field replaceable unit (FRU); usually the type of card to which the message is related	TR, T1, , SP, CMP (if this field is not applicable to the message, "--" is displayed)
UU	Unit type	CA (card), CH (channel) (if this field is not applicable to the message, "--" is displayed)
NUM	Unit number	000 to 999 (if this field is not applicable to the message, "---" is displayed)
TEXT	Message text	Varies with the message

System Message IDs

The system messages in this chapter are divided into subgroups according to the message ID classes. Table 3-2 shows a list of these subgroups.

NOTE:

AUDIX Voice Power messages use the range 5000 to 5500 for message numbers. For more information on AUDIX Voice Power 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 through 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.

Table 3-2. System Message Subgroups

Subgroup	Description
ALERT	VIS Alerter process
ASAI	Adjunct/Switch Application Interface
BRDG	Call bridging process
CGEN	Voice system general
DB	Database
DBC	Database checking process
ET	Error tracker interface
EXTA	External alarms feature
FFE	Form Filler Plus feature
FTS	Enhanced File Transfer process
GEN	PRISM logger and alerter general
HOST	Host interface
ICK	Integrity checking process
INIT	Voice system initialization
LOG	VIS Logger process
MTC	Maintenance process
RECOG	Speech recognition feature (WholeWord and FlexWord)
SCCS	Switching Control Center System
SP	Signal processing (SP) functionality
SPIP	Signal processing (SP) interface process
SYS	UNIX system calls
TRIP	Tip/ring interface process
TSM	Transaction state machine process
TTS	Text-to-Speech feature
TWIP	T1 or interface process
UNIX	UNIX kernel
VROP	Voice response output process

System Message Variable Fields

Table 3-3 details the variable fields used within the messages. These representations are used to indicate that the value of this field varies according to the message. For example, the variable field *<equip #>* that appears in the message text is a three-digit string representing the channel or card number to which the message is related.

Table 3-3. System Message Variable Fields

Variable Field	Description
<action>	A string describing the function being performed or to be performed
<appl>	The application name
<bpv>	Bipolar violations
<ca/ch>	A string that represents the equipment type, either CA for card or CH for channel
<contents>	An integer that identifies the content of the UNIX system message
<ct>	The card or channel type (TR, SP, or T1)
<domain>	A string that represents the domain name
<ecode>	An integer error code
<equip #>	A three-digit string that represents the channel or card number
<filename>	A string that represents a file
<interval>	The time period during which the action or alarm occurred
<length>	The length of the message, time elapsed, etc.
<linkNum>	The host link number (0 or 1)
<num>	An integer
<process>	The name of the process that was the intended recipient or sender of the message
<reason>	A string that briefly explains the problem
<scName>	The host screen name
<script>	The name of the script or application
<SNum>	The host session number
<string>	Any text string
<tblname>	The system database table name
<timeslot>	The timeslot
<UNIX errno>	A string that corresponds to the UNIX system error number or mnemonic

Old Messages Mapping to New Messages

The following list maps pre-Version 3.1 VIS messages to the current Version 4.0 messages. Included are those messages that were used prior to Version 3.1. Not all the new messages are listed in this table. Refer to "System Message Listings" in this chapter for a complete list of the messages in the Version 4.0 system.

108 SPP_NOSAVE	CGEN017
109 VROP_GSEMA	VROP001
110 VROP_LSEMA	VROP001
401 TSM_RCV	CGEN004
402 TSM_SND	CGEN005
403 TSM_ASS	CGEN002, TSM001
404 TSM_TRAN	TSM002
405 TSM_NOSLOT	Eliminated
406 TSM_NOSCRPT	TSM002
407 TSM_BADSCRPT	TSM002
408 TSM_SCRD	TSM002
409 TSM_MTSCRPT	TSM002
410 TSM_SHMFAIL	CGEN002
411 TSM_PC_FAIL	Eliminated
412 TSM_TSTART	Eliminated; use TSM001, TSM002, TSM005
413 TSM_NO_SCPT_P	Eliminated
414 TSM_SEP_READ	Eliminated
415 TSM_INIT_FAIL	CGEN006
416 TSM_INVLD_MSG	CGEN001
417 TSM_NOSPACE	CGEN007
418 TSM_TR_CMD	CGEN008, CGEN011, CGEN012
419 TSM_SP_CMD	CGEN009, CGEN013, CGEN014
420 TSM_T1_CMD	CGEN010, CGEN015, CGEN016
421 TSM_SPOVERLD	TSM003
422 TSM_SP_UNAVAIL	TSM004
545 VROP_TOO_SHORT	Eliminated
546 VROP_FS_RDONLY	VROP002
547 VROP_NORESUME	Eliminated
548 VROP_NOSPBUF	VROP003

550 VROP_BADACT	VROP004
551 VROP_LRULIST	Eliminated
552 VROP_SBM_ERR	Eliminated
553 VROP_USAGE_CNT	VROP005
571 VROP_CONFIG	VROP006, VROP008
572 VROP_HWERR	CGEN014, CGEN018, CGEN012, CGEN017
573 VROP_NOSPACE	VROP007
574 VROP_BADFS	VROP008
575 VROP_UNIXFIO	VROP015
577 VROP_NONEX	VROP009
578 VROP_SHMERR	CGEN006
579 VROP_MSGERR	CGEN004, CGEN005
580 VROP_UNIXOPEN	VROP015
581 VROP_TIMEOUT	VROP019
582 VROP_NOACT	VROP010
583 VROP_BADTAG	VROP017
584 VROP_NOSPCHBLK	VROP011
585 VROP_BADCODE	CGEN006, VROP005, VROP006, VROP014, VROP017, VROP018,
586 VROP_BADPHR	VROP016
588 VROP_NOTIMELIST	Eliminated
589 VROP_NODIRSLT	VROP012
590 VROP_BADFREE	VROP005
591 VROP_PLAY_TMOUT	VROP013
592 VROP_CODE_TMOUT	VROP014
593 VROP_FS_OPEN	VROP014
594 VROP_FSIO	VROP014
595 VROP_BADCMD	Eliminated
596 VROP_DIORESPAWN	Eliminated
597 VROP_TROPEN	CGEN008
598 VROP_SPOPEN	CGEN009
599 VROP_SPATTACH	CGEN009
601 SHMEM_SHOW	Eliminated
602 READ_DB	Eliminated
603 ET_ATT	Eliminated
604 ET_BAD_MSG	Eliminated
605 ET_CKSHMEM	Eliminated

606 ET_ESLOT	Eliminated
607 ET_MSGRCV	Eliminated
608 ET_MSGSND	Eliminated
609 ET_NO_ATT	Eliminated
610 ET_NOQ	Eliminated
611 ET_NORULES	Eliminated
612 ET_NOSHMEN	Eliminated
613 ET_NO_VAR	Eliminated
614 ET_REBOOT	Eliminated
615 ET_RESTART	Eliminated
616 ET_SHMIT	Eliminated
617 ET_SHOWER	Eliminated
618 ET_VAR	Eliminated
619 ET_SHOT	Eliminated
620 ET_DEBUG	Eliminated
621 ET_FLOOD	Eliminated
622 ET_URS	Eliminated
623 ET_URB	Eliminated
624 ET_WIPE	Eliminated
625 ET_MISS	Eliminated
626 ET_STUCK	Eliminated
627 ET_BAD_ARGS	Eliminated
628 ET_NEW_PID	Eliminated
651 ET_DYKE	Eliminated
652 ET_NEWS	Eliminated
653 ET_PRIORITY	Eliminated
654 ET_SUMSHOW	Eliminated
655 ET_SUMTIME	Eliminated
700 STA_CHAN	MTC003
701 STA_CARD	MTC002
710 INV_RQST	Eliminated
711 INV_TSMR	Eliminated
712 INV_MESG	Eliminated
714 RCVE_MSG	Eliminated
715 SEND_MSG	Eliminated
716 UNK_TYPE	CGEN002
717 SYS_FAIL	CGEN012, CGEN014, CGEN016

718 NO_CLOCK	MTC001
722 GET_SEMA	CGEN006
723 SET_SEMA	CGEN006
724 SHM_FAIL	CGEN002
725 SHM_INVLD	CGEN002
726 OPN_FAIL	CGEN008
727 CIR_SEMA	CGEN006
740 DG_START	MTC004
741 DG_RESLT	MTC006
742 DG_PASSD	MTC005
750 DB_FAILED	MTC006
760 PRI_TDM	Eliminated
800 CDH_NOT_RCV	DB016
801 CDH_BAD_MSG	Eliminated
802 CDH_NO_WRITE	DB001
803 CDH_START	DB009
804 CDH_CDH_SUM	DB001, DB009, DB011
805 CDH_CDH_DEL	DB005, DB009, DB011
806 CDH_CCA_SUM	DB001, DB009, DB011
807 CDH_CCA_DEL	DB005, DB009, DB011
808 CDH_NO_SPACE	DB007
1300 VS_BUG	Eliminated
1301 SCRIPT_ERR	Eliminated
1302 HOST_ERR	Eliminated
1303 HOST_STAT	Eliminated
1310 DIP_TIMEOUT	HOST001
1311 DIP_UNRECSCRN	HOST002
1312 DIP_RESET	HOST003, HOST004
1313 DIP_NOPOLL	HOST005
1314 DIP_LINKDOWN	HOST006
1315 DIP_FIELD	HOST007
1316 DIP_WRONGSCR	HOST007
1317 DIP_OUTOFSYNC	HOST008
1318 DIP_BADMSG	CGEN001
1319 DIP_SND	CGEN005, BRDG002
1320 DIP_RCV	CGEN005, BRDG001
1321 DIP_COMPILE	HOST009, HOST010

1322 DIP_MALLOC	CGEN007, BRDG004
1323 DIP_HYBER	HOST015
1324 DIP_HELPTO	HOST011
1325 DIP_NOLU	HOST012
1326 DIP_BOARD	HOST004
1327 DIP_INIT	Eliminated
1328 HOST_PROBLEM	Eliminated
1329 DIP_SHM	CGEN007
1330 DIP_HOSTDOWN	HOST013
1331 DIP_HOSTUP	HOST014
1335 A_LINKDOWN	ASAI001, ASAI002, ASAI003, ASAI004, ASAI005, ASAI006, ASAI007
1336 A_DSCRIPT_TERM	ASAI008
1337 A_LOGIN_FAIL	ASAI009, ASAI010, ASAI011, ASAI012, ASAI013, ASAI014, ASAI015, ASAI016
1338 A_ENREQ_FAIL	ASAI017, ASAI018, ASAI019, ASAI020, ASAI021, ASAI022, ASAI023, ASAI024
1339 A_RESTART	ASAI025
1340 A_NO_EVRP	ASAI026
1341 A_PROT_ERR	ASAI027
1342 A_LOGIN_OK	ASAI028
1343 A_ENREQ_OK	ASAI029
1344 A_UNK_EVENT	ASAI030, ASAI031
1345 RECDIP_ERROR	RECOG001, RECOG002, RECOG003
1350 LDB_BADTBL	DB002, DBOO4, DBOO6
1351 LDB_INIT	DB010, CGEN005, CGEN006
1352 LDB_ERROR	DB002, DB004, DB006, DB011, CGEN004, CGEN006, CGEN007
1353 LDB_NOSPACE	DB008
1354 LDB_LOSTORA	DB013
1355 LDB_TIMEOUT	DB014
1356 LDB_TIMEOUT2	DB015
1360 TTS_BAD_ARG	TTS001
1361 TTS_BADFILE	TTS002
1600 FFE_DIPFAIL	FFE001, FFE002, FFE002, FFE004, FFE007, FFE008
1601 FFE_SYSERR	FFE003, FFE006, FFE009
1602 FFE_UNEXPMSG	Eliminated

1603 FFE_REQERR	Eliminated
1604 FFE_INVALID	FFE005
1605 FFE_DBERR	FFE004
1701 NO_DBFILE	INIT001
1702 NO_BOARD	INIT002
1703 NEW_BOARD	INIT003
1704 CLEANUP	INIT004
1705 DBIN_FAIL	CGEN002
1706 CANT_SAVE	INIT005
1707 NO_DRIVER	CGEN008, CGEN009, CGEN010
1708 CANT_OPEN	Eliminated
1709 DBIN_BBLOCK	CGEN002
1710 DBIN_BBSHM	CGEN002
2000 TRIP_OPEN	CGEN008
2001 TRIP_DTBL	CGEN002
2002 TRIP_EVNT	TRIP001
2003 TRIP_PRTY	TRIP002
2004 TRIP_OVFL	TRIP003
2005 TRIP_SBRK	TRIP004
2006 TRIP_SOPEN	Eliminated
2007 TRIP_SPATTACH	CGEN009
2009 TRIP_CLIP	Eliminated
2100 TWIP_OPEN	CGEN010
2101 TWIP_DTBL	CGEN002
2102 TWIP_SOPEN	CGEN009
2103 TWIP_SPATTACH	Eliminated
2104 TWIP_CHERR	TWIP001, TWIP002, TWIP003, TWIP004, TWIP005, TWIP006, TWIP007
2105 TWIP_EVNT	TWIP008
2106 TWIP_BDERR	TWIP009, TWIP010, TWIP011
2107 TWIP_OVFL	TWIP012
2108 TWIP_T1FLR	TWIP013, TWIP014, TWIP015, TWIP016, TWIP017, TWIP018
2109 TWIP_T1RST	TWIP019
2110 TWIP_PARITY	Eliminated
2111 TWIP_INFO	TWIP020, TWIP021
2112 TWIP_PANIC	TWIP022

2200 SPIP_OPEN	CGEN009
2201 SPIP_DTBL	CGEN002, SPIP005
2202 SPIP_REST	CGEN013
2203 SPIP_ERROR	Eliminated
2204 SPIP_SBRK	SPIP001
2205 SPIP_CLIP	SPIP002
2206 SPIP_TOOBUSY	Eliminated
2207 SPIP_TDMOVFL	Eliminated
2208 SPIP_BUF0VFL	Eliminated
2209 SPIP_CMP_SOFT	SPIP003
2210 SPIP_CMP_HARD	SPIP004

Using the Explain Command

An **EXPLAIN** command is available for you to use to determine the impact of the specified system message. This command uses the message number to provide you with information about how to respond to the system message. The information that appears when **EXPLAIN** is used matches the description and effect statements for each message in this chapter. Follow the steps below to use the **EXPLAIN** command.

1. From the Voice System Administration screen, select Reports.
2. From the Reports Administration screen, select System Reports.
3. From the System Reports screen, select Message Log Report.
4. Press **F8** (CHG-KEYS).
5. Press **F3** (EXPLAIN).

The Explain screen appears, prompting you to enter the alphanumeric message identification (ID) tag of the message for which you are requesting information.

6. Enter the message ID, then press **F3** (SAVE).

A brief description of the problem and the impact of the message on the system is displayed.

7. Press **F5** (CANCEL) to return to the Explain screen.
8. Press **F5** (CANCEL) again to return to the Message Log Report screen.

System Message Listings

The system messages are arranged in alphanumeric order by message identification number (message ID). Each message appears in this book in constant width type. Following each message is the message priority, a description and effect statement, and the recommended corrective action (repair procedure). The same description and effect statement appears when using the System Message Administration window. If no repair procedure is provided, the message is either informational, or the problem is corrected automatically by the system and does not require you to perform any corrective action.

If a repair procedure requires you to shut down, restart, diagnose the system, etc., refer to Chapter 4, "Common Maintenance Procedures" in this book for additional information on the procedure. If a repair procedure for the message does not effectively correct the problem experienced, escalate the problem to the next level of support. Refer to "Escalation Strategy" in Chapter 1, "Getting Started" in this book.

ALERT System Messages

ALERT001 -- -- --- Threshold <name> <direction> from level
<oldlevel> to level <new level>

■ Message priority:

None.

■ Description and effect:

This message informs of a threshold level change for the indicated message.

The action taken by the Alerter when a threshold change for a message occurs is defined with the System Messages Administration window under "Configuration Management" in the Voice System Administration menu.

■ Repair procedure:

No corrective action is necessary.

ALERT002 -- -- --- Alerter statistics reset.

■ Message priority:

None.

■ Description and effect:

The Alerter has received a command to reset its statistics.

■ Repair procedure:

No corrective action is necessary.

ALERT003 -- -- --- Invalid alerter threshold: <name>

■ Message priority:

None.

■ Description and effect:

The VIS Alerter has received a command to print or reset an invalid threshold. An invalid threshold was entered by a user at the Alerter command interface.

■ Repair procedure:

No corrective action is necessary.

ALERT004 -- -- --- Attempt to convert <file> to thresholds failed.

■ Message priority:

None.

■ Description and effect:

The Alerter has failed to convert the indicated threshold rules file to alerter thresholds for VIS messages. Thresholding for VIS messages will not function. If no thresholds were specified, this message may be ignored.

■ Repair procedure:

Restore the threshold rules file indicated in the message from a system backup. If no valid backup copy exists, perform the "Reinstalling the CONVERSANT Application Software Package" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

ALERT005 -- -- --- <additions> thresholds created from the threshold rules contained in <file>.

■ Message priority:

None.

■ Description and effect:

The Alerter has created the indicated number of message thresholds from the threshold rules file.

■ Repair procedure:

No corrective action is necessary.

ALERT006 -- -- --- <additions> added, <deleted> deleted, and <altered> altered by new threshold rules contained in <file>.

■ Message priority:

None.

■ Description and effect:

The Alerter has updated message thresholds from the threshold rules file.

■ Repair procedure:

No corrective action is necessary.

ALERT007 -- -- --- <cmd>

■ Message priority:

None.

■ Description and effect:

The Alerter has received the command indicated by this message.

■ Repair procedure:

No corrective action is necessary.

ASAI System Messages

*C ASAI001 -- -- --- ASAI link failure detected.
Reason: ASAI Physical Link Down.

■ Message priority:

Critical (*C).

■ Description and effect:

The ASAI physical link has gone down. All ASAI-provided services will not function until the link has been re-established.

■ Repair procedure:

1. If message ASAI025 follows this message, no corrective action is necessary.

[2.] Check the ASAI link wiring between the VIS and the PBX for proper connection. Refer to Chapter 3, "ASAI Installation, of *CONVERSANT VIS Adjunct/Switch Application Interface*, 585-350-812, for link wiring information.

[3.] Diagnose the IPCI board. Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS Adjunct/Switch Application Interface*, 585-350-812, for IPCI board diagnostic information.

*C ASAI002 -- -- --- ASAI link taken failure detected.
Reason: ASAI Link Layer Down.

■ Message priority:

Critical (*C)

■ Description and effect:

The ASAI physical link is up, but the link layer has gone down. All ASAI-provided services will not function until the link has been re-established.

■ Repair Procedure:

1. If message ASAI025 follows this message, no corrective action is necessary.

[2.] Consult your PBX administrator to check that the ASAI port on PBX has been administered with Fixed TEI=y and TEI=3.

[3.] Diagnose the IPCI board. Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for IPCI board diagnostic information.

- * ASAI003 -- -- --- ASAI link failure detected.
Reason: IPCI Board is in initialization state.
- Message priority:
Minor (*).
 - Description and effect:
The IPCI board is in the process of initialization. This should be a temporary state. All ASAI-provided services will not function until the link has been established.
 - Repair procedure:
 1. If message ASAI025 follows this message, no corrective action is necessary.
 - [2.] Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions to perform the following steps:
 - a. Take the IPCI card offline.
 - b. Initialize the IPCI card.
- * ASAI004 -- -- --- ASAI link failure detected.
Reason: IPCI Board is attempting to go offline.
- Message priority:
Minor (*).
 - Description and effect:
The IPCI board is attempting to go offline. This should be a temporary state. All ASAI-provided services will not function until the link has been re-established.
 - Repair procedure:
 1. If message ASAI025 follows this message, no corrective action is necessary.
 - [2.] Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions to perform the following steps:
 - a. Take the IPCI card offline.
 - b. Initialize the IPCI card.

*C ASAI005 -- -- --- ASAI link failure detected.

Reason: IPCI Board is in an unknown state.

■ Message priority:

Critical (*C).

■ Description and effect:

The IPCI board is in an unknown state. It is either nonexistent or malfunctioning. All ASAI-provided services will not function until the link has been established or re-established.

■ Repair procedure:

1. If message ASAI025 follows this message, no corrective action is necessary.
2. If the IPCI card is installed, refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions to perform the following steps:
 - a. Take the IPCI card offline.
 - b. Initialize the IPCI card.
 - c. Diagnose the IPCI card.
3. If the IPCI card is not installed, refer to Chapter 3, "ASAI Installation," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812 for instructions to install the IPCI card.

ASAI006 -- -- --- ASAI link should be up.

■ Message priority:

None.

■ Description and effect:

ASAI link should be up and running.

■ Repair procedure:

No corrective action is necessary.

ASAI007 -- -- --- ASAI link failure detected.
Reason: Link has been taken offline.

- Message priority:
None.
- Description and effect:
The ASAI link has been taken offline. All ASAI-provided services will not function until the link is reinitialized.
- Repair procedure:
Initialize the IPCI card. Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions to initialize the IPCI card.

** ASAI008 VT CH <equip #> ASAI data-only application
'<appl>' on domain '<domain>' terminated.

- Message priority:
Major (**).
- Description and effect:
The data-only script running on the specified virtual channel has stopped abruptly. This may indicate a problem with the service assigned to the domain. All ASAI messages relating to that domain are lost.
- Repair procedure:
No immediate action is necessary as the script will restart automatically. To check if the script restarted, refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812.
- For application developer:
Make sure the script assigned to the specified domain does not quit or exit. The script should be running continuously.

** ASAI009 <ct> CH <equip #> Unable to login ASAI channel.
Reason: No VIS domain.

■ Message priority:

Major (**).

■ Description and effect:

The VIS agent on the specified channel could not be logged in. As a result, the ACD will not route calls to this channel.

The ACD domain corresponding to the VIS agents is not administered.

■ Repair procedure:

1. If message ASAI028 follows this message for the same channel, no corrective action is necessary.

[2.] Administer the T/R ACD split on the VIS. Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions to perform the following steps:

- a. Add a domain entry with type "ACD" and service "VIS."
- b. Enable the domain.

** ASAI010 <ct> CH <equip #> Channel login rejected by PBX.
Reason: Incorrect Extension to Channel assignment.

■ Message priority:

Major (**).

■ Description and effect:

The VIS agent on the specified channel could not be logged in. As a result, the ACD will not route calls to this channel.

The extension assigned to the channel on the VIS is incorrect.

■ Repair procedure:

1. Correct the extension assigned to the specified channel. Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions on changing the channel-to-extension assignment.

[2.] Consult your PBX administrator to verify that the channel extension is a member of the ACD split.

** ASAI011 <ct> CH <equip #> Channel login rejected by PBX.
Reason: Lack of PBX resources.

- Message priority:
Major (**).
- Description and effect:
The VIS agent on the specified channel could not be logged in. As a result, the ACD will not route calls to this channel.

The login request cannot be executed due to lack of switch resources.
- Repair procedure:
If message ASAI028 follows this message for the same channel, no corrective action is necessary. Otherwise, consult your PBX administrator.

** ASAI012 <ct> CH <equip #> Channel login rejected by PBX.
Reason: Channel not member of TR ACD Split.

- Message priority:
Major (**)
- Description and effect:
The VIS agent on the specified channel could not be logged in. As a result, the ACD will not route calls to this channel.

The extension assigned to specified channel on the VIS is not a member of the T/R ACD split.
- Repair procedure:
Consult your PBX administrator to add the extension to the ACD split.

** ASAI013 <ct> CH <equip #> Channel login rejected by PBX.
Reason: Channel is currently busy.

■ Message priority:

Major (**).

■ Description and effect:

The VIS agent on the specified channel could not be logged in. As a result, the ACD will not route calls to this channel.

The specified extension currently has an active call.

■ Repair procedure:

1. If message ASAI028 follows this message for the same channel, no corrective action is necessary.

[2.] Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions to perform the following steps:

- a. Log out the channel.
- b. Retry the login request later.

** ASAI014 <ct> CH <equip #> Channel login rejected by PBX.
Reason: Unable to login as autoavailable split.

■ Message priority:

Major (**).

■ Description and effect:

The VIS agent on the specified channel could not be logged in. As a result, the ACD will not route calls to this channel.

The T/R ACD split is not administered correctly. A request has been denied by the switch to log in a member of the autoavailable split.

■ Repair procedure:

If message ASAI028 follows this message for the same channel, no corrective action is necessary. Otherwise, consult your PBX administrator.

*C ASAI015 <ct> CH <equip #> Channel login rejected by PBX.
Reason: Switching equipment congestion exists.

■ Message priority:

Critical (*C).

■ Description and effect:

The VIS agent on the specified channel could not be logged in. As a result, the ACD will not route calls to this channel.

Switching equipment congestion exists. The switch is not accepting the request at this time because of processor overload.

■ Repair procedure:

1. If message ASAI028 follows this message for the same channel, no corrective action is necessary.

[2.] Suggest that the adjunct or user retry the request later.

[3.] If the problem persists, consult your PBX administrator.

** ASAI016 <ct> CH <equip #> Channel login rejected by PBX.
Reason: Unknown Error (Cause <errno>).

■ Message priority:

Major (**).

■ Description and effect:

The VIS agent on the specified channel could not be logged in due to an unknown error. As a result, the ACD will not route calls to this channel.

■ Repair procedure:

If message ASAI028 follows this message for the same channel, no corrective action is necessary. Refer to "Isolating ASAI Troubles" in Chapter 2, "Trouble and Failure Indications" of this book to determine the cause of the failure.

*C ASAI017 -- -- --- Unable to activate ASAI Domain
'<domain>'. Reason: All virtual channels busy.

■ Message priority:

Critical (*C).

■ Description and effect:

The ASAI domain with the specified extension cannot be activated. Information about the call placed to this domain will not be reported to the service assigned to this domain.

Either the virtual channels are unavailable or they are all busy.

■ Repair procedure:

1. If message ASAI029 follows this message for the same domain, no corrective action is necessary.

[2.] Perform the "Stopping the Voice System" procedure.

[3.] Edit the file **/vs/data/irAPI.rc**:

- a. If a VCHANS=32 entry exists, change the number 32 to 40.
- b. If a VCHANS entry does not exist, add the line VCHANS=32.

[4.] Perform the "Starting the Voice System" procedure.

** ASAI018 -- -- --- Unable to activate ASAI Domain
'<domain>'. Reason: Domain in initialization
state.

■ Message priority:

Major (**).

■ Description and effect:

The ASAI domain with the specified extension cannot be activated. Information about the call placed to this domain will not be reported to the service assigned to this domain.

The domain is in an initialization state.

■ Repair Procedure:

1. If message ASAI029 follows this message for the same domain, no corrective action is necessary.

[2.] Verify that the correct service has been assigned to the specified domain. Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions to perform the following steps:

a. Disable the domain.

b. Enable the domain.

[3.] If the problem persists, refer to "Isolating ASAI Troubles" in Chapter 2, "Trouble and Failure Indications" of this book to determine the cause for the failure.

■ For application developer:

Make sure the script assigned to the specified domain does not quit or exit. The script should be running continuously.

** ASAI019 -- -- --- Unable to activate ASAI Domain
'<domain>'. Reason: Domain nonexistent on the
PBX.

■ Message priority:

Major (**).

■ Description and effect:

The ASAI domain with the specified extension cannot be activated. Information about the call placed to this domain will not be reported to the service assigned to this domain.

The extension corresponding to the specified ASAI domain is nonexistent on the PBX.

■ Repair procedure:

Consult your PBX administrator to add the specified domain to the PBX.

** ASAI020 -- -- --- Unable to activate ASAI Domain
'<domain>'. Reason: PBX-monitored Domain limit
has been exceeded.

■ Message priority:

Major (**).

■ Description and effect:

The ASAI domain with the specified extension cannot be activated. Information about the call placed to this domain will not be reported to the service assigned to this domain.

The switch limit for the maximum number of monitored domains has been exceeded.

■ Repair procedure:

If message ASAI029 follows this message for the same domain, no corrective action is necessary. Otherwise, consult your PBX administrator.

** ASAI021 -- -- --- Unable to activate ASAI Domain
'<domain>'. Reason: Domain monitored by another
adjunct.

■ Message priority:

Major (**).

■ Description and effect:

The ASAI domain with the specified extension cannot be activated. Information about the call placed to this domain will not be reported to the service assigned to this domain.

The specified ASAI domain is already monitored by another adjunct.

■ Repair procedure:

If message ASAI029 follows this message for the same domain, no corrective action is necessary. Otherwise, the adjunct monitoring this domain has to disable the domain before the VIS can monitor it.

** ASAI022 -- -- --- Unable to activate ASAI Domain
'<domain>'. Reason: Domain is vector-controlled
or adjunct-controlled.

■ Message priority:

Major (**).

■ Description and effect:

The ASAI domain with the specified extension cannot be activated. Information about the call placed to this domain will not be reported to the service assigned to this domain.

The specified ASAI domain may be either an adjunct- or vector-controlled split.

■ Repair procedure:

If message ASAI029 follows this message for the same domain, no corrective action is necessary. Otherwise, consult your PBX administrator to make sure that the domain extension is neither adjunct nor vector-controlled split.

*C ASAI023 -- -- --- Unable to activate ASAI Domain
'<domain>'. Reason: Switching equipment
congestion exists.

■ Message priority:

Critical (*C).

■ Description and effect:

The ASAI domain with the specified extension cannot be activated. Information about the call placed to this domain will not be reported to the service assigned to this domain.

Switching equipment congestion exists. The switch is not accepting the request at this time because of processor overload.

■ Repair procedure:

If message ASAI029 follows this message for the same domain, no corrective action is necessary. Otherwise, consult your PBX administrator.

** ASAI024 -- -- --- Unable to activate ASAI domain
'<domain>'. Reason: Unknown Error (Cause <UNIX
errno>).

■ Message priority:

Critical (**).

■ Description and effect:

The ASAI domain with the specified extension cannot be activated due to an unknown error.

Information about the call placed to this domain will not be reported to the service assigned to this domain.

■ Repair procedure:

If message ASAI029 follows this message for the same domain, no corrective action is necessary. Otherwise, refer to Chapter 7, "Troubleshooting ASAI," of *CONVERSANT VIS Adjunct/Switch Application Interface*, 585-350-812, to determine the cause for the failure.

ASAI025 -- -- --- ASAI link has been established.

- Message priority:
None.
- Description and effect:
The ASAI link has been established. All ASAI-provided services will start to function now.
- Repair procedure:
No corrective action is necessary.

** ASAI026 <ct> CH <equip #> No ASAI call information available for domain '<domain>'. Reason: Haven't received event report yet.

- Message priority:
Major (**).
- Description and effect:
The service assigned to the VIS agent on the specified channel requested call information from the ASAI feature that was not available.

The call information about the call that is terminated to the specified channel has not arrived yet.
- Repair procedure:
 1. Verify that the T/R ACD split with service "VIS" has been administered and is in service. Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for information on administering the ACD split.
 - [2.] Verify that the PBX extension-to-channel assignments have been correctly administered. Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for information on the channel-to-extension assignment.

* ASAI027 -- -- --- <num> ASAI protocol errors detected during last 60 seconds.

■ Message priority:

Minor (*).

■ Description and effect:

ASAI protocol errors have been detected. An occasional report does not indicate a serious problem.

■ Repair procedure:

1. Check the integrity of the cabling of the ASAI BRI link.
2. Diagnose the IPCI card. Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions on diagnosing the IPCI card.

ASAI028 <ct> CH <equip #> ASAI channel now logged in.

■ Message priority:

None.

■ Description and effect:

The VIS agent on the specified channel has been logged in. The ACD will start routing calls to this channel.

■ Repair procedure:

No corrective action is necessary.

ASAI029 -- -- --- ASAI Domain '<domain>' is now in service.

■ Message priority:

None.

■ Description and effect:

The ASAI-administered domain with the specified extension is activated now. The events on this domain will now be reported to the service that is assigned to this domain.

■ Repair procedure:

No corrective action is necessary.

** ASAI030 -- -- --- ASAI link has received <num> messages
during last 60 secs for unknown RTE Domain.

■ Message priority:

Major (**).

■ Description and effect:

Unexpected routing messages have been received over the ASAI link for which there is no administered RTE domain. If an administered domain were available, event messages would have been sent to the assigned service. Since no service is available, the VIS discards the messages. The error message in the log indicates how many messages were discarded over a one minute period.

■ Repair procedure:

1. Verify that the PBX has been correctly administered. Consult your PBX administrator.

[2.] Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions to perform the following steps:

- a. Add an RTE domain with the specified extension.
- b. Enable the RTE domain.

* ASAI031 -- -- --- ASAI link has received <num> messages
during last 60 sec for unknown CTL Domain.

■ Message priority:

Minor (*).

■ Description and Effect:

Unknown messages are received over the ASAI link for which there is no administered CTL domain. If an administered domain were available, event messages would have been sent to the assigned service. Since no service is available, the VIS discards the messages. The error message in the log indicates how many messages were discarded over a one minute period. This does not indicate a serious problem.

■ Repair procedure:

No corrective action is necessary. To prevent these messages from appearing, add a CTL domain with the specified extension. Refer to Chapter 4, "ASAI Administration," of *CONVERSANT VIS 4.0 Adjunct/Switch Application Interface*, 585-350-812, for instructions on adding a domain.

BRDG System Messages

** BRDG001 -- -- --- Call Bridge failed to receive message.
Reason: <reason>.

- Message priority:
Major (**).
- Description and effect:
The Call Bridge feature failed to communicate with the voice system during call processing. The application is unable to bridge calls.
- Repair procedure:
Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** BRDG002 -- -- --- Call Bridge failed to send message to
<process>. Reason: <reason>.

- Message priority:
Major (**).
- Description and effect:
The Call Bridge feature failed to communicate with the voice system during call processing. The application is unable to bridge calls.
- Repair procedure:
Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** BRDG003 -- -- --- Call Bridge failed to attach system
table <tblname>.

■ Message priority:

Major (**).

■ Description and effect:

The Call Bridge feature failed to access a shared resource of the voice system during the initialization. The application is unable to bridge calls.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure.

[3.] If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** BRDG004 -- -- --- Call Bridge failed to allocate memory
for table <tblname>.

■ Message priority:

Major (**).

■ Description and effect:

The Call Bridge feature failed to access a shared resource of the voice system. The application is unable to bridge calls.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

* BRDG005 <ct> CH <equip #> Call Bridge failed to find an available channel in the equipment group number <group #>.

■ Message priority:

Minor (*).

■ Description and effect:

The Call Bridge feature failed to find an available channel in the equipment group specified in the message. The application may not be able to complete the call bridge.

The impact may be significant if the message occurs more frequently than the currently set threshold limit. In that case, you will see a threshold message similar to the following:

```
*C THR004 -- -- --- The first threshold level for
                    BRDG_NOCHAN exceeded. 10 messages have been
                    generated in the last 5 minutes.
```

The threshold limits and threshold message priority shown above reflect the default values for this thresholded message.

■ Repair procedure:

1. Verify that all channels assigned to the equipment group specified are in service.

[2.] Check if all the channels assigned in the equipment group specified are not busy.

CGEN System Messages

* CGEN001 <ct> <ca/ch> <equip #> Unexpected IPC message <contents> from <process>.

- Message priority:

Minor (*).

- Description and effect:

An internal VIS process received an unexpected message from the process identified in this message. The message has been ignored.

- Repair procedure:

1. Identify the source of the unexpected message.

- a. If the source of the unexpected message is a customer application data interface process (DIP), refer to the "For application developer" section below.

- b. Otherwise, perform the "Stopping the Voice System" and the "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

[2.] If the problem persists, confirm that all installed VIS software packages are compatible with the installed version of the Intuity CONVERSANT application software package. Remove any software package that is incompatible and install the proper version. Refer to *CONVERSANT VIS 4.0 Software Installation*, 585-350-111, for the software installation procedure.

- For application developer:

If the source of the message is a customer application DIP, check the DIP program for errors in the content of the UNIX IPC messages it is sending to the source of the CGEN001 message.

 NOTE:

Running the VIS **trace** command on the sending and receiving process and the channel indicated in the CGEN001 message (if any) may help in detecting the source of the problem. See the *CONVERSANT VIS 4.0 Command Reference*, 585-350-209, for information on the **trace** command.

*C CGEN002 -- -- --- System table <tblname> <problem>.

■ Message priority:

Critical (*C).

■ Description and effect:

The VIS system table named in the message is corrupted or cannot be accessed by the source of the message. System functionality is severely impaired.

■ Repair Procedure:

1. If <tblname> is DEVTBL:



CAUTION:

The following procedure will cause all system configuration information to be lost. This includes switch administration, service assignments, etc. When the voice system is restarted, the system configuration will use the default settings.

- a. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- b. Move the **devtbl** to another area. For example, enter:
mv /gendb/shmem/devtbl /gendb/shmem/devtbl.old
- c. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- d. If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C CGEN003 -- -- --- Cannot open <process> message queue.
Reason: <reason>.

- Message priority:

Critical (*C).

- Description and effect:

An internal VIS process cannot communicate with other internal VIS processes. System functionality is severely impaired.

- Repair procedure:

Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C CGEN004 -- -- --- Failed to receive message.
Reason: <reason>.

- Message priority:

Critical (*C).

- Description and effect:

An internal VIS process cannot communicate with other internal VIS processes. System functionality is severely impaired.

- Repair procedure:

Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C CGEN005 -- -- --- Failed to send message to <process>.
Reason: <reason>.

- Message priority:

Critical (*C).

- Description and effect:

The VIS cannot communicate with the specified process.
System functionality is severely impaired.

⇒ NOTE:

If the reason given for this message is EAGAIN, the system message queue capacity is being exceeded. This may affect only the receiving process listed in the message if the receiving process is not handling incoming messages often enough. Note the receiving process is the process which failed to get the message. If the receiving process listed is a customer application DIP, consult with the programmer to determine why the process is getting behind in reading its message queue. If the receiving process is a VIS process (for example, VROP, MTC, TSM, etc.) then it is more likely that all processes are having trouble communicating, and call handling will be severely impaired until the repair procedure below is followed.

- Repair procedure:

1. To gather data about this problem for later analysis, enter the following:

cd /usr/install

sar > sar.out

ps -ef > ps.out

ipcs -qop > ipcs.out

2. Perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures" of this book.
- [3.] If the reason for this message is EAGAIN, and you have recently added hardware to the system, follow the "Checking a Card" procedure to ensure that the card recently added has a unique index. For example, make sure that there are not two T1 boards that have the same switch setting for T1-2.
- [4.] If the problem persists, follow the trouble escalation procedure and inform personnel that you have collected the data listed in step 1.

- For application developer:

1. To gather data about this problem for later analysis, enter the following:

cd /usr/install

sar > sar.out

ps -ef > ps.out

ipcs -qop > ipcs.out

- [2.] If the specified process is a customer application DIP and the reason given for the message is EAGAIN, correct the program to process its IPC message queue in a timely fashion to prevent backlogs.
- [3.] Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C CGEN006 -- -- --- Initialization failure.
[Reason: <reason>].

- Message priority:

Critical (*C).

- Description and effect:

The VIS failed to initialize properly. System functionality is severely impaired.

- Repair procedure:

1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [3.] If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C CGEN007 -- -- --- Memory allocation failure[for
 <tblname>].

■ Message priority:

Critical (*C).

■ Description and effect:

The VIS failed to allocate memory internally for data.
System functionality is severely impaired.

■ Repair procedure:

1. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [3.] If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C CGEN008 -- -- --- Cannot access TR cards.

■ Message priority:

Major (**).

■ Description and effect:

The VIS failed to open the T/R card driver. System T/R cards are unusable.

■ Repair procedure:

- [1.] If this problem occurs because the T/R driver was purposely removed and you do not wish to reinstall it, renumber the voice channels. Refer to "Renumber Voice Channels" in Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.
- [2.] If the problem persists or if T/R cards are present in the system, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [3.] If the problem persists, perform the "Reinstalling the T/R Driver" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** CGEN009 -- -- --- Cannot access SP cards.

■ Message priority:

Major (**).

■ Description and effect:

The VIS failed to open or attach the SP card driver.
System SP cards are unusable.

■ Repair procedure:

- [1.] Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [2.] If the problem persists, perform the "Reinstalling the SP Driver" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** CGEN010 -- -- --- Cannot access T1 cards.

■ Message priority:

Major (**).

■ Description and effect:

The VIS failed to open the T1 card driver. System T1 cards are unusable.

■ Repair procedure:

- [1.] If this problem occurs because the T1 driver was purposely removed and you do not wish to reinstall it, renumber the voice channels. Refer to "Renumber Voice Channels" in Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.
- [2.] If the problem persists or if T1 cards are present in the system, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [3.] If the problem persists, perform the "Reinstalling the T1 Driver" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C CGEN011 TR <ca/ch> <equip #> Failed to <action>.
Reason: <error>.

■ Message priority:

Critical (*C).

■ Description and effect:

The VIS failed to perform the indicated function on the T/R voice channel or card specified. System functionality is severely impaired.

■ Repair procedure:

1. Perform diagnostics for the failed T/R card.

a. Enter:

diagnose card <card number>

where <card number> is the card number of the T/R card from the **display card tr** command output.

b. If the card passes diagnostics, place it back in service by entering:

restore card <card number>

where <card number> is the card number of the T/R card you want to restore to service.

[2.] If the problem persists, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Reinstalling the CONVERSANT Application Software Package" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** CGEN012 TR <ca/ch> <equip #> Failed to <action>.
Reason: <error>.

■ Message priority:

Major (**).

■ Description and effect:

The VIS failed to perform the indicated function on the T/R voice channel or card specified. T/R card functionality is impaired.

■ Repair procedure:

1. Perform diagnostics for the failed T/R card.

a. Enter:

diagnose card <card number>

where <card number> is the card number of the T/R card from the **display card tr** command output.

b. If the card passes diagnostics, place it back in service by entering:

restore card <card number>

where <card number> is the card number of the T/R card you want to restore to service.

[2.] If the problem persists, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Reinstalling the CONVERSANT Application Software Package" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C CGEN013 SP CA <equip #> Failed to <action>.
Reason: <error>.

■ Message priority:

Critical (*C).

■ Description and effect:

The VIS failed to perform the indicated function on the SP card specified. System functionality is severely impaired.

■ Repair procedure:

1. If any packages (for example, ISDN PR, Whole Word, Flex Word, CCA) have been removed from the system recently, verify that any related cards, functions, etc. have been unassigned from the application so that the affected card does not come up in the "Broken" state. Refer to Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.
2. Perform diagnostics for the failed SP card.

[a.] Enter:

diagnose card <card number>

where <card number> is the card number of the SP card from the **display card sp** command output.

[b.] If the card passes diagnostics, place it back in service by entering:

restore card <card number>

where <card number> is the card number of the SP card you want to restore to service.

- [3.] If the card remains in the "Broken" state, perform the "Reducing Load" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [4.] If the card remains in the "Broken" state, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [5.] If the card remains in the "Broken" state, perform the "Reinstalling the SP Driver" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** CGEN014 SP CA <equip #> Failed to <action>.
Reason: <error>.

■ Message priority:

Major (**).

■ Description and effect:

The VIS failed to perform the indicated function on the SP card specified. SP card functionality is impaired.

■ Repair procedure:

1. Perform diagnostics for the failed SP card.

a. Enter:

diagnose card <card number>

where <card number> is the card number of the SP card from the **display card sp** command output.

b. If the card passes diagnostics, place it back in service by entering:

restore card <card number>

where <card number> is the card number of the SP card you want to restore to service.

[2.] If the problem persists, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Reinstalling the SP Driver" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C CGEN015 T1 <ca/ch> <equip #> Failed to <action>.
Reason: <error>.

■ Message priority:

Critical (*C).

■ Description and effect:

The VIS failed to perform the indicated function on the T1 voice channel or card specified. System functionality is severely impaired.

■ Repair procedure:

1. Perform diagnostics for the failed T1 card.

a. Enter:

diagnose card <card number>

where <card number> is the card number of the T1 card from the **display card t1** command output.

b. If the card passes diagnostics, place it back in service by entering:

restore card <card number>

[2.] If the problem persists, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Reinstalling the T1 Driver" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** CGEN016 T1 <ca/ch> <equip #> Failed to <action>.
Reason: <error>.

■ Message priority:

Major (**).

■ Description and effect:

The VIS failed to perform the indicated function on the T1 voice channel or card specified. T1 card functionality is impaired.

■ Repair procedure:

1. Perform diagnostics for the failed T1 card.

a. Enter:

diagnose card <card number>

where <card number> is the card number of the T1 card from the **display card t1** command output.

b. If the card passes diagnostics, place it back in service by entering:

restore card <card number>

where <card number> is the card number of the T1 card you want to restore to service.

[2.] If the problem persists, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Reinstalling the T1 Driver" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** CGEN017 -- -- --- Failed to save <tblname> on disk.
Reason: <error>.

■ Message priority:

Major (**).

■ Description and effect:

The system was unable to save configuration changes made by the user (for example, script assignments to a channel, or card remove/restores) on disk. Shared memory updates will be lost when system is rebooted. Call processing is not affected until then.

■ Repair procedure:

- [1.] Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [2.] If the problem persists, perform the "Restoring the System from Backup" procedure.

** CGEN018 TR <ca/ch> <equip #> Hardware failure.

■ Message priority:

Major (**).

■ Description and effect:

A hardware failure has been detected on the T/R voice channel or card specified. T/R card functionality is impaired.

■ Repair procedure:

- [1.] Perform diagnostics for the failed T/R card.

a. Enter:

diagnose card <card number>

where <card number> is the card number of the T/R card from the **display card tr** command output.

- b. If the card passes diagnostics, place it back in service by entering:

restore card <card number>

where <card number> is the card number of the TR card you want to restore to service.

- [2.] If the problem persists, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

-
- [3.] If the problem persists, perform the "Reinstalling the CONVERSANT Application Software Package" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

DB System Messages

** DB001 <ct/--> <CH/--> <equip #/--> Failed to
[update|insert] system table <tblname>.
Reason: <reason>

- Message priority:

Major (**).

- Description and effect:

An attempt to write a traffic record into the specific database table has failed either during call processing or processing a call data maintenance job.

This message is usually caused by one of the following reasons:

- The tables being accessed were dropped
- The table contains one or more bad data blocks
- The ORACLE database system is in an incorrect state (that is, one of the ORACLE background processes died)
- The maximum number of ORACLE open cursors is exceeded

If the source is Call Data Handler (CDH), the traffic record is not recorded in the database. If the source is CCA_Summary, the Call Classification (CCA) data report for the date the error was logged will not be correct. If the source is CDH_Summary, the non-CCA traffic data reports for the date the error was logged will not be correct.

There is no impact on call processing.

- Repair procedure:

[1.] If the reason field of the error message is:

ORA-00942:table or view does not exist

perform the "Recreating the System Traffic Tables" procedure.

[2.] If the reason field of the error message is:

ORA-1000: Maximum open cursor exceeded

or

Can't connect cursor to ORACLE

consult the application developer to reduce the number of database references to the database. This may be done by reducing the number of applications involving database access simultaneously running on the system. Refer to "Database Access Limitations" in Appendix B, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information.

[3.] For other error reasons, do the following:

- [a.] Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [b.] Perform the "Stopping the Database System" and the "Starting the Database System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.
- [c.] If the database system failed to start because of database file corruption, the database files must be recovered from an image copy backup. Perform the "Restoring the Database Directory from System Backup" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [d.] Perform the "Starting the Voice System" procedure.

[4.] If the problem persists, perform the "Recreating the System Traffic Tables" procedure.

*C DB002 <ct> CH <equip #> Failed to [update|insert] user table <tblname>. Reason: <reason>

■ Message priority:

Critical (*C).

■ Description and effect:

An attempt to write a database record to an application table has failed during call processing. The record will be lost. Application functionality may be severely impaired.

This message is usually caused by one of the following reasons:

- The table permissions do not allow it to be modified by SQL*Plus user, 'sti'
- The tables being accessed were dropped
- The table was modified before it was read
- The table contains one or more bad data blocks

-
- The ORACLE database system is in an incorrect state (that is, one of the ORACLE background processes died)
 - The maximum number of ORACLE open cursors is exceeded

- Repair Procedure:

[1.] If the reason field of the error message is:

ORA-1031 Insufficient privileges

provide the user **sti** the needed permissions by:

a. Login to SQL*PLUS as the original table owner.

b. Enter:

grant all on <tblname> to sti



NOTE:

The original owner must already have the proper permissions for the table.

[2.] If the reason field of the error message is:

ORA-00942:table or view does not exist

consult the application developer to verify the application. Refer to the "For application developer" section below.

[3.] If the reason field of the error message includes:

Can't find select descriptor for table <table name> . . .

this indicates that the application erroneously tried to modify the table before reading it. Refer to "For application developer" section below.

[4.] If the reason field of the error message is:

ORA-1000: Maximum open cursor exceeded

or

Can't connect cursor to ORACLE

consult the application developer to reduce the number of database references to the database. This may be done by reducing the number of applications involving database access simultaneously running on the system. Refer to "Database Access Limitations" in Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information.

[5.] For other error reasons, do the following:

- a. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- b. Perform the "Stopping the Database System" and the "Starting the Database System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.
- [c.] If the database system failed to start because of the file corruption, perform the "Restoring the Database Directory from System Backup" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- d. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[6.] If the database system started successfully but the problem persists, do the following:

- a. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- b. Perform the "Dropping a Database Table" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- c. Restore the application table from backup.



NOTE:

If the table resides on a remote machine, restore the table to the remote machine.

- d. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

■ For application developer:

- 1. Check the application and make sure that the application refers to the correct table name.
- [2.] Make sure the table is read before an attempt is made to modify it.
- [3.] If the application refers to a wrong table, change the application.
- [4.] If the application is correct, restore the application table from the backup. If no backup is available, recreate the application table.

**** DB003 <ct> <ca/ch> <equip #> Failed to read system table
<tblname>. Reason: <reason>**

■ **Message priority:**

Major (**).

■ **Description and effect:**

An attempt to read a record from the specified system traffic table has failed. This error message is reported by one of the call data maintenance jobs (that is, CCA_Summary, CCA_Deletion, CDH_Summary, or CDH_Deletion) that are responsible for summarizing and cleaning up the traffic data.

If the source is CCA_Summary or CCA_Deletion, the Call Classification (CCA) data report for the date the error was logged will not be correct. If the source is CDH_Summary or CDH_Deletion, all non-CCA traffic data reports for the date the error was logged will not be correct.

There is no impact on call processing.

■ **Repair procedure:**

[1.] If the reason field of the error message is

ORA-00942:table or view does not exist

perform the "Recreating the System Traffic Tables" procedure.

[2.] For other error reasons, do the following:

a. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

b. Perform the "Stopping the Database System" and the "Starting the Database System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

[c.] If the database system failed to start because of database file corruption, the database files must be recovered from an image copy backup. Perform the "Restoring the Database Directory from System Backup" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

d. Perform the "Starting the Voice System" procedure.

[e.] If the problem persists, perform the "Recreating the System Traffic Tables" procedure.

*C DB004 <ct> CH <equip #> Failed to read user table
<tblname>. Reason: <reason>

■ Message priority:

Critical (*C).

■ Description and effect:

An attempt to read a record from the specified application table has failed during call processing. Application functionality may be severely impaired.

■ Repair procedure:

[1.] If the <reason> field of the error message is

ORA-00942:table or view does not exist

or

Can't find table descriptor for table
<table_name>

Refer to the "For application developer" section below.

[2.] For other error reasons, do the following:

- a. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- b. Perform the "Stopping the Database System" and the "Starting the Database System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

[c.] If the database system failed to start because of the file corruption, perform the "Restoring the Database Directory from System Backup" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

- d. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the database system started successfully but the problem persists, do the following:

- a. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- b. Perform the "Dropping a Database Table" procedure for the table <tblname>.
- c. Restore the application table from backup.

**NOTE:**

If the table resides on a remote machine, restore the table to the remote machine.

- d. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

- For application developer:
 1. Check the application and make sure that it refers to the correct table name.
 - [2.] If the application refers to a wrong table, change the application.
 - [3.] If the application is correct, restore the application table from the backup. If no backup is available, recreate the application table.

** DB005 -- -- --- Failed to delete system table <tblname>.
Reason: <reason>

- Message priority:

Major (**).

- Description and effect:

An attempt to delete records from the specified system traffic table has failed. This error message is reported by one of the call data maintenance jobs, CCA_Deletion or CDH_Deletion, that are responsible for deleting the old traffic data.

If the source is CCA_Deletion, the Call Classification (CCA) data report for the date the error was logged will not be correct. If the source is CDH_Deletion, all non-CCA traffic data reports for the date the error was logged will not be correct.

There is no impact on call processing.

- Repair procedure:

- [1.] If the reason field of the error message is:

ORA-00942:table or view does not exist

perform the "Recreating the System Traffic Tables" procedure.

- [2.] For the other error reasons, do the following:

- a. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

-
- b. Perform the "Stopping the Database System" and the "Starting the Database System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.
 - [c.] If the database system failed to start because of database file corruption, the database files must be recovered from an image copy backup. Perform the "Restoring the Database Directory from System Backup" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
 - d. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
 - [e.] If the problem persists, perform the "Recreating the System Traffic Tables" procedure.

*C DB006 <ct> CH <equip #> Failed to delete user table
<tblname>.Reason: <reason>

■ Message priority:

Critical (*C).

■ Description and effect:

An attempt to delete one or more records from the application table has failed during call processing. The records to be deleted will remain in the table. Application functionality may be severely impaired.

■ Repair procedure:

1. If the reason field of the error message is:

ORA-00942:table or view does not exist

consult the application developer to verify the application. Refer to the "For application developer" section below.

- [2.] For other problems, do the following:

- a. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- b. Perform the "Stopping the Database System" and the "Starting the Database System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

-
- c. If the database system failed to start because of the file corruption, perform the "Restoring the Database Directory from System Backup" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
 - d. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [3.] If the database system started successfully but the problem persists, do the following:
- a. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
 - b. Perform the "Dropping a Database Table" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
 - c. Restore the application table from backup.



NOTE:

If the table resides on a remote machine, restore the table to the remote machine.

- d. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- For application developer:
- 1. Check the application and make sure that it refers to the correct table name.
- [2.] If the application refers to a wrong table, change the application.
- [3.] If the application is correct, restore the application table from the backup. If no backup is available, recreate the application table.

** DB007 -- -- --- Failed to allocate space for system table
<tblname>. Reason: <reason>

■ Message priority:

Major (**).

■ Description and effect:

Either the database is out of space or the system traffic table reached the maximum allowable number of extents. The system traffic table specified (or the rollback segment) cannot grow further to accommodate more data. New traffic data added will be lost.

There is no impact on call processing.

■ Repair procedure:

1. Perform the "Checking the Maximum Number of Extents" procedure.

[2.] If the maximum number of extents is reached, perform the "Redefining Database Table Storage" procedure.

3. Perform the "Checking the Database Free Space" procedure.

[4.] If the database is running out of free space, do the following:

a. Refer to Appendix D, "Information for Advanced Users," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on verifying and reducing the rollback segment size.

[b.] If the rollback segment size is normal, add more space to the database. Refer to Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on increasing the database size.

*C DB008 <ct> CH <equip #> Failed to allocate space for the user table <tblname>. Reason: <reason>

■ Message priority:

Critical (*C).

■ Description and effect:

Either the database is out of space or the application table reached the maximum allowable number of extents during call processing. The table specified (or the rollback segment) cannot grow further to accommodate more data. The service running on the channel will not be able to add more database records. Application functionality may be severely impaired.

■ Repair procedure:

1. Perform the "Checking the Maximum Number of Extents" procedure.

[2.] If the maximum number of extents is exceeded, perform the "Redefining Database Table Storage" procedure.

3. Perform the "Checking the Database Free Space" procedure.

[4.] If the database is running out of free space, do the following:

a. Refer to Appendix D, "Information for Advanced Users" of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on verifying and reducing the rollback segment size.

[b.] If the rollback segment size is normal, add more space to the database. Refer to Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on increasing the database size.

** DB009 -- -- --- Failed to access database during
initialization. Reason: <reason>

■ Message priority:

Major (**).

■ Description and effect:

The call data handling process or one of the call data maintenance jobs specified failed to initialize itself. If the source is Call Data Handler (CDH), no traffic data will be logged in the database (including call data events records).

If the source is CCA_Summary or CCA_Deletion, the Call Classification (CCA) data report for the date the error was logged will not be correct. If the source is CDH_Summary or CDH_Deletion, all non-CCA traffic data reports for the date the error was logged will not be correct.

There is no impact on call processing.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Stopping the Database System" and the "Starting the Database System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

[a.] If the database system cannot be started, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[b.] If the database failed to start after reboot, perform the "Restoring the Database Directory from System Backup" procedure.

3. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[4.] If the database started successfully but the problem persists, do the following:

a. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

b. Perform the "Recreating the System Traffic Tables" procedure.

*C DB010 -- -- --- Failed to access database during
initialization. Reason: <reason>

■ Message priority:

Critical (*C).

■ Description and effect:

The ORACLE database interface process (ORALDB) failed to initialize itself after the voice system was started. The process will continue to respawn as long as the voice system is running. Services assigned to channels will not be able to access the database being referenced by the SOURCE of this message. The database may be remote or local.

Application functionality may be severely impaired.

■ Repair procedure:

1. Determine whether the database being accessed is a local or a remote database by checking the SOURCE field of the message.

If the database is remote, perform the "Checking the ORACLE Network" procedure. If the problem persists, proceed to Step 2.

If the database is local, proceed to Step 2.
2. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
3. Perform the "Stopping the Database System" and the "Stopping the Database System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.
- [4.] If the database system cannot be started (file corruption), perform "Restoring the Database Directory from System Backup" described in Chapter 4, "Common Maintenance Procedures" in this book.
5. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [6.] If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** DB011 -- -- --- Database operation failed.
Reason: <reason>

■ Message priority:

Major (**).

■ Description and effect:

This is a general database error that is reported by either the call data handling process or one of the call data maintenance jobs.

If the source is Call Data Handler (CDH), the traffic records (including call data events) will not be created. If the source is CCA_Summary or CCA_Deletion, the Call Classification (CCA) data report for the date the error was logged will not be correct. If the source is CDH_Deletion or CDH_Summary, all non-CCA traffic data reports for the date the error was logged will not be correct.

There is no impact on call processing.

■ Repair procedure:

1. Enter:

loracle/bin/oerr ora <error_num>

where <error_num> is the ORACLE error number in the reason field of the error message.

The output will contain a brief explanation of the error, the cause of the error, and the action to take to correct the error.



NOTE:

You should also refer to the *ORACLE Error Messages and Codes Manual* for the explanation. Many times the online explanation will not be as complete as the manual explanation. If the error is unique to the UNIX environment, you can also refer to the *ORACLE for UNIX Technical Reference Guide* for detailed information.

2. Take the actions provided to correct the problem.

[3.] Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[4.] If the database system cannot be started (file corruption), perform the "Restoring the Database Directory from System Backup" procedure described in Chapter 4, "Common Maintenance Procedures" in this book. If no backup is available, remove and reinstall the "Base ORACLE DBMS 6.0.30" package.

 NOTE:

All current database data will be lost after the package is reinstalled.

*C DB012 <ct/--> <CH/--> <equip #/--> Database operation failed. Reason: <reason>

■ Message priority:

Critical (*C).

■ Description and effect:

This is a general database error that is reported by the database interface process (ORALDB) during call processing.

Depending on the error, application functionality may be impaired.

■ Repair procedure:

[1.] If the reason field of error message is:

ORA-1000: Maximum open cursor exceeded

consult the application developer to reduce the number of database references to the database. This may be done by reducing the number of applications involving database access simultaneously running on the system. Refer to "Database Access Limitations" in Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.

2. Perform the repair procedure for system message DB011 provided in this chapter.

[3.] If the problem persists and the database is remote, perform the "Checking the ORACLE Network" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** DB013 <ct> CH <equip #> Lost connection to database.
Reason: <reason>

■ Message priority:

Major (**).

■ Description and effect:

The connection that this database process was logged onto has been dropped during call processing. The database could be a local or remote database. This may be a result of network congestion, the network going down, the remote machine going down, or other reasons. The negative number in the reason field is the ORACLE error code. Refer to the ORACLE RDBMS Error Messages and Codes Manual for further information about this error. The process will try to respawn and reconnect to the database. However, if the problem is the network or remote machine, the process may not be able to reconnect without manual intervention.

The service running on the channel will not be able to make any database request until the problem is resolved.

 NOTE:

Sometimes when the remote database connections are dropped, the dedicated server process on the remote machine may be orphaned. If too many such orphaned processes exist, the ORACLE server on the remote machine will become overloaded with defunct processes. At this point, the CONVERSANT machine may not be able to connect to the remote database successfully. If this is the case, you probably need to restart the remote database to remove the defunct server processes. Consult the Database Administrator of the remote database for assistance.

■ Repair procedure:

If the system stopped to generate this message, the database process has logged onto the database successfully since the error message was recorded. No action needs to be taken.

If the error message continues to be generated, do the following:

1. Determine whether the database being accessed is a local or a remote database by checking the SOURCE field of the message.

If the database is remote, perform the "Checking the ORACLE Network" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

If the database is local, proceed to Step 2.

-
2. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
 3. Perform the "Stopping the Database System" and the "Starting the Database System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.
 - [4.] If the database system cannot be started (file corruption), perform the "Restoring the Database Directory from System Backup" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
 5. Perform "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
 - [6.] If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C DB014 <ct> CH <equip #> Timeout during DB access, timeout
<length> sec. <num> messages deleted.
Reason: <reason>

■ Message priority:

Critical (*C).

■ Description and effect:

The database interface process (ORALDB) has timed out on a database request during call processing. The initial timeout has the default value 45 seconds (defined in /vs/data/ldb dip.rc). Any of the following reasons can cause this timeout to occur:

- The timeout value set is too small
- The application was searching a huge nonindexed table
- The network was congested
- The network went down
- The remote machine went down

ORALDB will continue to wait for the response from the database (local or remote) until the final timeout occurs (DB015). After the final timeout occurs (default 300 seconds), ORALDB will try to reconnect to the database (remote or local). Messages queued are deleted to prevent the message queue from overflowing.

Application functionality may be severely impaired.

- Repair procedure:

1. Consult the application developer to verify the application. Refer to the "For application developer" section below.
- [2.] Perform the "Checking the ORACLE Network" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [3.] Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

- For application developer:

If the database is remote and the above actions did not resolve the problem, or if the database is local, do the following:

1. Determine if the application is searching a nonindexed table. (If the table was created through Script Builder, the table is not indexed.) If the application searches a table containing more than 1000 records, you should index the table. Refer to Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on creating the indexed table.
2. If the searched table is small or the table is indexed, check the TIMEOUT values in the **/vs/data/ldbdip.rc** file. Make sure the FIRST_TMOUT and SECOND_TMOUT values are not too small (that is, less than 10 seconds). Refer to Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on modifying the ORALDB timeout values if necessary.

*C DB015 <ct> CH <equip #> Maximum timeout occurred during DB access, timeout <length> sec. Reason: <reason>

■ Message priority:

Critical (*C).

■ Description and effect:

This error usually follows a few occurrences of DB014 error messages. It indicates that the database interface process (ORALDB) times out on a database request after waiting for a specified interval (defined in `/vs/data/ldbdip.rc`). ORALDB will exit and respawn in order to reconnect to the database (remote or local). It will continue to do so until either the database connection is successfully established or the voice system is stopped.

If the reconnection attempt is not successful, no database requests will be processed. Application functionality is severely impaired.

■ Repair procedure:

1. Consult the application developer to verify the application. Refer to the "For application developer" section below.
- [2.] Perform the "Checking the ORACLE Network" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [3.] Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

■ For application developer:

If the database is remote and the above actions did not resolve the problem, or if the database is local, do the following:

1. Determine if the application is searching a nonindexed table. (If the table was created through Script Builder, the table is not indexed.) If the application searches a table containing more than 1000 records, you should index the table. Refer to Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on creating the index table.
2. If the searched table is small or the table is indexed, check the TIMEOUT values in the `/vs/data/ldbdip.rc` file. Make sure the FIRST_TMOUT and SECOND_TMOUT values are not too small (that is, less than 10 seconds). Refer to Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on modifying the ORALDB timeout values if necessary.

** DB016 -- -- --- Failed to receive message. Reason:
<reason>

- Message priority:

Major (**).

- Description and effect:

The Call Data Handler (CDH) failed to communicate to the voice system. The traffic data may not be recorded correctly.

There is no impact on call processing.

- Repair procedure:

Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

DBC System Messages

* DBC001 -- -- --- Database <num> percent free, <num> Blocks of <num> available. Reason: <reason>.

- Message priority:

Minor (*).

- Description and effect:

This message comes from the /vs/bin/util/dbcheck routine. The database has exceeded a user-defined threshold of available space. If the database runs out of space, call data events will be lost as well as any data that applications attempt to store. If this happens, a database alarm will be logged.

- Repair procedure:

This message is only a warning. It does not indicate a more serious problem until message DB007 or DB008 appear in the Message Log Report. If DB007 or DB008 appear in the log following this message, refer to the repair procedure for those messages.

* DBC002 -- -- --- Extents low, <num> used of <num>, on object <object>. Reason: <reason>.

- Message priority:

Minor (*).

- Description and effect:

This message comes from the /vs/bin/util/dbcheck routine. The number of extents used has crossed a user-defined threshold. The message contains the name of the object (for example, table or index) that has crossed this limit. This object cannot grow beyond the number of extents the system allows. If this limit is reached, call data events will be lost as well as any data applications attempt to store. If this happens a database alarm will be logged.

- Repair procedure:

This message is only a warning. It does not indicate a more serious problem until message DB007 or DB008 appear in the Message Log Report. If DB007 or DB008 appear in the log following this message, refer to the repair procedure for those messages.

* DBC003 -- -- --- Rollback segments=<num> blocks, <num>
percent of total space. Reason: <reason>.

■ Message priority:

Minor (*).

■ Description and effect:

This message comes from the /vs/bin/util/dbcheck routine. The size of segment(s) which are used to accumulate changes to database tables before they are permanently written has exceeded a user-defined threshold. These rollback segment(s) grow as a result of large deletes and updates made to the database without frequent commits. If they continue to grow, they may impinge on user table space in the database. If this happens a database alarm will be logged.

■ Repair procedure:

This message is only a warning. It does not indicate a more serious problem until message DB007 or DB008 appear in the Message Log Report. If DB007 or DB008 appear in the log following this message, refer to the repair procedure for those messages.

ET System Messages

ET001 <string>

- Message priority:
None.
- Description and effect:
Only unconverted code from pre-VIS 3.1 systems uses this message. The priority and destinations of these messages are always set to be that specified by the /vs/data/etStub.rules file.

The meaning of messages logged via this mechanism depends upon the source and content of the message.
- Repair procedure:
No corrective action is necessary.

ET002 -- -- --- Read rules from <filename> - <num> rules successfully parsed.

- Message priority:
None.
- Description and effect:
The etStub process has read or reread the rules files. This happens any time the etStub process spawns and whenever it is requested to reread the rules file by command.
- Repair procedure:
No corrective action is necessary.

* ET003 -- -- --- Error in rules file - Line <num> - <reason>

■ Message priority:

Minor (*).

■ Description and effect:

The etStub process has detected a bad rule in the /vs/data/etStub.rules file. The rules file should be examined to determine the extent of the damage.

■ Repair procedure:

1. Enter:

/vs/bin/vrs/etStub -c

This lists all errors detected in the rules file. Each line which is not a comment should be in the form:

NNN F PP DST {format.....}

where:

NNN	is the message number	
F	is a flag:	
	O	the message should be tagged as obsolete.
	-	the message is not obsolete.
PP	is the message priority:	
	-	no priority - informational
	*	minor
	**	major
	*C	critical
DST	is the destination for the message:	
	LOG	just log the message
	PRT	log the message and direct it to /dev/console
{format}		The remainder of the line is the message text.

2. Correct any damaged lines or replace the file from backup sources.

```
* ET004 -- -- --- No rule for msgID (<num>) morig: <num>
      arg[0-3]: <num> <num> <num> <num> str: <string>
```

- Message priority:

Minor (*).

- Description and effect:

A message was received for which there was no rule in the /vs/data/etStub.rules file.

- Repair procedure:

1. Examine the **/vs/data/etStub.rules** file and determine why there is not a rule for the error message specified. A rule has the following form:

NNN F PP DST {format.....}

where:

NNN	is the message number	
F	is a flag:	
	O	the message should be tagged as obsolete.
	-	the message is not obsolete.
PP	is the message priority:	
	-	no priority - informational
	*	minor
	**	major
	*C	critical
DST	is the destination for the message:	
	LOG	just log the message
	PRT	log the message and direct it to /dev/console
{format}		The remainder of the line is the message text.

2. Add a rule if necessary.

* ET005 -- -- --- Invalid channel (<chan#>) for msgID (<msgid>) from <sender>.

- Message priority:
Minor (*).
- Description and effect:
The channel number specified by a message sent to the etStub process is invalid based on the system configuration.
- Repair procedure:
This message indicates an internal coding error occurred while accessing etStub to log messages. Consult the application developer to correct the code.

* ET006 -- -- --- Invalid card (<card #>) for msgID (<msgid>) from <sender>.

- Message priority:
Minor (*).
- Description and effect:
The card number specified by a message sent to the etStub process is invalid based on the system configuration.
- Repair procedure:
This message indicates an internal coding error occurred while accessing etStub to log messages. Consult the application developer to correct the code.

EXTA System Messages

EXTA001 -- -- --- External Alarm <alarm contact set> Test requested (mask <alarm set bit mask>).

- Message priority:
None.
- Description and effect:
This message is generated from a user request to test an external alarm contact set.
This message should result in the alarm contact set specified being either set or closed.
- Repair procedure:
No corrective action is necessary.

EXTA002 -- -- --- External Alarm <alarm contact set> Retire requested (mask <alarm set bit mask>).

- Message priority:
None.
- Description and effect:
This message is generated from a user request to retire an external alarm contact set.
This message should result in the external alarm contact set specified being either reset or opened.
- Repair procedure:
No corrective action is necessary.

EXTA003 -- -- --- External Alarm <alarm contact set> Enable requested (mask <alarm set bit mask>).

- Message priority:
None.
- Description and effect:
This message is generated from a user request to enable an external alarm contact set.
This message should result in the alarm contact set specified being enabled.

-
- Repair procedure:
No corrective action is necessary.

EXTA004 -- -- --- External Alarm <alarm contact set> Disable
requested (mask <alarm set bit mask>).

- Message priority:
None.
- Description and effect:
This message is generated from a user request to
disable an external alarm contact set.
This message should result in the alarm contact set
specified being disabled.
- Repair procedure:
No corrective action is necessary.

EXTA005 -- -- --- External Alarm Status requested.

- Message priority:
None.
- Description and effect:
This message is generated from a user request for
status of an external alarm contact set.
This message should result in the status of the
external alarm contact set specified being sent to the
requesting process.
- Repair procedure:
No corrective action is necessary.

** EXTA006 -- -- --- External Alarm Board Driver open failure. Reason: No such device.

■ Message priority:

Major (**).

■ Description and effect:

This message is generated when the external alarm card cannot be accessed by the alerter process.

The External Alarm feature is completely inoperable.

■ Repair procedure:

1. If the external alarm card cannot be opened, either it cannot be found or its protections are wrong. Remove the External Alarms package using the procedure in Chapter 2 of *CONVERSANT VIS 4.0 External Alarms*, 585-350-801.

 NOTE:

Removing the External Alarms feature package also removes all message ID alarm contact set mappings.

2. Reinstall the package using the procedure Chapter 2 of *CONVERSANT VIS 4.0 External Alarms*, 585-350-801. Be sure to allow the system to reboot after installation.

** EXTA007 -- -- --- Error reading configuration file <file name>.

■ Message priority:

Major (**).

■ Description and effect:

This message is generated whenever a configuration file for an alarm contact set cannot be read either because it does not exist or it has incorrect permissions.

The External Alarm feature is completely inoperable.

■ Repair procedure:

1. If the configuration file that cannot be read is either */vs/data/alarms/alarm1*, */vs/data/alarms/alarm2*, */vs/data/alarms/alarm3*, or */vs/data/alarms/alarm4*, continue with Step 2. Otherwise, go to Step 3.

-
2. Verify that the protections on the specified file (for example, **/vs/data/alarms/alarm1**) is "-rw-r--r--" by entering:

ls -l /vs/data/alarms/alarm1

at the UNIX system prompt.

The output for the file in question should be similar to the following:

```
-rw-r--r-- 1 root other 72 Jun 25 17:25 /vs/data/alarms/alarm1
```

3. Perform one of the following procedures, depending on the output from the **ls -l** command:
 - a. If the file is not readable as indicated by the "-rw-r--r--" string, enter:

chmod 644 /vs/data/alarms/alarm1
 - b. If the file owner is not root, enter:

chown root /vs/data/alarms/alarm1
 - c. If the file does not exist, create a new file using your favorite editor following the guidelines specified in Chapter 4, "Troubleshooting the CONVERSANT VIS Host Interface," of *CONVERSANT VIS 4.0 Host Interface*, 585-350-815.
4. If the file specified is called **/vs/data/alarms/masks**, verify the file protections and permissions as described in Step 2. The file protections should be "-rw-r--r--" and the owner should be "root." If the file does not exist, either the file was removed from the system or the file system has been corrupted. In either case, the file must be retrieved. Either restore the file by performing the "Restoring the Single File From Root File System Backup" procedure or remove and reinstall the External Alarm feature package as defined in Chapter 2, "Installing External Alarms Interface," of *CONVERSANT VIS 4.0 External Alarms*, 585-350-801.

```
** EXTA008 -- -- --- Syntax Error in <file name> line <line
#>. <error>
```

- Message priority:

Major (**).

- Description and effect:

This message occurs when the External Alarm feature process attempts to read a configuration file that contains an error.

The External Alarm feature is completely inoperable.

- Repair procedure:

1. If the configuration file that contains the error is not either **/vs/data/alarms/alarm1**, **/vs/data/alarms/alarm2**, **/vs/data/alarms/alarm3**, or **/vs/data/alarms/alarm4**, go to Step 3.
2. Verify that the line indicated in the message text matches the guidelines specified in Chapter 4, "Troubleshooting the CONVERSANT VIS Host Interface," of *CONVERSANT VIS 4.0 Host Interface*, 585-350-815.
3. If the file specified is called **/vs/data/alarms/masks**, the file was corrupted and must be restored. Either restore the file by performing the "Restoring a Single File From Root File System Backup" procedure or remove and reinstall the External Alarm feature package as defined in *CONVERSANT VIS 4.0 External Alarms*, 585-350-801.

```
** EXTA009 -- -- --- Bad alarm number -> <contact set #>:
Alarm numbers must be between <min. contact set
#> and <max contact set #>.
```

- Message priority:

Major (**).

- Description and effect:

This message indicates corruption in the **/vs/data/alarms/masks** file.

The External Alarm feature is completely inoperable.

- Repair procedure:

The file called **/vs/data/alarms/masks** was corrupted and must be restored. Either restore the file by performing the "Restoring a Single File From Root File System Backup" procedure or remove and reinstall the External Alarm feature package as defined in *CONVERSANT VIS 4.0 External Alarms*, 585-350-801.

* EXTA010 -- -- --- Attempt to <[set|reset]> external alarm failed (mask <alarm set bit mask>). Reason: <reason>.

- Message priority:

Minor (*).

- Description and effect:

This message indicates that the external alarm process cannot set or reset an alarm contact set or alarm timer.

The External Alarm feature may be inoperable.

- Repair procedure:

This error indicates a problem with the external alarm card driver. The only recourse is to remove and reinstall the External Alarm software package as defined in *CONVERSANT VIS 4.0 External Alarms*, 585-350-801.

EXTA011 -- -- --- External Alarm reinitialization requested.

- Message priority:

None.

- Description and effect:

This message is generated from a user request to reinitialize the external alarm system.

This message should result in the reinitialization of the External Alarm feature which resets and enables all alarm contact sets.

- Repair procedure:

No corrective action is necessary.

FFE System Messages

** FFE001 -- -- --- Form Filler Plus initialization failure.
Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

The Form Filler Plus feature cannot successfully initialize. Applications using the Form Filler Plus feature will fail.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

[4.] If the problem persists and a Form Filler Plus backup is available

- a. Refer to "Installing Form Filler Plus Software," of *CONVERSANT VIS 4.0 Form Filler Plus*, 585-350-806, for information on restoring Form Filler Plus database speech.
- b. Refer to "Installing Form Filler Plus Software," of *CONVERSANT VIS 4.0 Form Filler Plus*, 585-350-806, for information on restoring Form Filler Plus database files.

 NOTE:

The Form Filler Plus database speech must be restored before the Form Filler Plus database files.

[5.] If the problem persists or a Form Filler Plus backup is not available, remove and reinstall the Form Filler Plus package as described in "Installing Form Filler Plus Software," of *CONVERSANT VIS 4.0 Form Filler Plus*, 585-350-806.

 NOTE:

All current Form Filler Plus data will be lost as the result of reinstalling this package.

FFE002 -- -- --- Form Filler Plus initialization failure.
Reason: No channels defined.

- Message priority:
None.
- Description and effect:
There are no T/R or T1 channels on the system during Form Filler Plus initialization. The initialization will continue, but the Form Filler Plus feature will not be available.
- Repair procedure:
No corrective action is necessary.

** FFE003 -- -- --- Form Filler Plus failed to <action>.
Reason: [syserr].

- Message priority:
Major (**).
- Description and effect:
An internal error has occurred in the Form Filler Plus feature during call processing. Applications using the Form Filler Plus feature will fail.
- Repair procedure:
 1. Enter:

rm /vs/data/ff/delete.ph
 2. Perform the "Stopping the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.
 3. Perform the "Starting the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

[4.] If the problem persists, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

** FFE004 -- -- --- Form Filler Plus database failure.
Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

The Form Filler Plus feature failed to access the database during call processing. It is possible that the Form Filler Plus database is corrupted. Applications using the Form Filler Plus feature will fail.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

[4.] If the problem persists and a Form Filler Plus backup is available,

- a. Refer to "Installing Form Filler Plus Software," of *CONVERSANT VIS 4.0 Form Filler Plus*, 585-350-806 for information on restoring Form Filler Plus database speech.
- b. Refer to "Installing Form Filler Plus Software," of *ICONVERSANT VIS 4.0 Form Filler Plus*, 585-350-806 for information on restoring Form Filler Plus database files.

 NOTE:

The Form Filler Plus database speech must be restored before the Form Filler Plus database files.

[5.] If the problem persists or a Form Filler Plus backup is not available, remove and reinstall the Form Filler Plus package as described in "Installing Form Filler Plus Software," of *CONVERSANT VIS 4.0 Form Filler Plus*, 585-350-806.

 NOTE:

All current Form Filler Plus data will be lost as the result of reinstalling this package.

** FFE005 <ct> CH <equip #> Invalid request to Form Filler database from script <script>. Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

An application has made an invalid Form Filler Plus request. This is due to a script programming error. The indicated script will fail.

■ Repair procedure:

1. Consult the application developer to verify the application. Refer to the "For application developer" section below.
- [2.] If the application is determined to be correct, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.
- [3.] If the problem persists and a Form Filler Plus backup is available
 - a. Refer to "Installing Form Filler Plus Software," of *CONVERSANT VIS 4.0 Form Filler Plus*, 585-350-806 for information on restoring Form Filler Plus database speech.
 - b. Refer to "Installing Form Filler Plus Software," of *CONVERSANT VIS 4.0 Form Filler Plus*, 585-350-806 for information on restoring Form Filler Plus database files.



NOTE:

The Form Filler Plus database speech must be restored before the Form Filler Plus database files.

- [4.] If the problem persists or a Form Filler Plus backup is not available, remove and reinstall the Form Filler Plus package as described in "Installing Form Filler Plus Software," of *CONVERSANT VIS 4.0 Form Filler Plus*, 585-350-806 .



NOTE:

All current Form Filler Plus data will be lost as the result of reinstalling this package.

■ For application developer:

1. Check the application (the program and the **application.t** files) to verify that the "script_id" value is all numeric.
- [2.] Check the application to verify that there are no more than 10 FF_Code statements in the application.

** FFE006 -- -- --- Form Filler Plus failed to receive
message. Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

The Form Filler Plus feature failed to communicate with the voice system during call processing. Applications using the Form Filler Plus feature will fail.

■ Repair procedure:

Perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

** FFE007 -- -- --- Form Filler Plus failed to allocate
memory for table <tblname>. Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

The Form Filler Plus feature failed to access a shared resource of the voice system. Applications using the Form Filler Plus feature will fail.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

** FFE008 -- -- --- Form Filler Plus failed to access the
system table <tblname>. Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

The Form Filler Plus feature failed to access a shared resource of the voice system. Applications using the Form Filler Plus feature will fail.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

** FFE009 -- -- --- Form Filler Plus failed to send message
to <process>. Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

The Form Filler Plus feature failed to communicate with the voice system during call processing. Applications using the Form Filler Plus feature will fail.

■ Repair procedure:

Perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

FTS System Messages

*C FTS001 -- -- --- No host session has been assigned to the File Transfer System.

- Message priority:

Critical (*C).

- Description and effect:

The File Transfer System cannot find any session that is in the "File Transfer" state. The File Transfer System cannot transfer the files between the host and the VIS system.

- Repair procedure:

1. Enter:

hstatus

2. Find a free session number *N* on host card 0 (a session within 0-127 and a state of either "free" or "unassign").

3. Enter:

hassign <application_name> to <N> FTSCRT

where <application_name> is the application service name and <N> is the free session number.

** FTS002 -- -- --- Cannot send file <filename> to host.
Reason: No response from host within timeout
period.

■ Message priority:

Major (**).

■ Description and effect:

The File Transfer System cannot send the file to the host because there is no response from the host within timeout period. The file transfer may fail again.

■ Repair procedure:

1. This message may indicate a line problem. Refer to Chapter 4, "Troubleshooting the CONVERSANT VIS Host Interface" of *CONVERSANT VIS 4.0 Host Interface*, 585-350-815, of this book for information about host troubleshooting guidelines.

2. Enter:

sb_te <session numbers>

where <session numbers> is one or more session numbers.

System response:

Check the terminal emulator's status line indicator at the bottom of the display. If X SYSTEMS or X appear, the host is working slowly. Try to send the file again later.

** FTS003 -- -- --- Cannot send file <filename> to host.
Reason: Incorrect option.

■ Message priority:

Major (**).

■ Description and effect:

The File Transfer System cannot send the file to the host because the options in the send command are not correct. The file transfer may fail again unless the options have been corrected.

■ Repair procedure:

Edit PARAM1, PARAM2, or PARAM3 in the */vs/data/fts_config* file (refer to *CONVERSANT VIS 4.0 Host Interface*, 585-350-815, for more information). Each parameter must be one of the available options for the **send** command. Refer to Chapter 4, "Troubleshooting the CONVERSANT VIS Host Interface" of *CONVERSANT VIS 4.0 Host Interface*, 585-350-815, for information about host troubleshooting guidelines.

** FTS004 -- -- --- Cannot send file <filename> to host.
Reason: Cannot initialize the mainframe session.

■ Message priority:

Major (**).

■ Description and effect:

If there is any host error message (HOST) in the log, the system may fail to transfer any file. If there are not host error messages in the log, then the mainframe session is actively performing another file transfer, and nothing is wrong in the system.

■ Repair procedure:

If this message occurs in conjunction with any other host (HOST) error message, refer to that message for the appropriate repair procedure. Otherwise, change the permissions on the indicated file by entering:

chmod 744 filename

where *filename* is the file name in the error message.

** FTS005 -- -- --- Cannot send file <filename> to host.
Reason: Cannot open key mapping file.

■ Message priority:

Major (**).

■ Description and effect:

The File Transfer System cannot send the file to the host because the system cannot open the key mapping file *zancomm.key*. The system will not be able to send any file to the host. This happens when the "DataTalker 3270 U-X, CLEO Communication" package is improperly installed or the file *zancomm.key* has improper permissions or is corrupted.

- Repair procedure:

1. Remove the Data Talker 3270 U-X, CLEO Communication package:

- a. Log in as **root** as the system prompt.

- b. Enter:

removepkg

- c. Follow the instructions provided on the screen.

2. Reinstall the 3270 software. Refer to Chapter 4, "Installing Software for Optional Features," of *CONVERSANT VIS 4.0 Software Installation*, 585-350-111.

** FTS006 -- -- --- Cannot receive file <filename> from host.
Reason: No response from host within timeout
period.

- Message priority:

Major (**).

- Description and effect:

The File Transfer System cannot receive the file from the host because there is no response from the host within timeout period. The file transfer may fail again.

- Repair procedure:

Refer to the repair procedure for system message HOST001 provided in "HOST System Messages" later in this chapter.

** FTS007 -- -- --- Cannot receive file <filename> from host.
Reason: Incorrect option.

■ Message priority:

Major (**).

■ Description and effect:

The File Transfer System cannot receive the file from the host because the options in the receive command are not correct. The file transfer may fail again unless the options have been corrected.

■ Repair procedure:

Edit PARAM1, PARAM2, or PARAM3 in the **/vs/data/fts_config** file. Each parameter must be one of the available options for the **receive** command. Refer to "Isolating 3270 Communication Troubles" in Chapter 2, "Trouble and Failure Indications" of this book.

** FTS008 -- -- --- Cannot receive file <filename> from host.
Reason: Cannot initialize the mainframe session.

■ Message priority:

Major (**).

■ Description and effect:

If there is any host error message (HOST) in the log, the system may fail to transfer any file. If there are no host error messages in the log, then the mainframe session is actively performing another file transfer, and nothing is wrong in the system.

■ Repair procedure:

If this message occurs in conjunction with any other host (HOST) error message, refer to that message for the appropriate repair procedure. Otherwise, change the permissions on the indicated file by entering:

chmod 744 filename

where *filename* is the file name in the error message.

** FTS009 -- -- --- Cannot receive file <filename> from host.
Reason: Cannot open key mapping file.

■ Message priority:

Major (**).

■ Description and effect:

The File Transfer System cannot receive the file from the host because the system cannot open the key mapping file `zancomm.key`. The system will not be able to send any file to the host. This happens when the DataTalker 3270 U-X, CLEO Communication" package is improperly installed or the file `zancomm.key` has improper permissions or is corrupted.

■ Repair procedure:

Remove the DataTalker 3270 U-X, CLEO Communication package

a. Log in as **root** as the system prompt.

b. Enter:

removepkg

c. Follow the instructions provided on the screen.

3. Reinstall the 3270 software. Refer to Chapter 4, "Installing Software for Optional Features," of *CONVERSANT VIS 4.0 Software Installation*, 585-350-111.

** FTS010 -- -- --- Cannot receive file <filename> from host.
Reason: The file does not exist in the host.

■ Message priority:

Major (**).

■ Description and effect:

The File Transfer System cannot receive the file from the host because the file name in the receive command does not exist in the host. The file transfer may fail again unless the file name has been changed or the file has been added in the host.

■ Repair procedure:

Correct the ORIGINATION file name in `/vs/data/fts_config` or add the file into the host.

GEN System Messages

The message priority associated with each of the GEN class of message and its corresponding repair procedure depends on the context of the message received. It is unlikely that these messages will ever appear.

GEN001 -- -- --- ERROR! <msg>

- Message priority:
None.
- Description and effect:
An internal VIS process has encountered a general error described in the message text. System functionality is impaired.
- Repair procedure:
No corrective action is necessary.

GEN002 -- -- --- <msg>

- Message priority:
None.
- Description and effect:
An internal VIS process has logged general status information with this message.
- Repair procedure:
No corrective action is necessary.

GEN020 -- -- --- Wrong number of args: <cmd>.

- Message priority:
None.
- Description and effect:
An internal VIS process has received a command with the incorrect number of arguments. The source of the message is ALERTER, it indicates that a user command was issued with incorrect arguments. The command has been ignored.
- Repair procedure:
No corrective action is necessary.

GEN022 -- -- --- Bad <type> command: <cmd>.

- Message priority:
None.
- Description and effect:
An internal VIS process has received a command which it does not recognize.

If the source of the command is ALERTER, the message indicates that a user command was badly formed or unrecognized by the Alerter. The command has been ignored.
- Repair procedure:
No corrective action is necessary.

GEN050 -- -- --- <parameter> changed from <oldvalue>
to <newvalue>

- Message priority:
None.
- Description and effect:
An internal VIS process has received a command to change one of its internal parameters. The name of the parameter and its old and new values are printed in the message.
- Repair procedure:
No corrective action is necessary.

HOST System Messages

** HOST001 <ct/--> <ca/ch/--> <equip #/--> Host did not respond within Initial timeout <sec> seconds after Send Host Screen. Session <sNum>, host application <appl>.

- Message priority:

Major (**).

- Description and effect:

The application cannot access the host to get data for the call. Either a mismatch exists between the voice system and host configurations, the host has not responded within the Initial Timeout specified in the application for a Send Host Screen action, or the host connection is down.

- Repair procedure:

Ensure that the host connection is made and the voice system host configuration agrees with the host configuration. Specifically, check the LINE_MODE parameter with the DUPLEX parameter from the host. Also, a noisy connection may cause the host to retransmit screens excessively, resulting in slow response times from the host. Refer to "Isolating 3270 Communication Troubles" in Chapter 2, "Trouble and Failure Indications" of this book for information about host troubleshooting guidelines.

- For application developer:

1. Increase the initial timeout value in the Script Builder Host Interface Parameters menu to a period longer than the time it takes the host to respond for the specified application.

[2.] If the problem persists, check the host configuration as described in the repair procedure for this message.

HOST002 <ct/--> <ca/ch/--> <equip #/--> Host did not send an expected screen within Unrecognized Screen Timeout <sec> seconds for Get Host screen. Session <sNum>, host application <appl>.

■ Message priority:

None.

■ Description and effect:

The application cannot get correct data for the call. The host has not sent an expected screen within the Unrecognized Screen Timeout specified in the application for a Get Host Screen action. For some applications unexpected screens are part of the normal flow of the application and can be ignored. However, for other applications, this might show that either the application is not recognizing the screen sent by the host, or the host is taking too long to respond with the expected screen.

■ Repair procedure:

No corrective action is necessary.

*C HOST003 -- -- --- Host card <card #> reset.

All associated sessions attempted recovery <num> times.

■ Message priority:

Critical (*C).

■ Description and effect:

The applications cannot access the host to get data for calls. Either the host is down, the application running on the host (for example, CICS or TSO) is down, a mismatch exists between the voice system and host configurations, or a logic problem exists in the voice system application.

■ Repair procedure:

[1.] Re-establish the connection with the host if resetting the card has disconnected the link. For dialup lines, this involves having the modem dial to or from the host.

2. Free a session of the card. Enter:

hfree <session number>

where <session number> is the number of the session you want to free.

System response:

A message appears, confirming the success or failure of the **hfree** command.

3. Enter:

sb_te <session numbers>

where <session numbers> is one or more session numbers.

System response:

Check the terminal emulator's status line indicator at the bottom of the display. Perform one of the following procedures depending on the state of the status line indicator:

- a. If the status line indicator is either X<-t>, X-f, Xt>, or X?+, press the key configured as the 3270 reset key to unlock the keyboard.
 - i. To unlock the keyboard, press **CONTROL** **(R)**.
 - ii. If the keyboard is still locked, find out what keys do the reset function by pressing **CONTROL** **(K)**. This will display the function of each keystroke on the keyboard.
 - iii. If the keyboard is still locked, press the keys that perform the reset function as shown in the keyboard layout.
 - iv. Re-enter the terminal emulator for every session and unlock each keyboard as necessary.
 - v. It is likely the application assigned to that session at one point sent a screen at an inappropriate time, causing the host to lock the keyboard. Check the logic of the application as described in the "For application developer" section below.
- b. If the status line indicator is a solid box, the host and application running on the host are up. Check the logic of the application as described in the "For application developer" section below.
- c. If the status line indicator is either "?" (question mark) or "0" (zero), ensure that the voice system configuration agrees with the host configuration.
- d. If the status line indicator is "-z_," ensure that the cable and dialup connections are established between the host and the voice system. Refer to the repair procedure given in "HOST System Messages" for system message HOST006 for instructions on bringing up the link.

■ For application developer:

Refer to the Repair procedure for system message HOST013 to debug the host application.

** HOST004 H0 CA <equip #> Failed to <action> on session
<sNum>. Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

The application cannot access the host to get data for the call. The host card failed to do the specified action. Either the keyboard is locked, the host link is down, the session is owned by someone else, or the problem is with the card or configuration.

■ Repair procedure:

1. If the keyboard is locked or you could not write to the card:

[a.] Free a session of the card. Enter:

hfree <session number>

where <session number> is the number of the session you want to free.

System response:

A message appears, confirming the success or failure of the **hfree** command.

[b.] Enter:

sb_te <session numbers>

where <session numbers> is one or more session numbers.

System response:

You are asked to press **(ENTER)** to display the screen currently displayed by the sessions.

[c.] Press the key configured as the 3270 reset key to unlock the keyboard. It is likely that the application assigned to that session at one point sent a screen at an inappropriate time, causing the host to lock the keyboard. Check the logic of the application as described in the "For application developer" section below.

- [2.] If you could not write to the card, ensure that connection between the host and the voice system is not broken as described in the repair procedure for HOST006.

- [3.] If the session is owned by someone else, enter:

ps -ef

to check if another program, like the terminal emulator or file transfer, is using the session. If so, terminate those programs and reassign the application to the session by entering:

hassign <session number>

where <session number> is the number of the session to which you want to assign application.

- [4.] If the card is not responding, it may be broken. Perform the following:
- a. Reset the card through the Host Link screen.
 - b. Perform the "Stopping the Voice System" and "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.
 - [c.] If the problem persists, refer to "Isolating 3270 Communication Troubles" in Chapter 2, "Trouble and Failure Indication" of this book for information about host troubleshooting guidelines.
- [5.] If the session has not been configured, add the session through the Host Link screen. Ensure the configuration file on the host also has the session configured.
- [6.] For other errors or if the problem persists, refer to "Isolating 3270 Communication Troubles" in Chapter 2, "Trouble and Failure Indication" of this book for information about host troubleshooting guidelines.

■ For application developer:

Refer to the repair procedure in "HOST System Messages" for HOST013 system message to debug the host application.

** HOST005 -- -- --- The host has stopped polling for session <sNum>.

■ Message priority:

Major (**).

■ Description and effect:

The application cannot access the host on the specified session to get data for the call. The host has stopped polling or checking the voice system. Either the host is down, a mismatch exists between the voice and host configurations, or the host link is disconnected.

■ Repair procedure:

1. If a HOST017 message is *not* in the message log, enter:

hstatus

to determine if the sessions are recovering or logging in.

-
- [2.] If the sessions are recovering or logging in, wait until this process is complete. No additional steps are necessary.
- [3.] If the sessions are not recovering or logging in, wait until a HOST017 message appears in the message log to: reset the host card through Host Link screen.

a. Perform the "Stopping the Voice System" and "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

- [b.] If the problem persists, free the specified session of the card. Enter:

hfree <session number>

where <session number> is the number of the session you want to free.

System response:

A message appears, confirming the success or failure of the **hfree** command.

- [c.] Enter:

sb_te <session numbers>

where <session numbers> is one or more session numbers.

System response:

You are asked to press **(ENTER)** to display the screen currently displayed by the sessions. Check the terminal emulator's status line indicator at the bottom of the display. Perform one of the following procedure depending on the state of the status line indicator:

i. If the status line indicator is a solid box, the host and application running on the host are up. Ensure that the VIS host configuration is set to agree with the host's configuration. Specifically, check the CU_ADDR and LINE_MODE parameters with the corresponding host's parameters. Refer to Chapter 4, "Troubleshooting the CONVERSANT VIS Host Interface," of *CONVERSANT VIS Host Interface*, 585-350-815, for information about host troubleshooting guidelines.

ii. If the status line indicator is "-z_", ensure that the cable and dialup connections are established between the host and the voice system.

- [d.] If the problem persists, refer to the repair procedure for system message HOST006 in "HOST System Messages" for how to bring up the host link.

*C HOST006 -- -- --- Host link <linkNum> is down.

■ Message priority:

Critical (*C).

■ Description and effect:

The applications cannot access the host to get data for calls. There is no cable, dialup, or session connection to the host.

■ Repair procedure:

1. Ensure that the connection between the host and the voice system is not broken.

[2.] If you are using a modem for a dialup link to the host, ensure that the visual indicator lights on the modem are flashing. This shows that modems are talking to one another. If the visual indicator lights are not flashing, attempt to redial the host through the modem. Once the link is re-established, the sessions will start logging in.

[3.] If the problem persists, ensure that the VIS host configuration is set to agree with the host's configuration. Specifically, check the SLCD_ADDR parameter with the PU_ADDR parameter from the host. Refer to *CONVERSANT VIS 4.0 Host Interface*, 585-350-815, for further information.

** HOST007 <ct/--> <CH/--> <equip #/--> Error in host application <appl>. Reason: <reason>.

- Message priority:

Major (**).

- Description and effect:

The application cannot send a screen of data to the host to get data for the call. The application either tried to send the wrong screen or to write onto a protected field on the screen.

- Repair procedure:

1. Display the screen currently displayed by the session. Enter:

hspy <session number>

where <session number> is the session number you want to display.

System response:

You are asked to press **(ENTER)**. The application may have tried to send a different screen or to write into a protected field.

2. Redefine the logic of your host application to either send the correct screen or not write to the protected field, and reverify and reinstall the host application.

3. Free the specified session. Enter:

hfree <session number>

where <session number> is the number of the session you want to free.

System response:

A message appears, confirming the success or failure of the **hfree** command.

4. To move from the current screen back to the login base screen using the proper screens and keys, enter:

sb_te <session numbers>

where <session numbers> is one or more session numbers.

System response:

You are asked to press **(ENTER)** to display the screen currently displayed by the sessions.

5. If the session does not respond to your input, check the terminal emulator's status line indicator at the bottom of the display.

If the status line indicator is either X<-t>, Xt>, X-f, or X?+, press the key configured as the 3270 Reset key to unlock the keyboard. It is likely that the application assigned to that session at one point sent a screen to an inappropriate time, causing the host to lock the keyboard.

6. Reassign the application back to the session. Enter:

hassign *<application name>* to *<session number>*

where *<application name>* is the name of the application and *<session number>* is the number of the session to which you want to assign the application.

System response:

A message appears, confirming the success or failure of the **hassign** command.

[7.] If the problem persists, use the **sb_trace** command as described in the "For application developer" section of the HOST013 message.

** HOST008 <ct/--> <CH/--> <equip #/--> Received unexpected request to send screen <scName>, session <sNum>, host application <appl>.

- Message priority:

Major (**).

- Description and effect:

The application cannot access the host to get data for the call. The application wants to send a screen when the host has not yet responded to a previous send of another screen.

- Repair procedure:

Check the logic of the application as described in "For application developer" section below.

- For application developer:

Redefine the logic of your host application to wait until the host responds before sending the specified screen. Refer to the repair procedure for system message HOST013 in "HOST System Messages" to debug the host application.

** HOST009 -- -- --- Insufficient number of login IDs/pass-
words, session <sNum>, host application <appl>.

- Message priority:

Major (**).

- Description and effect:

The application cannot access the host to get data for the call. The application failed to log in. The specified session could not attempt to log in to the host because all the application's login IDs/passwords are being used by other sessions.

- Repair procedure:

Either add more login IDs/passwords to the application or do not use any more sessions than login IDs/passwords. To add more login IDs/passwords, refer to the "For application developer" section below.

- For application developer:

1. Verify that the application has defined all its possible login IDs/passwords in the Script Builder Host Interface Parameters menu.

- [2.] If all login IDs/passwords have been exhausted, ask the host administrator to assign more login IDs/passwords to the system, and add them to the application via the Script Builder Host Interface Parameters menu.

*C HOST010 -- -- --- Host Application <appl> definition
error. Reason: <reason>.

- Message priority:

Critical (*C).

- Description and effect:

The application will not run because it is incomplete or improperly defined.

- Repair procedure:

Check the logic of the application as described in the "For application developer" section below.

- For application developer:

1. In your application, perform one of the following procedures depending on the reason specified in the message:

- Verify that the application has defined a transaction base screen.

-
- Verify that the specified field or screen is correctly defined.
 - Verify that the goto statements refer to a defined destination label.
 - Verify that a Get Host Screen action has no more than 40 pages.

[2.] If changes are made to the application, verify, install, and assign the application.

** HOST011 <ct/--> <CH/--> <equip#/--> No response from HELPER DIP in <sec> seconds. Session <sNum>, host application <appl>.

- Message priority:

Major (**).

- Description and effect:

The application cannot access the host to get data for the call. The application depends on the HELPER DIP to identify fields on the screens.

- Repair procedure:

1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, check the logic of the application as described in the "For application developer" section below.

- For application developer:

Refer to "Identifying Similar Host Screens" in Chapter 10, "Using Advanced Features," of *CONVERSANT VIS 4.0 Script Builder*, 585-350-704, for information on the user-programmable interface of the HELPER DIP.

** HOST012 <ct/--> <CH/--> <equip #/---> No session available for call.

- Message priority:

Major (**).

- Description and effect:

The application cannot access the host to get data for the call. Either not enough sessions have been assigned to the application or some sessions assigned to the application are not logged-in to take calls.

- Repair procedure:

1. Verify that there are as many sessions defined as there are voice channels assigned to the application. Enter:

hstatus <application name> or <session number, range, or all>

where <application name> is the host application name and <session number, range, or all> is the number, range, or all of the sessions for which you want to display status.

If the LUs are in the “not available” state, refer to the Host Link screen as described in Chapter 3, “Configuration Management,” of *CONVERSANT VIS 4.0 Operations*, 585-350-703, to configure the LUs.

- [2.] Verify that the application has enough sessions logged-in ready to handle calls. Enter:

hstatus <application name> or <session number, range, or all>

where <application name> is the host application name and <session number, range, or all> is the number, range, or all of the sessions for which you want to display status.

- a. If the application is not assigned to this LU, assign as many sessions as needed by entering:

hassign <application name> to <session number>

where <application name> is the name of the application and <session number> is the number of the session to which you want to assign the application.

System response:

A message appears, confirming the success or failure of the **hassign** command.

- b. If a LU is assigned to application but in the “logged out” state, enter:

hlogin <session number>

to log in logged-out sessions.

[3.] Determine if some sessions are in the recovery state. This could be caused by faulty logic in the application. Enter:

hstatus *<application name>* or *<session number, range, or all>*

where *<application name>* is the host application name and *<session number, range, or all>* is the number, range, or all of the sessions for which you want to display status.

[4.] If some sessions are in recovery, check the logic of the application as described in the "For application developer" section below.

- For application developer:

Refer to the repair procedure for system message HOST013 in "HOST System Messages" to debug the host application.

** HOST013 -- -- --- All sessions assigned to host application *<appl>* are recovering.

- Message priority:

Major (**).

- Description and effect:

The application cannot access the host to get data for the call. Either the host is down, the application running on the host (for example, CICS or TS0) is down, or a logic problem exists in the application.



NOTE:

This message can also be caused by stopping the voice system before all session were logged out.

- Repair procedure:

1. Free a session of the card. Enter:

hfree *<session number>*

where *<session number>* is the number of the session you want to free.

System response:

A message appears, confirming the success or failure of the **hfree** command.

2. Enter:

sb_te *<session numbers>*

where *<session numbers>* is one or more session numbers.

System response:

Check the terminal emulator's status line indicator at the bottom of the display. Perform one of the following procedures depending on the state of the status line indicator:

- a. If the status line indicator is either X<-t>, X-f, Xt>, or X?+, do the following:
 - i. To unlock the keyboard, press **CONTROL** **(R)**.
 - ii. If the keyboard is still locked, find out what keys do the reset function by pressing **CONTROL** **(K)**. This will display the function of each keystroke on the keyboard.
 - iii. If the keyboard is still locked, press the keys that perform the reset function as shown in the keyboard layout.
 - iv. Re-enter the terminal emulator for every session and unlock each keyboard as necessary.
 - v. It is likely that the application assigned to that session at one point sent a screen at an inappropriate time, causing the host to lock the keyboard. Check the logic of the application as described in the "For application developer" section below.
 - b. If the status line indicator is a solid box, the host and application running on the host are up. Check the logic of the application as described in the "For application developer" section below.
 - c. If the status line indicator is either "?" (question mark) or "0" (zero), ensure that the voice system configuration agrees with the host configuration.
 - d. If the status line indicator is "-z_," ensure that the cable and dialup connections are established between the host and the voice system. Refer to the repair procedure for system message HOST006 in "HOST System Messages" for instructions on bringing up the link.
- [3.] If this message occurred because a **stop_vs** was performed before all sessions logged out, use the following procedure:
- a. Free all sessions assigned to the application or the card by entering:
hfree <application> or <session number, range or all>
where *<application>* is the name of the host application and *<session number, range, or all>* is the number of the session(s) you want to free.

System response:

A message appears, confirming the success or failure of the **hfree** command.

- b. Use the terminal emulator on all of the recovering sessions to manually move the sessions to the login base screen using the screens and keys. Enter:

sb_te <session numbers>

where *<session numbers>* is one or more session numbers.

System response:

The current screen on the sessions is displayed.

- c. Use the **hassign** command to reassign the application to all the sessions and verify that all sessions become logged in.

 NOTE:

The next time a **stop_vs** is executed, use the **hlogout** command prior to **stop_vs** to log out the sessions before stopping the voice system.

■ For application developer:

1. Determine if some sessions are in the recovery state. This could be caused by faulty logic in the application. Enter:

hstatus <application name> or <session number, range, or all>

where *<application name>* is the host application name and *<session number, range, or all>* is the number, range, or all of the sessions for which you want to display status.

2. Display the screen currently displayed by the session. The application may not recognize or expect the screen sent by the host. Enter:

hspy <session number>

where *session number* is the session number you want to display.

System response:

You are asked to press **ENTER**.

3. If the screen is new, changed, or improperly identified in the application, recapture and identify this screen through the Script Builder Define Host Screens menu.
 4. Assure that the screen is received and sent in the proper places in the application.
 5. Reverify and reinstall the application if changes were made to the application and/or screens.
- [6.] If the problem persists, repeat Steps 1-5 until all screens are properly defined.

-
- [7.] If all the screens are properly defined and accounted for in the application, free all sessions assigned to the application or the card, if necessary. Enter:

hfree *<application>* or *<session number, range, or all>*

where *<application>* is the name of the host application and *<session number, range, or all>* is the number of the session(s) you want to free.

System response:

A message appears, confirming the success or failure of the **hfree** command.

8. Use the terminal emulator on one of the recovering sessions to determine what current screen the host is displaying. This could help locate the trouble area in the application.
9. To move from the current screen back to the login base screen using the proper screens and keys, enter:

sb_te *<session numbers>*

where *<session numbers>* is one or more session numbers.

System response:

The current screen on the sessions is displayed.

10. If the session does not respond to your input, check the terminal emulator's status line indicator at the bottom of the display.

If the status line indicator is either X<-t>, X-f, Xt>, or X?+, press the key configured as the 3270 Reset key to unlock the keyboard. It is likely that the application assigned to that session at one point sent a screen at an inappropriate time, causing the host to lock the keyboard.

11. Save all screens sent and received from/to that session. This might show extra screens not accounted for in the application. Enter:

sb_trace *<session number>*

where *<session number>* is the number of the session you want to trace.

System response:

A message appears, confirming the success or failure of the **sb_trace** command.

12. Reassign the application back to that session. Enter:

hassign *<application name>* to *<session number(s)>*

where *<application name>* is the name of the host application name and *<session number(s)>* is the number of the session(s) you want to assign to the specified application.

System response:

A message appears, confirming the success or failure of the **hassign** command.

13. Place a call into the application if necessary to make the session go into recovery.
14. Verify that the session is recovering. Enter:

hstatus *<application name>* or *<session number, range, or all>*

where *<application name>* is the host application name and *<session number, range, or all>* is the number, range, or all of the sessions for which you want to display status.

15. Once recovering, use the **hfree** command to free the session and look through the screens saved by **sb_trace** to identify the point where the wrong screen is being sent or received.
16. Use the terminal emulator as described in Step 9 to bring this session and all others back to the log-in base screen.
17. Capture or redefine the appropriate screens and fix the logic of the application to reflect the sequence of screens sent and received. Refer to Chapter 10, *CONVERSANT VIS 4.0 Script Builder*, 585-350-704, for more help in defining the application.
18. Reverify and reinstall the host application.
19. Reassign the application on one session by entering:

hassign *<application name>* to *<session number(s)>*

where *<application name>* is the name of the host application and *<session number(s)>* is the number of the session(s) you want to assign to the specified application.

System response:

A message appears, confirming the success or failure of the **hassign** command.

20. Verify that the application logs in and returns to logged-in after a call is finished.

If it does not return to logged-in, repeat the debugging steps above.
21. Use the **hassign** command to reassign the application to the rest of the sessions and verify that all sessions become logged in.

HOST014 -- -- --- Session(s) for host application <appl> are now available.

- Message priority:
None.
- Description and effect:
At least one session has recovered and is now logged in for the application to take a call.
- Repair procedure:
No corrective action is necessary.

*C HOST015 -- -- --- HOST DIP hibernating as a result of fatal error.

- Message priority:
Critical (*C).
- Description and effect:
The applications cannot access the host to get data for calls. The HOST DIP has stopped handling calls. This is normal when the voice system is stopped, and in this case the message can be ignored. If the voice system is still running, the message might indicate internal problems in the HOST DIP.
- Repair procedure:
 1. If the voice system is running, determine if the HOST DIP is running.
Enter:
hstatus all
 - [2.] If all sessions are shown "not available," the HOST DIP is not running. Perform the "Stopping the Voice System" and "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

*C HOST016 H0 CA <equip #> Cannot access 3270 host
communication card

■ Message priority:

Critical (*C).

■ Description and effect:

The system cannot communicate with the host. This shows that the HOST DIP cannot open the host card. This problem occurs when the host card is stuck in an inactive state. It is typically caused by an error between the voice system and the host (a dropped host link, power hit on the voice system, etc).

■ Repair procedure:

1. Shutdown the UNIX system using the "Shutting Down the Operating System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Power up the platform.

Refer to "Isolating 3270 Communication Troubles" in Chapter 2, "Trouble and Failure Indications" of this book for information about host troubleshooting guidelines.

** HOST017 -- -- ---Session <sNum> for host application
<appl> is still trying to reach the transaction base screen
about <tries> recovery attempts.

■ Message priority:

Major (**).

■ Description and effect:

The session assigned to the application is not available to handle calls. It will continue to retry the login and/or recover sequences specified in the application. Either the host is down, the application running on the host (for example, CICS or TSO) is down, or a logic problem exists in the application.

■ Repair procedure:

Refer to the repair procedure in "HOST System Messages" for system message HOST013.

HOST018 -- -- --- Session <sNum> for host application <appl>
has reached the transaction base screen after <tries>
recovery attempts.

- Message priority:

None.

- Description and effect:

The session assigned to the application is now
available to handle calls.

- Repair procedure:

No corrective action is necessary.

ICK System Messages

* ICK001 -- -- --- <reason> - <object>

■ Message priority:

Minor (*).

■ Description and effect:

The integrity checking process has received an invalid request. The request has been ignored.

■ Repair procedure:

1. Verify that commands being sent to the integrity checking process are using **iCkCmd**. Refer to *CONVERSANT VIS 4.0 Command Reference*, 585-350-209, for further information on usage.

[2.] Verify that the files **/vs/bin/vrs/iCk** and **/vs/bin/utill/iCkCmd** have the same date.

* ICK002 -- -- --- <description> - <object>

■ Message priority:

Minor (*).

■ Description and effect:

The integrity checking process has encountered an internal error.

■ Repair procedure:

If the <description> is similar to:

Activity index <NN> is out of range: <MMM> Current limits: 0 to <NN>

the integrity checking process will automatically correct the problem.

If the <description> is similar to:

Time computation failed - <XXX>

edit the **/vs/etc/lick.rules** file and correct the time description "XXX."

ICK003 -- -- --- <cmd>

- Message priority:
None.
- Description and effect:
The integrity checking process has received a command request.
- Repair procedure:
No corrective action is necessary.

ICK004 -- -- --- File: <file> Good rules: <num> Errors:
<errors>

- Message priority:
None.
- Description and effect:
The integrity checking process has just completed reading its rules file.
- Repair procedure:
No corrective action is necessary.

ICK005 -- -- --- Auto-reboot flag changed to -><new_state><-

- Message priority:
None.
- Description and effect:
The integrity checking process has changed the state of the UNIX kernel auto-reboot flag to state identified.
- Repair procedure:
No corrective action is necessary.

ICK006 -- -- --- <description>

- Message priority:
None.
- Description and effect:
The identified action has been taken by the integrity checking process.
- Repair procedure:
No corrective action is necessary.

** ICK007 -- -- --- <dir> is insecure because <reason>.

- Message priority:
Major (**).
- Description and effect:
The directory in which the integrity checking process' rules file appears is accessible by non-authorized users. The rules file is insecure and is vulnerable to corruption which may impact system functionality.
- Repair procedure:
Verify that the directory in which the rules file appears is owned by **root** and is not writable by any other user. Enter:

ls -ld /vs/etc

Output should be similar to:

drwxr-xr-x 3 root bin 64 Dec 30 12:11 /vs/etc

- a. If the mode is incorrect (that is, not drwxr-xr-r), enter:

chmod 755 /vs/etc

- b. If the owner is incorrect (that is, not root), enter:

chown root /vs/etc

- c. If the group is incorrect (that is, not bin), enter:

chgrp bin /vs/etc

** ICK008 -- -- --- <file> is insecure because <reason>.

- Message priority:

Major (**).

- Description and effect:

The rules file used by the integrity checking process is accessible by non-authorized users. The rules file is insecure and is vulnerable to corruption which may impact system functionality.

- Repair procedure:

Verify that the rules file is owned by **root** and is not writable by any other user. Enter:

ls -ls /vs/etc/iCk.rules

Output should be similar to:

-r--r--r-- 1 root other 6815 Dec 30 12:11 /vs/etc/iCk.rules

a. If the mode is incorrect (that is, not **-r--r--r--**), enter:

chmod 444 /vs/etc/iCk.rules

b. If the owner is incorrect (that is, not **root**), enter:

chown root /vs/etc/iCk.rules

ICK009 -- -- --- <file> (<size>) <action>.

- Message priority:

None.

- Description and effect:

The integrity checking process has found the specified file to be larger than allowed by a rule which has been executed, or to not be regular. The specified reduction procedure has been performed.

- Repair procedure:

No corrective action is necessary.

* ICK010 -- -- --- <file> - <problem> <action>.

■ Message priority:

Minor (*).

■ Description and effect:

The integrity checking process has found a file specified by a rule that does not comply with the requirements of the rule. Depending upon the rule, the integrity checking process may attempt to correct the problem or just report it.

■ Repair procedure:

If the message does not indicate that the problem has been automatically corrected, determine why the specified file is failing the rule test and correct it using one of the following:

- a. If the message indicates an error with the mode, refer to the **chmod** UNIX command to change the mode.
- b. If the message indicates an error with the group, refer to the **chgrp** UNIX command to change the group.
- c. If the message indicates an error with the owner, refer to the **chown** UNIX command to change the owner.
- d. If the message indicates that the file does not exist, create the file. If the file is a UNIX file, refer to a UNIX reference manual for additional information. If the file is specific to your application, consult your application developer.

ICK011 -- -- --- Changing to run level <level> <reason>.

■ Message priority:

None.

■ Description and effect:

The integrity checking process is changing to the specified run level. A change in run levels affects which rules are in force.

■ Repair procedure:

No corrective action is necessary.

INIT System Messages

*C INIT001 -- -- --- All system configuration data lost.
Assuming default values.

- Message priority:

Critical (*C).

- Description and effect:

The system configuration from the previous operation of the voice system is completely lost. All administered values are set to their default states. Administrative action is required to assign services to channels and put channels in the INSERV state. Card functionality must be specified in order for the system to operate under any configuration other than the default settings.

No calls can be processed until the system has been readministered.

- Repair procedure:

1. Check and administer the analog and digital switch interfaces as described in Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.
2. Check and administer the voice equipment as described in Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.

** INIT002 <ct> CA <equip #> Cannot find card. (Expecting dipswitch setting <dipswitch>).

- Message priority:

Major (**).

- Description and effect:

The identified card, previously recognized to be present in the system, cannot be located. Call processing may be impaired.

- Repair procedure:

1. If the identified card is to be removed permanently from the VIS, renumber the voice channels as described in Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.

[2.] If the problem persists, perform the "Checking a Card" procedure for the identified card described in Chapter 4, "Common Maintenance Procedures" in this book.

INIT003 <ct> CA <equip #> New card recognized. (Dipswitch setting <dipswitch>).

- Message priority:
None.
- Description and effect:
The identified card has been added to the system. The card is initialized with default values and requires administration before it is operational.
- Repair procedure:
No corrective action is necessary.

INIT004 -- -- --- Administrative action taken to renumber channels.

- Message priority:
None.
- Description and effect:
Channels have been renumbered at the request of a system administrator.
- Repair procedure:
No corrective action is necessary.

** INIT005 -- -- --- Cannot save system configuration data to hard disk.

- Message priority:

Major (**).

- Description and effect:

The VIS was unable to save the current configuration to disk.

CAUTION: Should the voice system be stopped and started, some or all of the voice system administered values may be lost.

- Repair procedure:

Ensure that the current user id has write permission for the following files:

/gendb/shmem/devtbl

/gendb/shmem/transconfig

LOG System Messages

LOG001 -- -- --- ** START OF LOGFILE '<file>' ** <function>

- Message priority:
None.
- Description and effect:
The VIS Logger has started a new message log file.
- Repair procedure:
No corrective action is necessary.

LOG002 -- -- --- ** END OF LOGFILE '<oldfile>' - NEXT IS
'<newfile>' ** <function>

- Message priority:
None
- Description and effect:
The VIS Logger has closed one message log file and is starting a new message log file.
- Repair procedure:
No corrective action is necessary.

```
LOG006 -- -- --- Invalid message number passed to log().  
          <format>
```

■ Message priority:

Message priority based on the priority of the message id passed to the Logger.

■ Description and effect:

The VIS Logger has been asked to log a message type which is invalid and which it cannot expand into a readable form for the message log.

■ Repair procedure:

1. Identify the source of the unexpected message. The name of the source should be part of the compressed message format of the invalid message.
2. If the source of the unexpected message is a customer application data interface process (DIP), refer to the LOG007 message.

Otherwise, confirm that all installed VIS software packages are compatible with the installed version of the Intuity CONVERSANT Application Software package. Remove any software package that is incompatible and install the proper version.

```
LOG007 -- -- --- logDaemon: <string1> <string2>.
```

 NOTE:

This message can have up to seven different values for the *<string1>* and *<string2>* fields. The description and effect statement and the corresponding repair procedure differs for each of the values. Use the alphabetic list below to determine the proper description and effect statement and repair procedure for the LOG007 message you have encountered.

a. If logDaemon: msgsrc=-1, errno NOT EINTR:

■ Message priority:

Critical (*C).

■ Description and effect:

The VIS message Logger cannot communicate with other internal VIS processes. Logger functionality is severely impaired.

■ Repair procedure:

Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

b. If logDaemon: Cannot create <file>.:

- Message priority:
Critical (*C).
- Description and effect:
The VIS message Logger has failed to create a new message log file. Logger functionality is severely impaired.
- Repair procedure:
Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

c. If logDaemon: PID <pid> <msg>.:

- Message priority:
None.
- Description and effect:
The VIS message Logger has been started or reinitialized. This message will appear in each log file maintained by the Logger.
- Repair procedure:
No corrective action is necessary.

d. If logDaemon: REINITIALIZED.:

- Message priority:
None.
- Description and effect:
The VIS message Logger has received a command to reinitialize.
- Repair procedure:
No corrective action is necessary.

e. If logDaemon: Exiting upon request.:

- Message priority:
None.
- Description and effect:
The VIS message Logger has received a command to exit.
- Repair procedure:
No corrective action is necessary.

f. If logDaemon: Unable to open: <command>.:

- Message priority:

Critical (*C).

- Description and effect:

The VIS message Logger is unable to execute the UNIX command indicated by the message. Logger functionality is impaired.

- Repair procedure:

1. Make sure the UNIX command file being executed by the logger exists and is executable.

[2.] If necessary, restore the missing or corrupted UNIX command file indicated in the message from a system backup. If no valid backup copy exists, perform the "Reinstalling the CONVERSANT Application Software Package" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

MTC System Messages

** MTC001 <ct> CA <equip #> Clock not present on card.

- Message priority:

Major (**).

- Description and effect:

The card identified in the message is unable to provide TDM clock to the system. This may indicate a possible hardware problem with the card. The card state has been changed to BROKEN. Applications dependent on this card will not function.

- Repair procedure:

1. Diagnose the card by entering:

diagnose card <card number>

where <card number> is the number of the affected card.

2. After the diagnose command has completed, display the state of the card by entering:

display card <card number>

where <card number> is the number of the affected card.

- a. If the card state has changed to MANOOS, restore the card into service by entering:

restore card <card number>

where *card number* is the number of the affected card.

- b. If the card state remains BROKEN, perform the "Checking a Card" procedure for the identified card described in Chapter 4, "Common Maintenance Procedures" in this book.

MTC002 <ct> <ca/ch> <equip #> Changed state from <old_state> to <new_state>.

- Message priority:

None.

- Description and effect:

The identified card or channel has had a state transition as the result of an external condition.

- Repair procedure:

No corrective action is necessary.

** MTC003 <ct> CA <equip #> Changed state from <old state> to BROKEN.

■ Message priority:

Major (**).

■ Description and effect:

The identified card has had a state transition as the result of a user-initiated action. The card state has been changed to BROKEN. Applications dependent on this card will not function.

If the identified card is the only SP card on the system that was providing speech playback functionality for the T/R cards on the system, the voice system will automatically change the equipment option of the T/R cards from "tdm" to "talk". This option is shown under "OPTS" heading when the "display card" command is invoked. The changing of this option enables the T/R cards to perform speech playback on their own, in the absence of an SP card, thus maintaining overall system functionality. However, note that this configuration does not support barge-in functionality. Once the SP card is restored to service, the T/R card options need to be manually changed to "tdm".

■ Repair procedure:

1. If any packages have been removed from the system recently, verify that any related cards, functions, etc, have been unassigned from the application so that the affected card does not come up in the "Broken" state. Refer to Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.
2. If the state transition was not initiated by a **diagnose** command, diagnose the card. To do this, enter:

diagnose card <card number>

where <card number> is the number of the affected card.

3. After the **diagnose** command has completed, display the state of the card by entering:

display card <card number>

where <card number> is the number of the affected card.

- [4.] If the card is in the MANOOS state:

- a. Diagnose the TDM bus by entering:

diagnose bus 1

- b. Display the state of the card by entering:

display card <card number>

where <card number> is the number of the affected card.

- [c.] If the card is in the BROKEN state, perform the "Checking a Card" procedure for the identified card described in Chapter 4, "Common Maintenance Procedures" in this book.
- [d.] If the card is in the MANOOS state, restore the card into service by typing:

restore card <card number>

- [5.] If the card is in the BROKEN state, perform the "Checking a Card" procedure for the identified card described in Chapter 4, "Common Maintenance Procedures" in this book.

MTC004 <ct> CA <equip #> Diagnostics started on card.

- Message priority:
None.
- Description and effect:
Diagnostic tests have been started on the identified card.
- Repair procedure:
No corrective action is necessary.

MTC005 <ct> CA <equip #> Card passed diagnostics.

- Message priority:
None.
- Description and effect:
The identified card has successfully passed all diagnostic tests performed.
- Repair procedure:
No corrective action is necessary.

** MTC006 <ct> CA <equip #> Diagnostics failed on card.
Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

The identified card has failed one or more diagnostic tests. The card state has been changed to BROKEN. Applications dependent on this card will not function.

■ Repair procedure:

Perform the "Checking a Card" procedure for the identified card described in Chapter 4, "Common Maintenance Procedures" in this book.

RECOG System Messages

** RECOG001 -- -- --- Speech Recognition failed to receive message. Reason: <reason>.

- Message priority:

Major (**).

- Description and effect:

The Speech Recognition (SR) feature failed to communicate with the voice system during call processing. Applications using the SR feature will fail.

- Repair procedure:

Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** RECOG002 <ct> <ca/ch> <equip #> Speech Recognition failed to receive valid response from SP. Reason: <reason>.

- Message priority:

Major (**).

- Description and effect:

The Speech Recognition (SR) feature received an invalid response from the SP/CMP cards or experienced a timeout in communicating with the SP/CMP cards during call processing. Applications using the SR feature will be incomplete.

- Repair procedure:

1. Perform diagnostics for the SP card.

- a. Enter:

diagnose card <card number>

where <card number> is the card number of the SP card.
This command also diagnoses the CMP card.

- b. If the card passes diagnostics, place it back in service by entering:

restore card <card number>

where <card number> is the card number of the SP card you want to restore to service.

-
2. Perform the "Checking a Card" procedure for all SP cards to which RECOG functionality is assigned, described in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Stopping the Voice System" and the "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

** RECOG003 -- -- --- Speech Recognition failed to send message to <process>. Reason: <reason>.

- Message priority:

Major (**).

- Description and effect:

The Speech Recognition (SR) feature failed to communicate with the voice system during call processing. Applications using the SR feature will fail.

- Repair procedure:

Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

* RECOG004 -- CH --- Invalid grammar or wordlist <gram> received from script <appl>.

- Message priority:

Minor (*).

- Description and effect:

An invalid whole-word grammar or sub-word wordlist number was used by a Prompt and Collect action or by the getdig script instruction. Recognition failed.

- Repair procedure:

See the "For application developer" section.

- For application developer:

1. Re-verify the application to ensure that the Prompt and Collect action is using a valid whole-word grammar or sub-word wordlist number.

[2.] If the problem persists, reinstall the speech recognition languages or the sub-word vocabulary.

 NOTE:

Developers using native script language instead of Script Builder should check the fields used with the **getdig()** instruction for an invalid grammar or wordlist number.

SCCS System Messages

* SCCS001 -- -- --- <file> is damaged. <fault>.

■ Message priority:

Minor (*).

■ Description and effect:

The specified parameter file which controls the behavior of the sccsDaemon process is damaged. This is the result of improper administration of the specified file or damage to the file system. Default parameter values will be used.

■ Repair procedure:

Appropriate action is dependent upon the suspect parameter file:

a. If <file> is **/vs/data/Machname**, enter:

chg_machine

to respecify the name of the machine to be monitored.

b. If <file> is **/vs/data/console_stat**, enter:

console_off or **console_on**

to disable or enable the flow of error messages to the system console.

c. If <file> is **/vs/data/Sccs_tty**, enter:

assign_tty

to reassign the SCCS device.

d. If <file> is **/vs/data/Aru_tty**, enter:

assign_tty

to reassign the ARU device.

* SCCS002 -- -- --- SCCS/Compulert connection over <device>
has gone down.

■ Message priority:

Minor (*).

■ Description and effect:

The physical link to the SCCS system monitoring the VIS system has gone down. Messages that should be sent to the SCCS will not be transmitted.

■ Repair procedure:

The exact cause of the problem depends upon the type of physical link between the SCCS system and the VIS system. Refer to *CONVERSANT VIS 4.0 Host Interface*, 585-310-815, to verify the link connection and configuration.

* SCCS003 -- -- --- Ignoring bad verbosity value: <arg>.

■ Message priority:

Minor (*).

■ Description and effect:

A command to change the debugging verbosity within the sccsDaemon process has been incorrectly formatted.

■ Repair procedure:

Verify that the command is of the form

/vs/bin/vrs/sccsDaemon -c verbosity {value}

where {value} is a number. Using the value 0 turns off verbosity messages.

* SCCS004 -- -- --- Ignoring <cnt> unexpected argument(s).

■ Message priority:

Minor (*).

■ Description and effect:

Extraneous arguments were supplied to the sccsDaemon process when it was executed.

■ Repair procedure:

Examine the file ***/etc/inittab*** for the “CVsd” entry. It should be of the form:

/vs/bin/vrs/sccsDaemon [-v NNN]

Anything other than the optional **-v** command followed by a number should be removed.

**** SCCS005 -- -- --- No machine name provided.**

- Message priority:

Major (**).

- Description and effect:

The file containing the name of the machine being monitored by the SCCS is missing or its contents have been damaged or removed.

- Repair procedure:

Enter:

chg_machname

to recreate this file. Refer to the *ICONVERSANT VIS 4.0 Command Reference*, 585-350-209, for additional information about the **chg_machine** command.

SCCS006 -- -- --- Received command: <cmd>.

- Message priority:

None.

- Description and effect:

A command request has been received.

- Repair procedure:

No corrective action is necessary.

*** SCCS007 -- -- --- Unrecognized command: <cmd>.**

- Message priority:

Minor (*).

- Description and effect:

A special command was received that was poorly formed. The command has been ignored.

-
- Repair procedure:

Ensure that all commands sent are done so via the command:

sccsDaemon -c {cmd}

* SCCS008 -- -- --- Ambiguous command: <cmd>.

- Message priority:

Minor (*).

- Description and effect:

A special command was received that could match more than one possible command. The command has been ignored.

- Repair procedure:

Ensure that all commands sent are done so via the command:

sccsDaemon -c {cmd}

SCCS009 -- -- --- <critical> critical, <major> major, <minor> minor, and <informational> informational messages were not transmitted while connection to SCCS/Compulert was out of service.

- Message priority:

The priority of this message is set to be that of the highest priority message that was discarded.

- Description and effect:

While the physical connection to the SCCS system was down, messages that would have been transmitted to the SCCS were discarded. The counts supplied indicate how many messages of each severity were discarded. The priority of the message is set to be that of the highest priority message that was discarded.

- Repair procedure:

No corrective action is necessary.

SCCS010 -- -- --- sccsDaemon quitting upon request.

- Message priority:

None.

- Description and effect:

A request for the SCCS process to exit has been received and is being implemented. If the VIS is at a run level at which the SCCS should be running, a new SCCS process will automatically be respawned.

- Repair procedure:

No corrective action is necessary.

SP System Messages

SP001 SP CA <equip #> (<secs>.<hsecs> secs) <SP print string>.

- Message priority:
None.
- Description and effect:
Pack files running on SP cards can "print" information by having it logged. Such "print" requests appear in the log files as SP001 (LGSP_PRINTF) event messages.
- Repair procedure:
No corrective action is necessary.

SP002 SP CA <equip #> (<secs>.<hsecs> secs) Unrecognized RPC request: <address>.

- Message priority:
None.
- Description and effect:
A pack file running on an SP card has made an illegal "remote procedure call" (RPC) request. Incidents should be escalated to your support organization.
- Repair procedure:
No corrective action is necessary.

SP003 SP CA <equip #> (<secs>.<hsecs> secs)
arg[0]=<arg0>(<string>),
arg[1]=<arg1>(<string>(<num>,<num>,<num>)) <string>

- Message priority:
None.
- Description and effect:
A pack file running on an SP card has encountered an error and wishes to log certain information which may help the support personnel in diagnosing the problem.

In addition, an alarm will be logged if manual intervention is required.

-
- Repair procedure:
No corrective action is necessary.

SP004 SP CA <equip #> (<secs>.<hsecs> secs)
Type: <string><string>

- Message priority:
None.
- Description and effect:
A pack file running on an SP card has encountered an error from which it cannot recover. It is logging some information that may help the support organization in diagnosing the problem.

In addition, an alarm will be logged if manual intervention is required.
- Repair procedure:
No corrective action is necessary.

SP005 SP CA <equip #> Act: <number>,
Task: <taskName> (<taskIndex>), Timeslot: <timeSlot>,
Elapsed Time: <elapsed>, CPU Time: <cpu>,
Bytes Processed: <bytesProcessed>,
Discarded: <bytesDiscarded>, # of TDM Servings: <tdmCnt>,
of DSP Servings: <dspCnt>

- Message priority:
None.
- Description and effect:
A pack file running on an SP card is logging certain information about the termination of an activity running on the SP card. These messages will not appear unless the pack file is specifically requested to generate them. They are used by the support organization.
- Repair procedure:
No corrective action is necessary.

SP006 SP CA <equip #> PID: <pid>, Act: <number>, Task:
<taskName>(<taskIndex>), Timeslot: <timeSlot> , Elapsed
Time: <elapsed>, CPU Time: <cpu>, Exit Value: <exit>

- Message priority:

None.

- Description and effect:

A pack file running on an SP card is logging certain information about the termination of a process running on the SP card. These messages will not appear unless the pack file is specifically requested to generate them. They are used by the support organization.

- Repair procedure:

No corrective action is necessary.

SP007 SP CA <equip #> Type: <typeIndex> <typeName>, Deepest
Stack Usage: <deepest>(<address>)

- Message priority:

None.

- Description and effect:

A pack file running on an SP card is logging certain information about the condition of a process stack on the SP card. These messages will not appear unless the pack file is specifically requested to generate them. They are used by the support organization.

- Repair procedure:

No corrective action is necessary.

SPIP System Messages

SPIP001 SP CA <equip #> Speechbreak detected on channel <chan #>. Cause Code: <cause #>.

- Message priority:

None.

- Description and effect:

A speech break has been detected during a coding or voice playback session involving an SP card. The coded voice is incomplete, or inappropriate silence was inserted into the playback session. This condition may be attributed to excessive load either on the system or the SP card, or the SP card may be broken. The Cause Code field of the message may be used to further isolate the cause. If the Cause Code field is negative, the problem is caused by the companion card(s).

The impact of this error is not severe and no action is warranted if the message is reported less frequently than the threshold limit.

The impact may be significant if the message occurs more frequently than the currently set threshold limit. In that case, you will see a threshold message similar to the following:

```
** THR003 -- -- --- The first threshold level for
SPIP_SBRK exceeded. 50 messages have been generated in
the last 3 minutes.
```

The threshold limits and threshold message priority shown above reflect the default values for this thresholded message.

- Repair procedure:



NOTE:

Perform the following procedure if the thresholded message is reported for SPIP001.

- [1.] If the Cause Code in the message is 0, 1, 8, or 9, the problem may be caused either by a broken SP or an overloaded card. A negative 1, 8, or 9 means a problem may exist with the companion (CMP) card(s) attached to the SP card. Perform the following procedure.

-
- a. Perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
 - b. If the problem persists, refer to the "For application developer" section below.
- [2.] If the Cause Code number is other than 0, 1, 8, or 9, the problem may be caused by the excessive load on the VIS system. Refer to the "For application developer" section below.

 NOTE:

Perform the following procedure if you have more than one SP card and see SPIP001 repeatedly for the same SP card.

1. Diagnose the card by entering:

diagnose card *<card number>*

where *<card number>* is the card number of the SP card.

2. Replace the SP card and/or the CMP card attached to the SP if the problem persists.

■ For application developer:

1. Perform the "Reducing Load" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

* SPIP002 SP CA *<equip #>* Speech output signal level was too high on *<chan #>*.

■ Message priority:

Minor (*).

■ Description and effect:

The output signal level on an SP timeslot approached the level deemed too loud for a telephone network by the FCC. The output signal was thus interrupted until the signal level dropped below the threshold of noncompliance. The caller will hear inappropriate silence or chopped speech during the speech playback session.

■ Repair procedure:

1. Consult with the application developer and check the speech phrases of the application. The speech may have been recorded at too high a volume level. Rerecord the speech following the procedures documented in Chapter 10, "Using Advanced Features" of *CONVERSANT VIS 4.0 Script Builder*, 585-350-704.

[2.] Refer to "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on checking the outgoing speech volume (OVOL). The default OVOL is 1000 for analog and 707 for digital. Reduce the current analog or digital OVOL value depending on the channel type if it exceeds the default.

[3.] If the problem persists, replace the SP card.

* SPIP003 SP CA <equip #> Unexpected SR behavior on CMP <num>

■ Message priority:

Minor (*).

■ Description and effect:

Unexpected SR behavior occurred on the SP/CMP card set. The SP/CMP has automatically recovered. The impact of this error is not severe and no action is warranted if the message is reported less frequently than the threshold limit.

The impact may be significant if the message occurs more frequently than the currently set threshold limit. In that case, you will see a threshold message similar to the following:

```
** THR003 -- -- --- The first threshold level for
                    SPIP_CMP_SOF exceeded. 10 messages have been
                    generated in the last 5 minutes.
```

The threshold limits and threshold message priority shown above reflect the default values for this thresholded message.

■ Repair procedure:

⇒ **NOTE:**

Perform the following procedure if the thresholded message is reported for SPIP003.

1. Perform diagnostics for the SP card.

a. Enter:

diagnose card <card number>

where <card number> is the card number of the SP card.

b. If the card passes diagnostics, place it back in service by entering:

restore card <card number>

where *<card number>* is the card number of the SP card you want to restore to service.

2. Perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C SPIP004 SP CA <equip #> SR hardware failure on CMP <num>

- Message priority:
Critical (*C).
- Description and effect:
An error occurred on the SP/CMP card set. The SP/CMP card set was not able to recover from this error. Applications using the SR feature may fail.
- Repair procedure:
Perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C SPIP005 -- -- --- Failed to <action>.

- Message priority:
Critical (*C).
- Description and effect:
An internal UNIX System error has occurred. Application functionality may be severely impaired.
- Repair procedure:
Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** SPIP009 SP CA <equip #> PRI D-channel down.

■ Message priority:

Major (**).

■ Description and effect:

The ISDN D channel has gone out-of-service and no calls can be placed or received by associated Primary Rate Interface (PRI) channels. Active calls are unaffected but customers will not be able to place additional calls to/from the VIS.

This message does not typically indicate a problem with the VIS PRI software; instead, it points to either a T1 problem or a problem with the external equipment that terminates the D channel (another switch). Repeated or frequent failures followed by subsequent recoveries of a specific VIS D channel indicate faulty equipment along the D channel connection that should be replaced.

■ Repair procedure:

1. Display the status of the D channel and the status of the specific SP card indicated by the <equip #> by typing:

display channel all | grep PRID

The D channel channel number appears in the first column, the associated T1 card appears in the first field of the second column, and the D channel state appears in the third column.

- [2.] If the D channel state is Inserv (in-service), then the failure was temporary and the D channel has recovered (SPIP010 message has been logged).
- [3.] If the D channel state is Foos (far-end out-of-service), then a T1 failure has occurred.
 - a. Look for any TWIP messages in the system message log that indicate a T1 failure for associated T1 card (T1 card number was obtained above in step 1).
 - b. Follow the recommendations for any of these messages in order to restore the T1 to service.
- [4.] If the D channel is Netoos (network out-of-service), then the VIS cannot correctly establish the D channel with the terminating switch.
 - a. The D channel status should be checked at the terminating switch and any associated switch problems should be resolved.
 - b. If you are not able to determine or resolve any switch problems, perform the following procedure:

-
- i. Block all calls (at the terminating switch) from coming into the VIS.
 - ii. Perform the "Stopping the Voice System" and "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.
 - iii. Start again at Step 1 above to ensure that the D channel restores correctly and restore traffic from the terminating switch to the VIS once the D channel has returned to service.
- [5.] If the D channel state is Hwoos (hardware out-of-service), then the associated SP card (identified by *<equip #>*) is not in-service. Check the status of the SP card by typing the following:

display card *<equip #>*

- a. If the SP card is Manoos (Manual out-of-service), then it has been removed from service.
 - i. Examine the system message log to determine why the SP card was removed.
 - ii. Resolve any problems that led to the SP card being removed.
 - iii. If the problems have been resolved or you are unable to determine why the card was removed, then restore the card by typing the following:

restore card *<equip #>*

- b. If the SP card is Broken, there has been a communication problem between the SP card and the voice system.
 - i. Block all calls (at the terminating switch) from coming into the VIS.
 - ii. Diagnose the SP card.
 - iii. If the SP card passes diagnostics then perform the "Stopping the Voice System" and "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book. Start again at step 1 above to ensure that the D channel restores correctly and restore traffic from the terminating switch to the VIS once the D channel has returned to service. If diagnostics fail then perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

SPIP010 SP CA <equip #> PRI D-channel has come in service.

- Message Priority:
None.
- Description and effect:
The ISDN D channel has come in-service.
- Repair procedure:
No corrective action is necessary.

** SPIP011 SP CA <equip #> PRI call blocked on T1 channel <chan #> Error: <error_string>

- Message priority:
Major (**).
- Description and effect:
The VIS Primary Rate Interface (PRI) software has rejected an incoming call because the B channel was either out-of-service, already active, or unavailable due to an application problem. This could be a single channel, T1, or system wide problem. If this alarm occurs frequently or repeatedly, then it is a T1 or system wide problem.

This message indicates that one or more calls has failed.

The impact is likely to be significant if the message occurs more frequently than the currently set threshold limit. In that case, you will see a threshold message similar to the following:

*C THR004 -- -- --- The first threshold for SPIP_CALLBLK exceeded. 5 messages have been generated in the last 5 minutes.

This thresholded message could indicate a serious problem which will cause numerous calls to fail in a very short interval.
- Repair procedure:
 1. Determine the status of the identified channel by entering:
display channel <chan #>
or, if it appears to be a system wide problem, by entering:

display channel all

[2.] If the channel(s) are Manoos (manual out-of-service), enter:

restore channel <chan #>

where <chan #> is the number of the channel you want to restore.

[3.] If channels are not Manoos:

- a. Immediately block all calls (at the terminating switch) from coming into the VIS.
- b. Once all calls have been cleared, perform the "Stopping the Voice System" and "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.
- c. Restore traffic from the terminating switch to the VIS.

SPIP012 SP CA <equip #> PRI D-channel is removed from service.

■ Message priority:

None.

■ Description and effect:

The ISDN D channel has been removed from service due to administrative action. No calls can be placed or received by the associated Primary Rate Interface (PRI) channels.

■ Repair procedure:

No corrective action is necessary.

SYS System Messages

The SYS class of messages range from SYS001 to SYS142. The following is the description and effect statement that applies to all the messages in the SYS class and the corresponding repair procedure.

- **Message priority:**

The message priority of the SYS messages are based on the software generating the message and what that process deems as an appropriate priority.

- **Description and effect:**

An internal VIS process has requested that the UNIX operating system perform a function on its behalf. That function has failed. The number of the error corresponds to the UNIX errno (See INTRO(2) in the UNIX System V/386 Release 3.2 Programmer's Reference Manual). The impact and severity of this error on the VIS depends on the context of the error and the process which has encountered the error.

- **Repair procedure:**

Performing the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book may clear some problems indicated by SYS messages.

THR System Messages

THR001 -- -- --- The <level> threshold level for <msgName> exceeded. <msgCount> messages have been generated in the last <period>.

- Message priority:

None.

- Description and effect:

This is a threshold message. Typically, threshold messages indicate that too many messages of a particular type are being generated. Threshold messages may indicate an escalation of priority.

To find out which message was thresholded, examine the threshold message text. The text will contain the message mnemonic. For example, a typical threshold message may look like:

THR001 -- -- --- The first threshold level for LG_MSGNAME exceeded. 100 messages have been generated in the last 1 hour.

The message mnemonic in this example is LG_MSGNAME. The message text gives the currently set threshold limits for the thresholded message.

- Repair procedure:

1. Enter:

explain *mnemonic*

2. Note the message id that appears in the header of the explain output and refer to the repair procedure in this book for that message to correct the problem.

* THR002 -- -- --- The <level> threshold level for <msgName> exceeded. <msgCount> messages have been generated in the last <period>.

■ Message priority:

Minor (*).

■ Description and effect:

This is a threshold message. Typically, threshold messages indicate that too many messages of a particular type are being generated. Threshold messages may indicate an escalation of priority.

To find out which message was thresholded, examine the threshold message text. The text will contain the message mnemonic. For example, a typical threshold message may look like:

* THR002 -- -- --- The first threshold level for LG_MSGNAME exceeded. 100 messages have been generated in the last 1 hour.

The message mnemonic in this example is LG_MSGNAME. The message text gives the currently set threshold limits for the thresholded message.

■ Repair procedure:

1. Enter:

explain mnemonic

2. Note the message id that appears in the header of the explain output and refer to the repair procedure in this book for that message to correct the problem.

```
** THR003 -- -- --- The <level> threshold level for <msgName>
                        exceeded. <msgCount> messages have been
                        generated in the last <period>.
```

- Message priority:

Major (**).

- Description and effect:

This is a threshold message. Typically, threshold messages indicate that too many messages of a particular type are being generated. Threshold messages may indicate an escalation of priority.

To find out which message was thresholded, examine the threshold message text. The text will contain the message mnemonic. For example, a typical threshold message may look like:

```
** THR003 -- -- --- The first threshold level for
LG_MSGNAME exceeded. 100 messages have been generated
in the last 1 hour.
```

The message mnemonic in this example is LG_MSGNAME. The message text gives the currently set threshold limits for the thresholded message.

- Repair procedure:

1. Enter:

explain *mnemonic*

2. Note the message id that appears in the header of the explain output and refer to the repair procedure in this book for that message to correct the problem.

```
*C THR004 -- -- --- The <level> threshold level for <msgName>
                        exceeded. <msgCount> messages have been
                        generated in the last <period>.
```

- Message priority:

Critical (*C).

- Description and effect:

This is a threshold message. Typically, threshold messages indicate that too many messages of a particular type are being generated. Threshold messages may indicate an escalation of priority.

To find out which message was thresholded, examine the threshold message text. The text will contain the message mnemonic. For example, a typical threshold message may look like:

```
*C THR004 -- -- --- The first threshold level for
LG_MSGNAME exceeded. 100 messages have been generated
in the last 1 hour.
```

The message mnemonic in this example is LG_MSGNAME. The message text gives the currently set threshold limits for the thresholded message.

- Repair procedure:

1. Enter:

explain *mnemonic*

2. Note the message id that appears in the header of the explain output and refer to the repair procedure in this book for that message to correct the problem.

TRIP System Messages

*C TRIP001 -- -- --- VIS is unable to communicate with TR cards. Reason: <reason>.

- Message priority:
Critical (*C).
- Description and effect:
A failure has been detected in the UNIX system. The VIS is unable to process calls on T/R channels.
- Repair procedure:
Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

TRIP002 TR CA <equip #> Corrupted data detected on TDM bus. Timeslot <timeslot>. Reason: TDM Parity Error.

- Message priority:
None.
- Description and effect:
A parity error has been detected on the indicated timeslot. The VIS may experience an anomaly in speech functionality.
- Repair procedure:
No corrective action is necessary.

*C TRIP003 -- -- --- VIS received excessive simultaneous signals from the network.

- Message priority:
Critical (*C).
- Description and effect:
The VIS received too many simultaneous signals from the network. The VIS is unable to process calls on T/R cards.
- Repair procedure:
 1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

The network/PBX administration may be the source of these messages to the VIS T/R channels. Some network/PBX parameters may need to be tuned differently. For example, some PBXs generate a "howler tone" if a channel is off hook for a certain amount of time without any activity. A howler tone could be made up of a series of touch tones "*" and "#." Each touch tone results in a separate event in the T/R channels. The rate at which these events are generated may be beyond what the voice system can handle.

Consult your network/PBX administrator.

- [2.] Check your application for network/PBX interactions. They may cause the network/PBX to respond in a certain way resulting in this error condition.

Consult your network/PBX administrator.

3. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

TRIP004 TR CH <equip #> Speech break detected during voice <coding|playback>.

■ Message priority:

None.

■ Description and effect:

A speech break was detected during a voice coding or playback session. The impact of this error is not severe and no action is warranted if the message is reported less frequently than the threshold limit.

The impact may be significant if this message occurs more than the currently set threshold limit. In that case, you will see a threshold message similar to the following:

```
** THR003 -- -- --- The first threshold level for
TRIP_SBRK exceeded. 50 messages have been generated in
the last 3 minutes.
```

The threshold limits and threshold message priority shown above reflect the default values for this thresholded message.

■ Repair procedure:



NOTE:

Perform the following procedure if the thresholded message is reported for TRIP004.

-
1. Make sure that the system is not configured with channels more than the maximum recommended number of your application. Refer to Chapter 6, "Capacity and Performance Considerations," of *CONVERSANT VIS 4.0 System Description*, 585-350-207, for information. Reduce the number of channels in the system if necessary.

- [2.] Check the amount of memory on your system. Enter:

/etc/memsize

You see the following:

12189696

You must have at least 12 Mbyte of memory.

- [3.] Check the application. This condition may arise due to playback of very short phrases; that is, phrases shorter than 0.5 seconds. The larger the number of short phrases, the greater the likelihood of the problem's occurrence.
- [4.] Determine if the number of speech buffers configured in the system is sufficient to handle the current load. To determine the number of speech buffers currently configured in the system, enter:

cat /vs/data/spchconfig

Output will be similar to:

nbufs 240
max_phrases 32000

The **nbufs** parameter should be 3 times the number of channels available in the system. If your application needs more speech buffers than indicated by the number nbufs, increase the speech buffers. Edit the file **/vs/data/spchconfig** and change the parameters **nbufs** to the number desired. Perform the "Stopping the Voice System" and the "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

- [5.] Analyze your application. Record frequently grouped phrases as one single phrase to increase efficiency.

* TRIP005 TR CH <equip #> No loop current.

■ Message priority:

Minor (*).

■ Description and effect:

The channel indicated in the message has lost loop current. If the loop current is lost during an active transaction on this channel, the transaction will be terminated and the channel will be automatically taken out of service. The channel will be automatically returned to service when loop current returns.

■ Repair procedure:

1. Make sure the line is plugged in the channel indicated and appropriate network/switch connections are made. Refer to Chapter 1, "Preparing the Site," of the hardware installation book for your platform for information.
- [2.] Examine the line cord for damages. Replace the cord if it is damaged.
- [3.] Plug in the line in a telephone and make sure it works. Use the following steps to test the line.
 - a. Pick up the handset. Most switches provide dialtone.
 - b. Dial the number from another telephone. Make sure it rings and the connection is established.
 - c. Dial another number from this line. Make sure the connection is established.
- [4.] If these tests do not pass, consult your network/switch administrator for help.

If these tests pass, plug in a known working line into the channel indicated. The channel should come up in service automatically.

TSM System Messages

*C TSM001 <ct> CH <equip #> No script assigned[DNIS: <dnis>].

- Message priority:

Critical (*C).

- Description and effect:

An incoming call has not been processed because no service was assigned to the specified channel or dialed number identification service (DNIS).

- Repair procedure:

1. Examine the logged message to determine if it contains the string "DNIS: <dnis>", where <dnis> is a dialed number string, and do one of the following:

- a. If there is no dialed number (DNIS) indicated by the message, enter:

assign service <script> to chan <chan>

where *script* is the name of the service to be assigned and *chan* is the channel number indicated by the message.

- b. If there is a dialed number (DNIS) indicated by the message, enter:

assign service <script> to dnis <dnis>

where *script* is the name of the service to be assigned and *dnis* is the DNIS indicated by the message, or enter:

assign service *script* to dnis any

to assign the service to "any" DNIS.

 NOTE:

The service assigned to "any" DNIS will be used if a DNIS provided by a new call has no service specifically assigned to it.

*C TSM002 <ct> CH <equip #> Can not load script <script>.

- Message priority:

Critical (*C).

- Description and effect:

The VIS has tried to load a script program file that is missing or corrupted.

If this message contains a channel number of -1, any incoming calls using this script will not be processed. Attempts by a DIP to run the script with a "soft seizure" request will also fail.

If this message contains a channel number greater than -1, an attempt to process a call or "soft seizure" with this script has failed on the channel indicated.

- Repair procedure:

Refer to Chapter 2, "Application Administration," of *CONVERSANT VIS Version 4.0 Operations*, 585-350-703, for information on how to restore an application script from a backup copy or verify and install an application.

* TSM003 <ct> CH <equip #> SP card(s) for function <funct> temporarily busy.

- Message priority:

Minor (*).

- Description and effect:

The service running on the indicated channel was unable to perform the specified function because the SP card was overloaded. This is a temporary condition due to the dynamic nature of SP resource allocation on the system. This condition will be relieved when the system's demand on SP resources decreases or the system's SP capacity increases. Call processing on the channel has been degraded.

The impact may be significant if the message occurs more frequently than the currently set threshold limit. In that case, you will see a threshold message similar to the following:

** THR003 -- -- --- The first threshold level for TSM_SPBUSY exceeded. 10 messages have been generated in the last 1 minute.

The threshold limits and threshold message priority shown above reflect the default values for this thresholded message.



NOTE:

The TSM004 message may also appear when there is not a sufficient number of CMP cards in service. You may need to add another CMP.

■ Repair procedure:

1. Some SP cards assigned to the indicated function may be out of service, thus putting too much load on the SP cards that remain in service.

Determine if any SP cards and associated CMP card(s) assigned the indicated function are out of service by entering:

display card sp

- a. If any SP cards with the indicated function are in the Manoos state, enter:

restore card <card number>

where <card number> is the card number obtained from the previous **display** command output to restore the card to service.

- b. If any SP cards are in a state other than Manoos, perform the "Checking a Card" procedure on those cards, described in Chapter 4, "Common Maintenance Procedures" in this book.
- c. If the CMP show Not diag, enter:

diagnose card <card number>

where <card number> is the number of the SP card that has the CMP(s) that are not Not diagnose associated with it. This will place the CMP(s) into service.

2. If all SP cards with the indicated function are in service and the problem persists, determine if the system load is exceeding the total rated capacity for all SP cards assigned this function. Refer to Chapter 6, "CONVERSANT VIS Capacity and Performance Considerations," of *CONVERSANT VIS 4.0 System Description*, 585-350-207, for information on SP capacity.
 - a. If this message is being reported under system load conditions that do not exceed the total rated capacity of the SP card for the indicated function, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book for all SP cards assigned that function.

-
- b. Otherwise, perform the "Reducing Load" procedure described in Chapter 4, "Common Maintenance Procedures" in this book to bring the system load down to a level compatible with the system SP capacity.

*C TSM004 <ct> CH <equip #> SP card(s) for function <funct> unavailable.

■ Message priority:

Critical (*C).

■ Description and effect:

The service running on the indicated channel was unable to perform the specified function. There is not a sufficient number of SP cards in service that perform this function. Call processing on all channels needing this SP function has been degraded or inhibited completely.



NOTE:

The TSM004 message may also appear when there is not a sufficient number of CMP cards in service. You may need to add another CMP.

■ Repair procedure:

1. There may be no SP cards assigned to the indicated function, or all SP cards that are assigned to that function may be out of service.

Determine if any SP cards assigned the indicated function are out of service by entering:

display card sp

- a. If any SP cards with the indicated function are in the Manoos state, enter:

restore card <card number>

where <card number> is the card number obtained from the previous **display** command output, to restore the card to service.

- b. If any SP cards are in a state other than Manoos, enter:

diagnose card <card number>

where <card number> is the number of the card you want to diagnose.

— If the card passes diagnostics, enter:

restore card <card number>

where *<card number>* is the number of the card you want to restore to service.

- If the card does not pass diagnostics, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

2. If there are no SP cards assigned to the indicated function, you can assign the function to an SP card using the following procedure:

- a. If the SP card is in the Inserv state, remove it from service by entering:

remove card *<card number>*

where *<card number>* is the card number of the SP obtained from the **display card sp** command output.

- b. Assign the appropriate function to the SP card(s). Refer to Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for additional information.

- c. Enter:

diagnose card *<card number>*

where *<card number>* is the number of the SP card on which you want to run diagnostics.

- d. Enter:

restore card *<card number>*

where *<card number>* is the number of the SP card to which you want to restore to service with the appropriate function.

** TSM005 T1 CH <equip #> PRI received bad DNIS: <dnis #>.

■ Message priority:

Major (**).

■ Description and effect:

A bad dialed number string was passed to the system. An attempt will be made to use the service assigned to the dialed number "ANY" to handle the call. If this attempt fails, the TSM001 message will be logged.

■ Repair procedure:

This message indicates an ISDN protocol error. It is not a problem originating within the VIS. Contact your network service provider to help resolve this problem.

* TSM006 <ct> CH <equip #> Script <script>: No phrase for '<c>' character.

- Message priority:

Minor (*).

- Description and effect:

The application script indicated by this message has tried to speak back a field that has a space, asterisk (*), pound sign (#), or some other unrecorded or nonstandard phrase. No speech corresponding to the indicated character is heard by the caller. For example, if the script tried to play the string "123*abc", the caller would hear "123abc" and this message would be logged for the '*' character.

- Repair procedure:

See the "For application developer" section below.

- For application developer:

The application script indicated by this message has tried to speak back a field that has a space, an asterisk (*), a pound sign (#), or some other unrecorded or nonstandard phrase. For example, the following script asks for a 3-4 digit PIN and then speaks it back to the caller for verification.

start:

1. Answer Phone

2. Prompt & Collect

Prompt

Speak With Interrupt

Phrase: "Please enter your 3 or 4 digit PIN"

Input

Min Number Of Digits: 03

Max Number Of Digits: 04

Checklist

Case: "Input Ok"

Continue

Case: "Initial Timeout"

Reprompt

Case: "Too Few Digits"

Reprompt

Case: "No More Tries"

Quit

End Prompt & Collect

3. Set Field Value

Field: pin_num = \$CI_VALUE

4. Announce

Speak With Interrupt

Phrase: "The PIN you entered was"

Field: pin_num As Cmmf

5. Quit

The checklist used in the Prompt and Collect statement allows for any touchtone including the pound sign or an asterisk. If the caller entered '123*', the Announce statement in Step 4 will try to speak back the field '123*'. The caller will only hear the '123', but a message similar to following TSM message appears in the event log:

* TSM006 TR CH 001 Script <app1>: No phrase for '*' character

This appears because the routine that speaks out fields is trying to map the asterisk (*) to a standard phrase in the talkfile. This can also occur when speaking a field from a host or database lookup and the field contains one or more leading or trailing spaces.

To help prevent this event log message from being printed, make sure to check all of your Prompt and Collect statements and change the checklist as appropriate. For this example, the checklist should be changed to allow the digits 0-9 as follows:

start:

1. Answer Phone
2. Prompt & Collect

Prompt

Speak With Interrupt

Phrase: 'Please enter your 3 or 4 digit PIN'

Input

Min Number Of Digits: 03

Max Number Of Digits: 04

Checklist

Case: "nnn"

Continue

Case: "nnnn"

Continue

Case: "Not On List"

Reprompt

Case: "Initial Timeout"

Reprompt

Case: "Too Few Digits"

Reprompt

Case: "No More Tries"

Quit

End Prompt & Collect

3. Set Field Value

Field: pin_num = \$CI_VALUE

4. Announce

Speak With Interrupt

Phrase: "The PIN you entered was"

Field: pin_num As Cmmf

5. Quit

This revised program has a checklist that requires the input to be all digits. If the event log message is being issued because of speaking back a field that was returned from a host or database lookup, the field to be spoken back must first be stripped of any spaces.

In the case of speaking caller input, or fields from a host or database lookup, this event log message is not a critical message. Rather, it is an informational message telling you that part of the field being spoken back contains some unexpected characters that can not be spoken back; that is, a space, an asterisk, or a pound sign.



NOTE:

Developers using native script language instead of Script Builder, should check fields used with the tchars() instruction for invalid characters.

** TSM007 T1 CH <equip #> PRI error type <error type> (<error value>).

■ Message priority:

Major (**).

■ Description and effect:

A network protocol error, or other internal error, of the type indicated by the message has occurred on the PRI channel specified by this message. The call being handled by that channel has been disconnected as a result.



NOTE:

This message can result from a timeout from the network or a provisioning type error.

■ Repair procedure:

This message indicates an ISDN protocol error or an internal PRI error. Contact your network service provider to help resolve this problem. The following table of possible error types should help identify the specific cause.

In some cases, an attempt to place a second outbound PRI call immediately after completion of a first call will fail and result in a alarm message such as the following:

```
** TSM007 T1 CH <ch #> PRI error type unknown (0).
```

This alarm and failure to place the second call can be avoided by modifying the Script Builder script to sleep for at least two seconds after disconnecting from the first call. For example, a Script Builder program that is being called repeatedly to place outbound PRI calls can be changed to the following:

```
{...}
  External Action: Make_Call
  {...}
  Disconnect
  Quit
to:
  External Action: Make_Call
  {...}
  Disconnect
  External Function
    Function Name: sleep
    Use Arguments: 2
  Quit
```

In order to use the External Function "sleep," you may need to install the following text in the **/vs/bin/ag/lib/sleep.t** file (if it does not already exist):

```
/*
 * FUNCTION sleep
 *   Sleep for arg1 seconds.
 * INPUT:
 *   sleeptime - number of seconds to sleep.
 * OUTPUT: none.
 */

DEFARG(sleeptime, num, in)

L__sleep:
sleep(r.3)
rts()
```

Table 3-4. Error Types for TSM007

Error Type	Error Value	Meaning
CV_UNASSNUM	1	Unassigned number
CV_NOROUTE	2	No route to number
CV_UNACCEPTCHAN	6	Channel unacceptable
CV_NORMALCLR	16	Normal call clearing
CV_USERBUSY	17	User busy
CV_NOUSER	18	No user responding
CV_CALLREJECT	21	Call rejected
CV_NUMCHANGE	22	Number changed
CV_INVALIDNUM	28	Invalid number format
CV_FACREJECT	29	Facility rejected
CV_STATRESP	30	Response to status enquiry
CV_NORMALUNSP	31	Normal; unspecified
CV_NOCIRCUIT	34	No circuit or channel available
CV_NETWORKDOWN	38	Network out of order
CV_TEMPFAILURE	41	Temporary failure
CV_SWITCHBUSY	42	Switching equipment congestion
CV_USERIETOSS	43	User information discarded
CV_CIRCUITNA	44	Requested circuit channel not available
CV_CALLPREEMPTED	45	Call preempted
CV_FACNOTSUB	50	Requested facility not subscribed
CV_OUTBARRED	52	Outgoing calls barred
CV_INBARRED	54	incoming calls barred
CV_BEARERNA	58	Bearer capability not available
CV_SERVICENA	63	Service not available, unspecified
CV_BEARERNI	65	Bearer capability not implemented
CV_CHANNELNI	66	Channel type not implemented
CV_FACILITYNI	69	Requested facility not implemented
CV_INVALIDCALL	81	Invalid call reference
CV_NOCHANNEL	82	Identified channel does not exist
CV_BADDEST	88	Incompatible destination
CV_MISSINGIE	96	Mandatory IE missing

Continued on next page

Table 3-4. Error Types for TSM007 — Continued

Error Type	Error Value	Meaning
CV_BADMESS	97	Message type non-existent
CV_BADSTATE	98	Message incompatible with call state
CV_INVALIDIE	100	Invalid IE contents
CV_TIMEOUTREC	102	Recovery on timer expiry
CV_INTERWORKING	127	Interworking; unspecified
PRI_ERROR_NETWORK	256	Network didn't respond as expected
PRI_ERROR_STATE	257	Request was received in wrong state
PRI_ERROR_OOSVC	258	B channel is out of service
PRI_ERROR_INMTC	259	B channel is in maintenance state
PRI_ERROR_GLARE	260	Out going call failed due to glare
PRI_ERROR_BADCMD	261	Bad command, not understood
PRI_ERROR_BADDCHAN	262	Bad D channel
PRI_ERROR_BADBCHAN	263	Bad B channel
PRI_ERROR_DCHANDEAD	264	D channel is dead
PRI_ERROR_DCHANOFF	265	D channel is turned off
PRI_ERROR_DCHANCONF	266	D channel configuration error
PRI_ERROR_BUSY	267	B channel was already busy
PRI_ERROR_BADIE	268	Bad information element type

TTS System Messages

** TTS001 <ct> <ca/ch> <equip #> Text-To-Speech failed to <action>. Reason: <reason>.

- Message priority:
Major (**).
- Description and effect:
The Text-To-Speech feature has encountered a system failure during calling processing. Applications using the Text-To-Speech feature to read from a text file will fail.
- Repair procedure:
Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** TTS002 <ct> <ca/ch> <equip #> Text-To-Speech failed to <action> text file <file name>. Reason: <reason>.

- Message priority:
Major (**).
- Description and effect:
The Text-To-Speech feature failed to access the text file indicated during call processing. Applications requiring access to this file will be incomplete.
- Repair procedure:
 1. Consult the application developer to verify the application. Refer to the "For application developer" section below.
 - [2.] If the application is correct, restore the text file(s) from the backup. If the backup is not available, consult the application developer to recreate the text file.
 - [3.] If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- For application developer:
 1. Verify that the application refers to the correct text file name.
 - [2.] Verify that the text file is in existence in the correct directory. Note that if text file is not located in the **/vs/data/tts_files** directory, the text file name must be a full path name.

** TTS003 -- -- --- Text-To-Speech failed to access system table <tblname>. Reason: <reason>.

- Message priority:
Major (**).
- Description and effect:
The Text-To-Speech feature failed to access a shared resource of the voice system during initialization. Applications using the Text-To-Speech feature to read from a text file will fail.
- Repair procedure:



WARNING:

The following procedure will cause all system configuration information to be lost. This includes switch administration and service assignments. When the voice system is restarted, the system configuration will use the default settings.

1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Move the **devtbl** to another area. For example, enter:
mv /gendb/shmem/devtbl /gendb/shmem/devtbl.old
3. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** TTS004 -- -- --- Text-To-Speech failed to allocate memory for table <tblname>.

- Message priority:
Major (**).
- Description and effect:
The Text-To-Speech feature failed to access a shared resource of the voice system during initialization. Applications using the Text-To-Speech feature to read from a text file will fail.
- Repair procedure:
 1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

2. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[3.] If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** TTS005 <ct> <ca/ch> <equip #> Text-To-Speech failed to send message to <process>. Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

The Text-To-Speech feature failed to communicate with the voice system during call processing. Applications using the Text-To-Speech feature to read from a text file will fail.

■ Repair procedure:

Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** TTS006 -- -- --- Text-To-Speech failed to receive message. Reason: <reason>.

■ Message priority:

Major (**).

■ Description and effect:

The Text-To-Speech feature failed to communicate with the voice system during call processing. Applications using the Text-To-Speech feature to read from a text file will fail.

■ Repair procedure:

Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

TWIP System Messages

** TWIP001 T1 CH <equip #> Network failure on outbound call.
Reason: Wink not received.

■ Message priority:

Major (**).

■ Description and effect:

An attempt to place a call on the identified T1 channel failed as a result of the network's failure to return a wink. The VIS is expecting the wink once the T1 channel has been taken off-hook. This acknowledgment enables the VIS to know when to begin dialing.

■ Repair procedure:

1. The identified T1 trunk is using robbed-bit, wink-start, E&M protocol. Contact the network switch administrator to verify that the switch is administered with compatible options.

[2.] If this T1 interface is intended to use ISDN PRI protocol, administer the card for ISDN-PRI Layer 1 Protocol as described in Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS Version 5.0 Operations*, 585-310-550.

[3.] If the switch and the VIS interfaces have both been verified as correct and the message occurs infrequently, the problem can be caused by lack of DTMF tone receivers on the switch. If the number of failures is unsatisfactory, reduce the call rate from the VIS to the switch or check with the network switch administrator to increase the number of available DTMF tone receivers. Refer to the "For application developer" section below for additional information.

[4.] If this message is occurring frequently (that is, not a result of the situation described in Step 3 above) and another T1 card exists in the VIS and is functioning properly, complete the following steps to determine if the problem can be attributed to an external factor rather than the card.

a. Remove the functioning T1 card from service by entering:

remove card <card number>

where <card number> is the number of the functioning T1 card.

b. Swap the cables to both T1 cards.

c. Restore the previously functioning T1 card to service by entering:

restore card <card number>

where *<card number>* is the number of the functioning T1 card.

d. Observe the two T1 cards to see if the problem migrates with the cable.

e. Return the cables to their original cards.

[5.] If, as a result of Step 4, the problem is observed to migrate with the cable, or if a second T1 card is not available to perform Step 3, check the cable between the 15-pin connector on the back of the T1 card that connects to the switch.

a. Check cable continuity on pins 1, 3, 9, and 11.

b. Look for broken wires or a dislodged connector.

[6.] If this is a new installation, verify that the transmit and receive wire pairs are not reversed. See Chapter 3, "Connecting Peripherals and Powering Up," of your hardware installation book.

■ For application developer:

If you determine this message is occurring due to occasional lack of DTMF tone receivers on the switch and the number of failures is infrequent enough to not warrant adding switch resources or reducing call rates, you should add error checking in the application script to detect this type of failure during call origination (**tic** or **Make Call**) and re-attempt the call.

** TWIP002 T1 CH *<equip #>* Network failure on outbound call.
Reason: Wink too long.

■ Message priority:

Major (**).

■ Description and effect:

An attempt to place a call on the identified T1 channel failed as a result of unexpected network behavior.

■ Repair procedure:

This problem is usually due to the use of a T1 configuration option not normally used by the VIS. See the "For application developer" section below.

■ For application developer:

This alarm is logged as a result of the indicated T1 channel having encountered an excessively long wink. Typically, this is due to the presence of incoming calls on trunks that have been administered for outbound calls only (glare).

1. Verify that this trunk has been administered, via the ***/vs/data/t1_config*** file, with the desired configuration.

-
- a. If the desired configuration is not for outbound calls only, edit the file **/vs/data/t1_config** for two-way calling.



NOTE:

This is not a standard documented procedure. Information in the file will provide a guide to making this change. The card numbering in this file corresponds to the osindex number (dip switch setting) of the T1 card. To determine the osindex for the card, enter:

display card t1

The osindex displayed is that for the T1 card on which the identified channel resides.

- b. If the desired configuration is for outbound calls only, contact the network switch administrator to verify that the switch is administered to prevent calls from the switch to the VIS.
- [2.] Contact the network switch administrator to verify that the length of the wink being returned by the switch to the VIS is always between 150 and 350 msec.

TWIP003 T1 CH <equip #> Network is not releasing channel.

■ Message priority:

None.

■ Description and effect:

The network failed to go on-hook within 25 seconds after completion of the previous call on this channel. The T1 card was able to automatically recover from this error.

■ Repair procedure:

No corrective action is necessary.

* TWIP004 T1 CH <equip #> Unexpected inbound call observed on outbound trunk.

■ Message priority:

Minor (*).

■ Description and effect:

The identified T1 channel, which has been configured for outbound calls only, has received an unexpected inbound call. This call has been ignored by the VIS.

■ Repair procedure:

This problem is usually due to the use of a T1 configuration option not normally used by the VIS. See the "For application developer" section below.

■ For application developer:

This alarm is logged as a result of the indicated T1 channel, configured for outbound calls only, having detected an incoming call.

1. Verify that this trunk has been administered, via the

/vs/data/t1_config file, with the desired configuration.

- a. If the desired configuration should allow incoming calls, edit the file **/vs/data/t1_config** to enable incoming calls on the desired channels.

 NOTE:

This is not a standard documented procedure. Information in the file will provide a guide to making this change. The card numbering in this file corresponds to the osindex number (dip switch setting) of the T1 card. To determine the osindex for the card, enter:

display card t1

The osindex displayed is that for the T1 card on which the identified channel resides.

- b. If the desired configuration is for outbound calls only, contact the network switch administrator to verify that the switch is administered to prevent calls from the switch to the VIS.

** TWIP005 T1 CH <equip #> Failure on outbound call. Reason:
Too many digits sent to network.

■ Message priority:

Major (**).

■ Description and effect:

An outbound call has not completed because the network answered before all digits were dialed.

■ Repair procedure:

This problem is usually due to a configuration or application error. See the "For application developer" section below.

■ For application developer:

A script is attempting to outdial on the designated channel using a dialed number which is longer than the network is expecting.

1. Determine which script is attempting to outdial on the indicated channel.

[2.] If the dial string is incorrect, correct it and re-attempt.

[3.] If the problem persists and dial string is correct, contact the network switch administrator to verify that the switch is administered to accept the same number of digits as the application is attempting to dial.

** TWIP006 T1 CH <equip #> Failure on outbound call. Reason:
Channel is configured for inbound calls only.

■ Message priority:

Major (**).

■ Description and effect:

The identified T1 channel is configured for inbound calls only. Calls cannot originate on this channel.

■ Repair procedure:

This problem is usually due to the use of a T1 configuration option not normally used by the VIS. See the "For application developer" section below.

■ For application developer:

This alarm is logged as a result of the indicated T1 channel, configured for inbound calls only, having received a request from the system to originate an outbound call.

-
1. Verify that this trunk has been administered, via the **/vs/data/t1_config** file, with the desired configuration.
 - a. If the desired configuration is should allow outbound calls, edit the file **/vs/data/t1_config** to enable outbound calls on the desired channels.



NOTE:

This is not a standard documented procedure. Information in the file will provide a guide to making this change. The card numbering in this file corresponds to the osindex number (dip switch setting) of the T1 card. To determine the osindex for the card, enter:

display card t1

The osindex displayed is that for the T1 card on which the identified channel resides.

2. If the desired configuration is for inbound calls only, verify that the switch is administered to allow calls from the VIS to the switch.

** TWIP007 T1 CH <equip #> Initialization failure.
Reason: Improper channel configuration.

■ Message priority:

Major (**).

■ Description and effect:

The identified T1 channel has been administered with an unrecognized or illegal channel option. Calls on this channel may not be processed correctly.

■ Repair procedure:

This alarm is logged as a result of the indicated T1 channel having been configured with an invalid option. The channel will resort to its default behavior for the affected option.

1. Remove the card from service. Enter:

remove card <card number>

where <card number> is the number of the affected card.

2. Administer the card as described in Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.

3. Restore the card to service. Enter:

restore card <card number>

where *<card number>* is the number of the affected card.

- [4.] If the problem persists, then a channel parameter not normally used by the VIS is incorrect. It must be changed by editing the file ***/vs/data/t1_config***.

 NOTE:

This is not a standard documented procedure. Information in the file will provide a guide to making this change. The card numbering in this file corresponds to the osindex number (dip switch setting) of the T1 card. To determine the osindex for the card, enter:

display card t1

The osindex displayed is that for the T1 card on which the identified channel resides.

*C TWIP008 -- -- --- VIS unable to communicate with T1 cards.
Reason: <reason>.

■ Message priority:

Critical (*C).

■ Description and effect:

The VIS is unable to communicate with the T1 cards in the system. Calls cannot be processed on any T1 card.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

- [3.] If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

- [4.] If the problem persists, perform the "Reinstalling the T1 Driver" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

 NOTE:

For E1 cards, perform the **Reinstalling the E1/CAS Board Driver/Firmware** or **E1 Board Driver for PRI** procedure.

** TWIP009 T1 CA <equip #> Initialization failure.
Reason: Improper card configuration.

■ Message priority:

Major (**).

■ Description and effect:

The identified T1 card has been administered with an unrecognized or illegal card option. Calls on this card may not be processed correctly.

■ Repair procedure:

This alarm is logged as a result of the indicated T1 card having been configured with an invalid option. The card will resort to its default behavior for the affected option.

1. Remove the card from service. Enter:

remove card <card number>

where <card number> is the number of the affected card.

2. Administer the card as described in Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.

3. Restore the card to service. Enter:

restore card <card number>

where <card number> is the number of the affected card.

- [4.] If the problem persists, then a card (board) parameter not normally used by the VIS is incorrect. It must be changed by editing the file **/vs/data/t1_config**.

 NOTE:

This is not a standard documented procedure. Information in the file will provide a guide to making this change. The card numbering in this file corresponds to the osindex number (dip switch setting) of the T1 card. To determine the osindex for the card, enter:

display card t1

The osindex displayed is that for the T1 card on which the identified channel resides.

*C TWIP010 T1 CA <equip #> Loss of TDM bus clock detected.

- Message priority:

Critical (*C).

- Description and effect:

All communication between this and all other cards over the TDM bus has been disrupted, resulting in a loss of all bridging and SP card functionalities.

If a TWIP011 message for this card has been logged following this message, the problem has corrected itself and no further action is necessary.

- Repair procedure:

If a TWIP011 message has not been logged for this card indicating the clock has returned, perform the following steps until the problem is corrected.



NOTE:

TWIP011 is logged as an event and will not appear in the log if you are only displaying alarms.

1. Diagnose the card by entering:

diagnose card <card number>

where <card number> is the number of the affected card.

- [2.] If the problem persists, perform the "Checking the TDM Bus" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

- [3.] If the problem persists, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

TWIP011 T1 CA <equip #> TDM bus clock restored.

- Message priority:

None.

- Description and effect:

The TDM communication previously reported by a TWIP010 message to be disrupted has been restored. All bridging and SP functionality previously lost has been restored.

- Repair procedure:

No corrective action is necessary.

*C TWIP012 T1 CH <equip #> Channel overloaded.

■ Message priority:

Critical (*C).

■ Description and effect:

The identified T1 channel is experiencing overload. The VIS is unable to process calls on this channel.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [3.] Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [4.] If the problem persists, make certain that the problem is not attributed to other parts of the system. (This may be observable as a result of other load related alarms having been logged.)

** TWIP013 T1 CA <equip #> Facility out of service.

Reason: Loss of frame alignment

■ Message priority:

Major (**).

■ Description and effect:

The identified T1 card is not receiving a valid signal from the network. The VIS is unable to process calls on this card.

■ Repair procedure:

1. Check the cable between the 15-pin connector on the back of the T1 card which connects to the switch and/or CSU.



NOTE:

Check the 8-pin modular or 75 Ohm coaxial cable on the back of the E1 card.

- a. Check cable continuity on pins 1, 3, 9, and 11.



NOTE:

For E1, check cable continuity on pins 1, 2, 4 and 5.

- b. Look for broken wires or a dislodged connector.

-
- c. If this is a new installation, verify that the transmit and receive wire pairs are not reversed. See Chapter 3, "Connecting Peripherals and Powering Up," of the hardware installation book for your platform.
 2. If the cabling/connections appear to be correct and if another T1 card exists in the VIS and is functioning properly:
 - a. Remove the functioning T1 card from service by entering:
remove card <card number>
where <card number> is the number of the functioning T1 card.
 - b. Swap the cables to both T1 cards.
 - c. Restore the previously functioning T1 card to service by entering:
restore card <card number>
where <card number> is the number of the functioning T1 card.
 - d. Observe the two T1 cards to see if the problem migrates with the cable.
 - e. Return cables to their original cards.
 - [3.] If the problem is observed to migrate with the cable:
 - a. Contact the network switch administrator to verify that service is turned on at the switch.
 - b. If a CSU is being used, verify that it is operating correctly. If this is a new installation, verify that the CSU has been properly wired and optioned.
 - [4.] If the problem is observed to migrate to the card, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** TWIP014 T1 CA <equip #> Facility out of service.
Reason: Excessive bi-polar violations.

■ Message priority:

Major (**).

■ Description and effect:

The identified T1 card is experiencing an extreme number of bi-polar violations in the DS1 signal. The VIS is unable to process calls on this card.

■ Repair procedure:

1. Check and administer the framing/line coding option of the card as described in Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.

[2.] Contact the network switch administrator to verify that the switch is administered with compatible options.

[3.] If another T1 card exists in the VIS and is functioning properly, complete the following steps to determine if the problem can be attributed to an external factor rather than the card.

a. Remove the functioning T1 card from service by entering:

remove card <card number>

where <card number> is the number of the functioning T1 card.

b. Swap the cables to both T1 cards.

c. Restore the previously functioning T1 card to service by entering:

restore card <card number>

where <card number> is the number of the functioning T1 card.

d. Observe the two T1 cards to see if the problem migrates with the cable.

e. Return the cables to their original cards.

[4.] If, as a result of Step 3, the problem is observed to migrate with the cable, or if a second T1 card is not available to perform Step 3, check the cable between the 15-pin connector on the back of the T1 card which connects to the switch and/or CSU.

 NOTE:

Check the 8-pin modular or 75 Ohm coaxial cable on the back of the E1 card.

-
- a. Check cable continuity on pins 1, 3, 9, and 11.



NOTE:

For E1, check cable continuity on pins 1, 2, 4 and 5.

- b. Look for broken wires or a dislodged connector.

- [5.] If this is a new installation, verify that the transmit and receive wire pairs are not reversed. See Chapter 3, "Connecting Peripherals and Powering Up," of the hardware installation book for your platform.
- [6.] If a CSU is being used, verify that it is operating correctly. If this is a new installation, verify that the CSU has been properly wired and optioned.
- [7.] Check that the cable is shielded and that the shield is properly grounded at the switch.

** TWIP015 T1 CA <equip #> Facility out of service.

Reason: Excessive CRC errors.

■ Message priority:

Major (**).

■ Description and effect:

The identified T1 card is detecting excessive cyclic redundancy check (CRC) errors in the DS1 signal. The VIS is unable to process calls on this card.

■ Repair procedure:

1. Check and administer the framing/line coding option of the card for ESF framing and B8ZS zero suppression, as described in Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.



NOTE:

For E1, check and administer the framing/code option of the for CEPTHDB3 zero suppression.

2. Check the CRC option of the card.
 3. Verify the network switch uses the same CRC option (yes/no).
- [4.] Contact the network switch administrator to verify that the switch is administered with compatible options.

[5.] If another T1/E1 card exists in the VIS and is functioning properly, check if the problem can be attributed to an external factor and not the card.

a. Remove the functioning T1/E1 card from service by entering:

remove card <card number>

where <card number> is the number of the functioning T1/E1 card.

b. Swap the cables to both T1/E1 cards.

c. Restore the previously functioning T1/E1 card to service by entering:

restore card <card number>

where <card number> is the number of the functioning T1/E1 card.

d. Observe the two T1/E1 cards to see if the problem migrates with the cable.

e. Return the cables to their original cards.

[6.] If, as a result of Step 3, the problem is observed to migrate with the cable, or if a second T1 card is not available to perform Step 3, check the cable between the 15-pin connector on the back of the T1 card which connects to the switch and/or CSU.

⇒ NOTE:

Check the 8-pin modular or 75 Ohm coaxial cable on the back of the E1 card.

a. Check cable continuity on pins 1, 3, 9, and 11.

⇒ NOTE:

For E1, check cable continuity on pins 1, 2, 4 and 5.

b. Look for broken wires or a dislodged connector.

[7.] If this is a new installation, verify that the transmit and receive wire pairs are not reversed. See Chapter 3, "Connecting Peripherals and Powering Up," of the hardware installation book for your platform.

[8.] If a CSU is being used, verify that it is operating correctly. If this is a new installation, verify that the CSU has been properly wired and optioned.

[9.] Check that the cable is shielded and that the shield is properly grounded at the switch.

** TWIP016 T1 CA <equip #> Facility out of service.
Reason: Loss of DS1 signal.

■ Message priority:

Major (**).

■ Description and effect:

The identified T1 card is not detecting any signal from the network. The VIS is unable to process calls on this card.

■ Repair procedure:

1. If another T1 card exists in the VIS and is functioning properly, check if the problem can be attributed to an external factor rather than the card.

- a. Remove the functioning T1 card from service by entering:

remove card <card number>

where <card number> is the number of the functioning T1 card.

- b. Swap the cables to both T1 cards.

- c. Restore the previously functioning T1 card to service by entering:

restore card <card number>

where <card number> is the number of the functioning T1 card.

- d. Observe the two T1 cards to see if the problem migrates with the cable.

- e. Return cables to their original cards.

2. If, as a result of Step 1, the problem is observed to migrate with the cable, or if a second T1 card is not available to perform Step 1, check the cable between the 15-pin connector on the back of the T1 card which connects to the switch and/or CSU.

⇒ NOTE:

Check the 8-pin modular or 75 Ohm coaxial cable on the back of the E1 card.

- a. Check cable continuity on pins 1, 3, 9, and 11.

⇒ NOTE:

For E1, check cable continuity on pins 1, 2, 4 and 5.

- b. Look for broken wires or a dislodged connector.

-
- [3.] If this is a new installation, verify that the transmit and receive wire pairs are not reversed. See Chapter 3, "Connecting Peripherals and Powering Up," of the hardware installation book for your platform.
 - [4.] Contact the network switch administrator to verify that service is turned on at the switch.
 - [5.] If a CSU is being used, verify that it is operating correctly. If this is a new installation, verify that the CSU has been properly wired and optioned.

** TWIP017 T1 CA <equip #> Facility out of service.
Reason: Blue alarm.

■ Message priority:

Major (**).

■ Description and effect:

The identified T1 card is detecting an all-ones (AIS) condition from the network. This alarm usually indicates that the network is out of service. The VIS is unable to process calls on this card.

■ Repair procedure:

1. Contact the network switch administrator to verify that service is turned on at the switch.
- [2.] If a CSU is being used, verify that it is operating correctly. If this is a new installation, verify that the CSU has been properly wired and optioned. Typically, a CSU will send an all-ones (AIS) signal to the VIS if it is not receiving a signal from the switch.
- [3.] Check and administer the framing/line coding option of the card as described in Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.
- [4.] Contact the network switch administrator to verify that the switch is administered with compatible options.
- [5.] If a CSU is being used, verify that it supports the framing type.

** TWIP018 T1 CA <equip #> Facility out of service.
Reason: Yellow alarm.

■ Message priority:

Major (**).

■ Description and effect:

The identified T1 card is detecting a remote frame alarm (yellow alarm). The network is experiencing problems receiving the DS1 signal sent by the T1 card. The VIS is unable to process calls on this card.

■ Repair procedure:

1. Contact the network switch administrator to determine what problem is being noted by the switch.

If the switch is not receiving a signal from the VIS, check the cable between the 15-pin connector on the back of the T1 card which connects to the switch and/or CSU.

 NOTE:

Check the 8-pin modular or 75 Ohm coaxial cable on the back of the E1 card.

- a. Check cable continuity on pins 1, 3, 9, and 11.

 NOTE:

For E1, check cable continuity on pins 1, 2, 4 and 5.

- b. Look for broken wires or a dislodged connector.

[2.] If this is a new installation, verify that the transmit and receive wire pairs are not reversed. See Chapter 3, "Connecting Peripherals and Powering Up," of the hardware installation book for your platform.

[3.] If a CSU is being used, verify that it is operating correctly. If this is a new installation, verify that the CSU has been properly wired and optioned.

[4.] Verify that the VIS, switch, and CSU (if being used) are configured with the same options.

- a. Check and administer the framing/line coding option of the card as described in Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.
- b. Contact the network switch administrator to verify that the switch is administered with compatible options.
- c. If a CSU is being used, verify that it supports the framing type.

TWIP019 T1 CA <equip #> Facility restored to service.

- Message priority:
None.
- Description and effect:
The T1 facility previously reported as being out of service has been automatically restored to service.
- Repair procedure:
No corrective action is necessary.

*C TWIP020 T1 CA <equip #> Hardware failure detected.
Reason: Problem detected in the <circuit>.

- Message priority:
Critical (*C).
- Description and effect:
A possible problem has been detected in the identified circuit of the T1 card. The VIS is unable to process calls on this card.
- Repair procedure:
Occasionally, a poor or miswired T1 cable, switch, or CSU can cause this failure. The following procedure will determine if the cause is external or within the card.

1. Disconnect the T1 cable from the back of the T1 circuit card.
2. Diagnose the card by entering:

diagnose card <card number>

where <card number> is the card number specified in the message text.



NOTE:

Additional instructions will be provided by the diagnose command.

3. With the T1 cable disconnected, if the "T1 link test" indicates No signal from the switch, a problem could exist with one or more of the following:
 - a. The T1 cable is poorly or improperly wired. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of your hardware installation book for proper T1 cable wiring instructions.

[b.] The T1 card may not be properly administered. If the T1 card is being used for PRI, refer to Chapter 3, "Configuration Management," in *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on how to administer the T1 card. If the card is not being used for PRI, refer to Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703 for information on how to administer the card.

[c.] The switch may not be properly administered (provisioned) to work with the VIS T1 card. If the T1 card is being used for PRI, refer to Chapter 3, "Configuration Management," in *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on provisioning the switch. If the card is not being used for PRI, refer to Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on provisioning the switch.

[d.] If there is a CSU installed between the VIS T1 card and the switch, verify this is properly wired and administered and is functioning properly.

[4.] If the diagnose command's T1 link test continues to indicate "T1 Framing Circuit Failure," or "T1 Transceiver Failure" while the T1 card is disconnected, the card is faulty. Replace the card using the card replacement procedures for your hardware platform provided in the appendixes of this book.

* TWIP021 T1 CA <equip #> Bi-polar violations detected at the rate of <bpv> bpv/min.

■ Message priority:

Minor (*).

■ Description and effect:

The identified T1 card detected the shown number of bi-polar violations in the DS1 within the previous minute. The T1 card was able to recover automatically from this error.

■ Repair procedure:

1. Check and administer the framing/line coding option of the card as described in Chapter 5, "Switch Interface Administration," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.

[2.] Contact the network switch administrator to verify that the switch is administered with compatible options.

-
- [3.] If another T1 card exists in the VIS and is functioning properly, complete the following steps to determine if the problem can be attributed to an external factor rather than the card.
- a. Remove the functioning T1 card from service by entering:
remove card <card number>
where <card number> is the number of the functioning T1 card.
 - b. Swap the cables to both T1 cards.
 - c. Restore the previously functioning T1 card to service by entering:
restore card <card number>
where <card number> is the number of the functioning T1 card.
 - d. Observe the two T1 cards to see if the problem migrates with the cable.
 - e. Return the cables to their original cards.
- [4.] If, as a result of Step 3, the problem is observed to migrate with the cable, or if a second T1 card is not available to perform Step 3, check the cable between the 15-pin connector on the back of the T1 card which connects to the switch and/or CSU.
- a. Check cable continuity on pins 1, 3, 9, and 11.
 - b. Look for broken wires or a dislodged connector.
- [5.] If this is a new installation, verify that the transmit and receive wire pairs are not reversed. See Chapter 3, "Connecting Peripherals and Powering Up," of the hardware installation book for your platform.
- [6.] If a CSU is being used, verify that it is operating correctly. If this is a new installation, verify that the CSU has been properly wired and optioned.
- [7.] Check that the cable is shielded and that the shield is properly grounded at the switch.

*C TWIP022 T1 CA <equip #> Card is inoperable.

■ Message priority:

Critical (*C).

■ Description and effect:

The identified T1 card has stopped operating. The VIS is unable to process calls on this card.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
2. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- [3.] If the problem persists, perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

UNIX System Messages

UNIX001 -- -- --- NOTICE: <msg>

- Message priority:

None.

- Description and effect:

The UNIX system kernel has detected an error which has been logged on the system console. The VIS message Logger has put a copy of this message in the message log to keep a more durable record of it. The impact of this error on VIS functionality depends on the content of the specific UNIX message and the severity of the problem. In general, the severity corresponds to the priority of the logged message.

NOTICE (UNIX001) messages generally indicate problems of a less severe nature than WARNING (UNIX002) messages.

- Repair procedure:

No corrective action is necessary.

* UNIX002 -- -- --- WARNING: <msg>

- Message priority:

Minor (*).

- Description and effect:

The UNIX system kernel has detected an error which has been logged on the system console. The VIS message Logger has put a copy of this message in the message log to keep a more durable record of it. The impact of this error on VIS functionality depends on the content of the specific UNIX message and the severity of the problem. In general, the severity corresponds to the priority of the logged message.

WARNING (UNIX002) messages may not cause a system halt (PANIC) but usually indicate that system functionality is severely impaired.

- Repair procedure:

Repair of UNIX system problems require a significant level of expertise on UNIX operating system administration. Some problems (for example, time-out, i-node or file table overflows) may be fixed by changing tunable system parameters. Chapter 5 of the *UNIX System V/386 System Administrator's Guide* gives instructions on changing tunable parameters.

** UNIX003 -- -- --- TROUBLE: <msg>

- Message priority:

Major (**).

- Description and effect:

The UNIX system kernel has detected an error which has been logged on the system console. The VIS message Logger has put a copy of this message in the message log to keep a more durable record of it. The impact of this error on VIS functionality depends on the content of the specific UNIX message and the severity of the problem. In general, the severity corresponds to the priority of the logged message.

- Repair procedure:

Repair of UNIX system problems require a significant level of expertise on UNIX operating system administration. Some problems (for example, time-out, i-node or file table overflows) may be fixed by changing tunable system parameters. Chapter 5 of the *UNIX System V/386 System Administrator's Guide* gives instructions on changing tunable parameters.

*C UNIX004 -- -- --- CRITICAL: <msg>

- Message priority:

Critical (*C).

- Description and effect:

The UNIX system kernel has detected an error which has been logged on the system console. The VIS message Logger has put a copy of this message in the message log to keep a more durable record of it. The impact of this error on VIS functionality depends on the content of the specific UNIX message and the severity of the problem. In general, the severity corresponds to the priority of the logged message.

CRITICAL (UNIX004) messages correspond to UNIX "PANIC" messages. The system halts when they are issued.

- Repair procedure:

Repair of UNIX system problems require a significant level of expertise on UNIX operating system administration. Some problems (for example, time-out, i-node or file table overflows) may be fixed by changing tunable system parameters. Chapter 5 of the *UNIX System V/386 System Administrator's Guide* gives instructions on changing tunable parameters.

VROP System Messages

* VROP001 -- -- --- Speech administration failure.
Reason: Cannot [get|lock] semaphore.

- Message priority:

Minor (*).

- Description and effect:

The user's attempt to run an administrative command (for example, list phrases, add a phrase to the speech file system, copy a phrase from the speech file system to a UNIX file, or erase a phrase) has failed. Call processing is not affected.

- Repair procedure:

Perform the ***Rebooting the UNIX System*** procedure.

** VROP002 -- -- --- [Reserve space|Create phrase] failure
Reason: Speech file system(s) not writable.

- Message priority:

Major (**).

- Description and effect:

An attempt to record or add a phrase to the system has failed because all of the speech file systems are configured as "read only." All further attempts will continue to fail, but the system will continue to play existing phrases properly.

- Repair procedure:

1. Check with the system administrator to determine if the system is intended to support the addition of new phrases to the speech file system.
2. If the system is intended to support the addition of new phrases, modify the **/vs/data/fslist** file and change at least one speech file system from "read only" to "read write." A sample line in the file system list is shown below:

/dev/rdisk/0s4 32767 readwrite DI00

3. Perform the "Stopping the Voice System" and "Starting the Voice System" procedures, respectively.

* VROP003 -- -- --- No resources available on SP for speech
[coding|playback]. Reason: No SP window buffers.

■ Message priority:

Minor (*).

■ Description and effect:

An SP card was unable to perform a voice coding or playback request made by the system. The code or play request failed. This normally happens when the system is overloaded; that is, the total amount of coding or playback being attempted for all channels on the system is more than the available SP cards can handle. In this case, most requests will be completed and only those for which a message is generated will fail. Each time a failure occurs, one message is generated.

The impact may be significant if the message occurs more frequently than the currently set threshold limit. In that case, you will see a threshold message similar to the following:

** THR003 -- -- --- The first threshold level for VROP_NOSPBUFF exceeded. 20 messages have been generated in the last 1 minute.

The threshold limits and threshold message priority shown above reflect the default values for this thresholded message.

■ Repair procedure:

1. Display the state of the cards by entering:

display card

2. Verify that all SP cards assigned for VOICE function are in INSERT state.

- a. If all SP cards assigned for VOICE function are INSERT state, perform the "Reducing Load" procedure described in Chapter 4, "Common Maintenance Procedures" in this book or increase the number of SP cards in the system.
- b. If a card is in the BROKEN state, diagnose the card by entering:

diagnose card <card number>

where <card number> is the number of the affected card.

- c. If the card is in the MANOOS state, restore the card into service by entering:

restore card <card number>

where *<card number>* is the number of the affected card.

3. Display the state of the card by entering:

display card *<card number>*

where *<card number>* is the number of the affected card.

- a. If the card is in the BROKEN state, perform the "Checking a Card" procedure.
- b. If the card is in the MANOOS state, restore the card into service by entering:

restore card *<card number>*

where *<card number>* is the number of the affected card.

** VROP004 -- -- --- Voice processing failure.

Reason: Activity list corrupted.

■ Message priority:

Major (**).

■ Description and effect:

A voice function may have failed. The request has been canceled. The transaction may be hung (that is, the caller will hear nothing and nothing else will happen for the call until the call is terminated by the caller). Each time a failure occurs, one message is generated.

■ Repair procedure:

Determine the severity level of the message. The default severity level is MAJOR, yet the message may be a MINOR alarm in some cases in the software.

If the severity level of the message is MINOR, no corrective action is necessary.

If the severity level of the message is MAJOR, perform the "Stopping the Voice System" and "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

*C VROP005 -- -- --- Voice Processing failure.

Reason: [Corrupted speech buffer free list].

■ Message priority:

Critical (*C).

■ Description and effect:

Erroneous speech playback or coding may have occurred. The speech that was heard or recorded may have been terminated prematurely or replaced with other speech. Subsequent speech coding or playback may also be affected until the system is restarted.

■ Repair procedure:

Perform the "Starting the Voice System" and "Stopping the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

** VROP006 -- -- --- Initialization failure.

Reason: <reason> speech configuration file: <file>.

■ Message priority:

Major (**).

■ Description and effect:

The speech configuration file, /vs/data/spchconfig, is unreadable or has an invalid, duplicate, or missing entry. The system will use default values for missing or invalid entries for the numbers of speech buffers and/or maximum allowable phrases until this is corrected. For duplicate entries, the first value is used. The default numbers may be unsatisfactory for this system and could cause load problems, inability to access some phrases, or other performance problems.

■ Repair procedure:

1. Determine if the number of speech buffers configured in the system is sufficient to handle the current load. Enter:

display chan all

Output will be similar to:

CHN	CD.PT	STATE	STATE-CHNG-TIME	SERVICE-NAME	PHONE	GROUP	OPTS TYPE
0	0.0	Inserv	Jan 25 14:32:52	app1 -	2	tdm	T1.5
1	0.1	Inserv	Jan 25 14:32:52	app1 -	2	tdm	T1.5
	. . .		. . .	. . .			
52	2.1	Inserv	Jan 25 15:32:52	app2 -	2	talk	IVP6
53	2.2	Inserv	Jan 25 15:32:52	app2 -	2	talk	IVP6

Each channel is assigned with an option "tdm" or "talk" as shown above under OPTS. The **nbufs** parameter should be 3 times the number channels assigned with option "tdm" and 5 times the number of channels assigned with option "talk."

2. To determine the number of speech buffers currently configured in the system, enter:

cat /vs/data/spchconfig

The output will be similar to:

```
nbufs                240
max_phrases          32000
```

Increase the **nbufs** parameter listed above using the following steps:

- a. Edit the file **/vs/data/spchconfig** and change the parameter 'nbufs' to the number desired.
- b. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- c. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** VROP007 -- -- --- Phrase creation failed.

Reason: Insufficient space in speech file system(s).

■ Message priority:

Major (**).

■ Description and effect:

An attempt to add a new phrase to the speech file system failed. This could have impacted administrative commands or the coding of speech spoken by a caller. Additional similar attempts will also fail.

■ Repair procedure:

1. Determine the amount of space available in the speech file system by entering:

vdf

Write down the free blocks available.

2. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

3. Perform the "Starting the Voice System" procedure.

4. Enter **vdf** and determine the space available in the speech file system.

- [5.] If this does not result in more space, the speech file system must be increased in size, a new speech file system must be added, or existing phrases must be removed from the system. The system administrator should determine this. See Chapter 10, "Adding Additional Hardware," of the hardware installation book for your platform for information on reconfiguring the speech file systems and adding disks.

■ For application developer:

A common cause of running out of space in the speech file system is that applications that dynamically code speech from callers may not remove this speech when it is no longer needed. If Form Filler Plus is in use, make sure users are deleting messages after reviewing them. If other applications on the system code the speech of callers, make sure the application is deleting speech when no longer needed for that application. Removing phrases safely requires some understanding of the applications that are installed on the system. Some guidelines are as follows:

- a. Determine which applications are loaded on the machine and consider removing any applications not currently in use. These can be backed up to disk before removing them. The Script Builder Applications menu item in the `cvis_menu` shows all Script Builder applications. The UNIX directory **/speech/talk** contains list files for each application and may contain entries for applications not developed with Script Builder.

b. The command **list phrase all in talkfile all** shows all the phrases and talkfiles on the system. Any phrase that has no "PHRASE_NAME" listed may not be currently used for prompts for applications currently loaded on the system. However, phrases may have been coded from customer input, and should not be removed until it is verified that the phrases are not of this type (see below).

1. Talkfiles numbered less than 200 may be used for customer recorded speech by AT&T application packages such as AUDIX Voice Power, Form Filler Plus, or others and generally should not be removed.
2. If any applications developed with Script Builder use the Voice Coding statement to record customer speech, and a talkfile is being used, the developer of that application must be consulted in order for these phrases to be removed.

*C VROP008 -- -- --- Initialization failure.
Reason: <reason>.

■ Message priority:

Critical (*C).

■ Description and effect:

The speech file system has been corrupted, or the file system list file, /vs/data/fslist, which tells the system which file system(s) are being used for speech, is missing or incorrect. This particular file system cannot be used until the problem is corrected. If no file systems are valid, the VROP process will terminate and be started every 5 seconds until the problem is corrected.

■ Repair procedure:

1. Perform the "Stopping the Voice System" procedure.
2. Note the *reason* field in the message to perform one of the following procedures:
 - a. If <reason> is "Corrupted speech file system," audit and fix the speech file system by entering:

audit -2vf

- b. If <reason> is "Missing file system list," restore the file /vs/data/fslist from backup.

c. If *<reason>* is "Invalid file system list" or "Multiple entries" for a file system at a line, edit the file **/vs/data/fslist** and correct that line.

3. Perform the "Starting the Voice System" procedure.

** VROP009 -- -- --- Attempted access of non-existent phrase
<phr num> in talkfile *<tfile num>*.

■ Message priority:

Major (**).

■ Description and effect:

An application attempted to play a phrase that has not been recorded or does not currently exist on the system. The system skips that phrase and continues with the rest of the application. The message typically occurs when new applications are being developed or tested on the system. It could happen at a later time if a phrase was never recorded, or if a phrase has been removed inadvertently or corrupted and cleared by an audit. The message can also be caused by an error in the application that causes it to perform a "play" script instruction (or a Script Builder Announce action using the NX format) with garbage input. (Note that an invalid argument to a tchar instruction does not cause this message; a TSM message is generated instead.)

This error may cause the caller to miss important information, but be unaware of this fact. For example, if the unrecorded phrase was a number such as "thousand", then "5025" will be spoken as "five-twenty-five" instead of "five thousand twenty five". This can be extremely serious for some applications.

■ Repair procedure:

1. List the phrase by entering:

list phrase *phrase num* in talkfile *talkfile num*

where *phrase num* and *talkfile num* are the phrase and talkfile number from the error message. This should report "No such phrase exists".

2. Determine which applications or scripts use the phrase. Each talkfile that was created using Script Builder has an associated phrase list file, a UNIX system file, stored in the directory **/speech/talk** and uses the naming convention of ***application name.pl***.

The phrase list file contains the talkfile number and the phrase numbers and tags for every phrase tag used in a Script Builder application. Applications not created with Script Builder may have a list file with different naming conventions, such as **list.application name** (for example, **list.cabnt**). These files must be searched to locate the application that uses the missing phrase. Refer to Chapter 3, "Speech Data," of *CONVERSANT VIS 4.0 Application Development*, 585-350-208, for more information on the content of these speech files.

3. If the phrase has been recorded, restore the phrase from a backup. Refer to "Speech Restore" in Appendix A, "FACE Features," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for additional information.

If the phrase has not been recorded, record the phrase. Refer to Chapter 10, "Producing Speech," of *CONVERSANT VIS 4.0 Script Builder*, 585-350-704, for additional information.

** VROP010 -- -- --- <action> phrase failure.
Reason: Insufficient activity list entries.

■ Message priority:

Major (**).

■ Description and effect:

A failure occurred while performing the indicated action on a phrase. The action was aborted. This is caused by excessive voice activity load on the system.

■ Repair procedure:

1. Perform the "Stopping the Voice System" and "Starting the Voice System" procedures, respectively, described in Chapter 4, "Common Maintenance Procedures" in this book.

[2.] If the problem persists and there is heavy load on the system, perform the "Reducing Load" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** VROP011 -- -- --- <action> phrase failure.
Reason: Insufficient speech buffers.

■ Message priority:

Major (**).

■ Description and effect:

Insufficient speech buffers are allocated to service the number of channels in the system. Each time the message occurs, an action has failed.

■ Repair procedure:

1. Determine if the number of speech buffers configured in the system is sufficient to handle the current load. To determine the number of speech buffers currently configured in the system, enter:

cat /vs/data/spchconfig

The output will be similar to:

```
nbufs 240  
max_phrases 16000
```

The **nbufs** parameter should be 3 times the number of channels available in the system. If your application needs more speech buffers than indicated by the number shown for **nbufs**, increase the **nbufs** parameter listed above using the following steps:

- a. Edit the file **/vs/data/spchconfig** and change the parameter 'nbufs' to the number desired.
- b. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.
- c. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** VROP012 -- -- --- Phrase creation failed.
Reason: Phrase limit exceeded.

■ Message priority:

Major (**).

■ Description and effect:

An attempt to add a new phrase to the speech file system failed. This could have impacted administrative commands or the coding of speech spoken by a caller. Other attempts will also fail.

■ Repair procedure:

Either increase the max_phrases limit in the speech configuration file **/vs/data/spchconfig** by performing repair procedure for system message VROP006 or eliminate unused phrases on the voice system by performing repair procedure for system message VROP007.

* VROP013 [TR|SP] CA <equip #> Possible gap in speech [play-back|coding]. Reason: System load.

■ Message priority:

Minor (*).

■ Description and effect:

The system is not able to service speech playback or coding requests fast enough to guarantee that no speech gaps occur. Gaps may occur between phrases or within a phrase.

■ Repair procedure:

Perform the "Reducing Load" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

*C VR0P014 -- -- --- Speech file system access failure.
Reason: <UNIX errno>, Fiile System: <file system name>.

- Message priority:
Critical (*C).
- Description and effect:
VR0P/CIOX failed to access the speech file indicated during processing. Applications requiring access to this file will be incomplete.
- Repair procedure:
 1. Note the <UNIX errno> field and perform one of the following procedures:
 - a. If <UNIX errno> is "File table overflow" or "Too many open files," perform the "Rebooting the UNIX System" procedure.
 - b. If <UNIX errno> is "I/O error" or another type of device error, it might be necessary to replace the disk.
 2. Verify that all entries in the file system list **/vs/data/fslist** contain valid speech file systems.
 - a. If necessary, edit the file **vs/data/fslist** and correct the bad entry or restore it from backup.
 - b. Perform the "Stopping the Voice System" and "Starting the Voice System" procedures, respectively.

** VR0P015 -- -- --- Speech administration failure.
Reason: File [open|fstat|read|write], <string>.

- Message priority:
Major (**).
- Description and effect:
A phrase is being added to the speech file system or copied from the speech file system to a UNIX file (typically during speech backups or restores), and the UNIX file cannot be accessed.
- Repair procedure:
If the error message indicates "No space left on device," remove unnecessary files from the UNIX file system, especially in directory **/tmp**.
Any other error message indicates a problem with the UNIX operating system. Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** VROP016 -- -- --- Voice processing failure.
Reason: Speech phrase <phrase #> in talkfile <talkfile #>
corrupted.

■ Message priority:

Major (**).

■ Description and effect:

A phrase in the speech file system has been corrupted.
The phrase cannot be played or removed until the
problem has been corrected. Call processing for other
phrases is not affected.

■ Repair procedure:

1. List the phrase by entering:

list phrase *phrase num* in talkfile *talkfile num*

where *phrase num* and *talkfile num* are the phrase and talkfile
number from the error message.

You will see something similar to the following:

TALKFILE	PHRASE	SIZE IN	SIZE IN	TIME	CODING	PHRASE_NAME
NUMBER	NUMBER	BYTES	BLOCKS		TYPE	
57	1060	10448	1	2.6	ADPCM32	Please enter your account number

where the <*phrase number*> is 1060 and <*talkfile number*> is 57
and size in bytes is 10448.

[2.] If the Coding Type is Unknown, restore the phrase from backup.

[3.] If the phrase is still in error, divide the Size In Bytes by four. If there
is a remainder, the phrase has been corrupted. Rerecord the
phrase.

If there is no remainder perform the following steps:

- a. Perform the "Stopping the Voice System" procedure.
- b. Audit and fix the speech file system by entering:

audit -2vf

- c. Perform the "Starting the Voice System" procedure.
- d. Determine if the phrase still exists in the system. Enter:

list phrase *phrase num* in talkfile *talkfile num*

where *phrase num* and *talkfile num* are the phrase and talk-
file number from the error message.

[4.] If the phrase does not exist and it is a part of an application, it may have to be recovered from backup or recreated. (Refer to the repair procedure for system message VROP009.)

VROP017 -- -- --- Unexpected event [<event>] during [action]. <string>.

■ Message priority:

None.

■ Description and effect:

An unexpected event occurred during an action. This action corresponds to a script instruction or administrative request (play a phrase, code a phrase, remove a phrase, fetch, create, or update). The system detected some type of anomaly while performing the action specified. The voice response action may not have successfully completed. The root cause could be either excessive system load or a problem with an SP or T/R card reported with another message.

■ Repair procedure:

1. If the <message> field is "Bad tag, probably time expired" or "Non-outstanding tag, probably time expired," check the log for a VROP019 message and perform the repair procedure for that message.
2. If any other information appears in the <message> field, this could be due to an error in the system software.

*C VROP018 -- -- --- Voice processing failure.

■ Message priority:

Critical (*C).

■ Description and effect:

The system has failed to play or code a phrase. This is likely to recur until the problem has been resolved.

■ Repair procedure:

Perform the "Rebooting the UNIX System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

** VROP019 <SP|TR> CA <equip #> <action> phrase failure.
Reason: Timeout occurred for event <event>.

■ Message priority:

Major (**).

■ Description and effect:

A timeout failure occurred while performing the indicated action on a phrase. The action was aborted. This could be due to excessive load on the system. The cause could also be a problem with the T/R or SP card.

■ Repair procedure:

1. Determine the value for the <event> field.

2. Perform one of the following procedures:

[a.] If the <event> is BKLAVAIL, BUFVALID, NEW_PHRASE_NUM, READ_DONE, RELSEBK, REMOVE_DONE, RENAME_DONE, SPWINAVAIL, UPDATE_DONE, or WRITE_DONE:

i. Perform the "Reducing Load" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

ii. Perform the "Stopping the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

iii. Perform the "Starting the Voice System" procedure described in Chapter 4, "Common Maintenance Procedures" in this book.

[b.] If the <event> is SPSTAT_COMP, SP_VCBUF, TR_VCODE, or TR_VPLAY:

i. Diagnose the card by entering:

diagnose card <card number>

where <card number> is the number of the affected card.

ii. Display the state of the card by entering:

display card

The card should be in Inserv state. If the card is in the BROKEN state, perform the "Checking a Card" procedure described in Chapter 4, "Common Maintenance Procedures" in this book. If the card is in the MANOOS state, restore the card into service by entering:

restore card <card number>

where *<card number>* is the number of the affected card.

* VR0P020 <TR|T1> CH <equip #> Voice processing failure.
Reason: [Bad arguments for coding: talkfile/phrase].

- Message priority:
Minor (*).
- Description and effect:
Erroneous speech processing occurred in the application script. Subsequent speech processing may also be affected until the application script is corrected.
- Repair procedure:
Refer to the "For application developer" section below.
- For application developer:

Determine which application is causing the error by entering:

display chan *channel number*

where *channel number* is the channel number from the error message.

Output is similar to:

CHN	CD.PT	STATE	STATE-CHNG-TIME	SERVICE-NAME	PHONE	GROUP	OPTS	TYPE
1	0.1	Inserv	Nov 25 14:32:52	answer1	-	2	tdm	T1.5

The erroneous application is shown under SERVICE-NAME as answer1 in this example.

Correct the error in the application.

Common Maintenance Procedures

4

What's in This Chapter

This chapter contains the common maintenance procedures referenced in Chapter 2, "Trouble and Failure Indications" and Chapter 3, "System Message Listings". The procedures contained in this chapter are listed alphabetically (by verb) and are to be used to troubleshoot and correct any problems experienced during normal operation of the Intuity CONVERSANT Voice Information System (VIS).

Backing Up the System

Introduction

The system backup procedure allows you to make a complete copy of the contents of the hard disks in the system. All UNIX files under the **root** and **usr** file systems and all the speech file systems can be backed up to cartridge tape. The information is restored to the disk(s) using the system recovery boot floppy and the tapes used to back up the system. The system recovery boot floppy is supplied with the other VIS software.

NOTE:

This procedure assumes that you are using cartridge tape as the backup media. We recommend using cartridge tapes as backing up to floppy disk is a time-consuming process.

Perform a system backup after the initial software installation to ensure that you have a complete copy of your disk as you have partitioned it. If something happens to the data on the disk, it is easier to reload from the back up copy than to repeat the initial installation procedure.

Procedure

1. Perform the "Stopping the Voice System" procedure in this chapter.
2. Make sure you are in the **root** directory before proceeding with the rest of the procedure.
3. Enter **mkimage -t files** to back up **root** and **usr** files, or **mkimage -t all** to back up **root**, **usr**, and speech files. Refer to *CONVERSANT VIS 4.0 Command Reference*, 585-350-209, for additional information about the **mkimage** command.

System response:

The following are approximate tape counts required for this backup for various streaming tape drive sizes:

```
60Mb drive: $CTAPEA tape(s)
120Mb drive: $CTAPEB tape(s)
150Mb drive: $CTAPEC tape(s)
320Mb drive: $CTAPED tape(s)
525Mb drive: $CTAPEE tape(s)
```

Be sure to number the cartridge tapes consecutively in the order they will be inserted.
Label the tape(s) 'root and usr files' with the current date.

Note: Very large files, such as database files, take several minutes to back up. During this time you will not see any progress reported to the console. If the tape drive is running and the system disk light is flashing, the operation is progressing.

Please insert the first tape now. Press ENTER to start backup

\$CTAPED specifies the number of tapes needed to perform the backup

4. Insert the first tape into the cartridge tape drive and press **ENTER** to start the backup.

If an error occurs during the backup procedure, the system displays a message similar to the following:

An error occurred while attempting to write tape.
Please reinsert tape, and check that tape drive hardware is connected properly.
Press ENTER to continue or DEL to abort

Continue removing and inserting the cartridge tapes onto which the system copies the data when prompted.

After backing up the **root** and **usr** files, the system displays the following message to begin backup tape verification:

Tape backup completed. Please wait until the light goes off on the tape drive before removing the tape. Do not forget to write protect the tapes.

The backup tapes will be verified now.
Make sure the tapes are inserted in the order they are made.

Press ENTER to start verification.

5. Insert the first tape and press **ENTER**.

System response:

Note: Tape verification can take as long as backing up the files themselves. During this time you will not see any progress reported to the console. If the tape drive is running and the system disk light is flashing, the operation is progressing.

Verifying tape contents...

6. Continue removing and inserting the cartridge tapes in the order in which they were backed up when prompted.

If the verify fails, the following message is displayed:

ERROR : Verification failed. Wait for the light on the tape unit to go off before removing the tape.

Three files have been written to the /tmp directory which show the results of the backup and verification. /tmp/DISK_FILES contains a list of all the files which were to be backed up. /tmp/TAPE_FILES contains a list of all files which were actually written to the tape. /tmp/TAPE_DIFF contains the difference between these two files. Analysis of these files may help in understanding the nature of the failure.

Also, be sure you are using the supported tape cartridge type and that your tape drive is being cleaned regularly.

You can view the /tmp/TAPE_DIFF file and determine whether the files listed are not important to your application (for example, typically files in /tmp and /usr/spool). If they are not, you do not have to redo the backup at this point, but be aware when restoring from this tape, the files listed in /tmp/TAPE_FILES will be restored. If you wish to retain the backup, you may restore the speech files using **mkimage -t speech**.

If the verify works, the following message is displayed:

Backup & Verification of root and usr files completed.
Wait for the tape to stop rewinding and the red light on the tape unit to go off before removing the tape.

7. Wait for the tape to stop rewinding and the red light on the tape unit to go off before removing the tape. If you specified **mkimage -t all**, the following message is displayed:

A tape is required for speech backup.
Please label it speech backup.
Strike ENTER to begin speech backup.

8. Insert the tape to backup the speech data onto and press **ENTER**.

System response:

This save will require XXX cartridges.

9. Continue removing and inserting the cartridge tapes onto which the system copies the speech data. When the backup is done, the following message is displayed:

Speech Backup done....

You have completed this procedure.

Backing Up the SCSI Mirrored System

Introduction

The system backup procedure allows you to make a complete copy of the contents of the hard disks in the system. All UNIX files under the **root** and **usr** file systems and all the speech file systems can be backed up to cartridge tape. The information is restored to the disk(s) using the system recovery boot floppy and the tapes used to back up the system. The system recovery boot floppy is supplied with the other VIS software.

⇒ NOTE:

This procedure assumes that you are using cartridge tape as the backup media. We recommend using cartridge tapes as backing up to floppy disk is a time-consuming process.

Perform a system backup after the initial software installation to ensure that you have a complete copy of your disk as you have partitioned it. If something happens to the data on the disk, it is easier to reload from the back up copy than to repeat the initial installation procedure.

Backup Procedure

1. If you are not logged in as **root**, do so now.
2. Follow the procedure detailed below to unmirror the boot disk using FACE.
 - a. Enter **face** at the UNIX system prompt **#**. The system displays the AT&T FACE screen.
 - b. Select the following:

```
> System Administration
```

```
> Peripherals Setup
```

```
> Mirror operations
```

```
>Unmirror Boot Disk
```

System response:

The UNIX Operating System will now be rebuilt.
This will take approximately 2 minutes. Please wait.

The system must be rebooted for unmirroring the boot disk to take effect. Please shutdown the system, as soon as possible.

3. Press **F6** (CANCEL) 2 times.

You are now in the AT&T FACE screen.

4. Using the **▲** and **▼** keys, select Exit.

System response:

You are about to exit AT&T FACE.
Press CONT to exit or CANCEL to cancel the exit.

5. Press **F3** (CONT).

You are now out of FACE.

6. Enter

shutdown -y -g0



NOTE:

There may be several different system messages concerning the SCSI Mirroring. These are normal.

System response:

Reboot the system now.

7. Press the reset button to reboot the system.



NOTE:

The next time the voice system starts, the following error appears during the speech file system audit:

ERROR: fs slice mismatch (was 0x xxx is 0x xxx)

STARTING RE_BUILD OF FILE SYSTEM.

The error is normal and occurs the first time the voice system is started only after you change the mirroring configuration (that is, after you establish mirroring or remove it).

8. Login as **root**.
9. Enter **mkimage -t files** to back up **root** and **usr** files, or **mkimage -t all** to backup **root**, **usr**, and **speech** files.

System response:

Warning: This process will stop the Voice System!

Do you want to continue (y/n)?

10. Enter **y**

The following are appropriate tape counts required for this backup for various streaming tape drive sizes.

150Mb drive	\$CTAPEEC tape (s)
320Mb drive	\$CTAPED tape (s)
525Mb drive	\$CTAPEEE tape (s)

11. Be sure to number the cartridge tapes consecutively in the order they will be inserted.

12. Label the tape(s) 'root and usr files' with the current date.

⇒ NOTE:

Very large files, such as database files, take several minutes to back up. During this time you will not see any progress reported to the console. If the tape drive is running and the system disk light is flashing, the operation is progressing.

13. Insert the first tape now. Press **(ENTER)** to start backup.

\$CTAPED specifies the number of tapes needed to perform the backup.

14. Insert the first tape into the cartridge tape drive and press **(ENTER)** to start the backup.

If an error occurs during the backup procedure, the system displays a message similar to the following:

An error occurred while attempting to write tape.
Please reinsert tape and check that the tape drive
hardware is connected properly.
Press enter to continue or DEL to abort.

15. Continue removing and inserting cartridge tapes on which the system copies the data when prompted.

After backing up the **root** and **usr** files, the system displays the following message to begin backup tape verification:

Tape backup completed. Please wait until the light goes off, on the tape drive before removing the tape. Do not forget to write protect the tape(s).

The backup tapes will be verified now.

Make sure the tape(s) are inserted in the order they are made.

16. Press **(ENTER)** to start the verification.
17. Insert the first tape and press **(ENTER)**.

System response:

Verifying tape contents...

⇒ NOTE:

Tape verification can take as long as backing up the files themselves. During this time you will not see any progress reported to the console. If the tape drive is running and the system disk light is flashing, the operation is progressing.

18. Continue removing and inserting the cartridge tapes in the order in which they were backed up when prompted.

If the verify fails, the following message is displayed:

ERROR: Verification failed. Wait for the light on the tape unit to go off before removing the tape.

Three files have been written to the **tmp** directory which show the results of the backup and verification. The file **/tmp/DISK_FILES** contains a list of all the files which were backed up. The file **/tmp/TAPE_FILES** contains a list of all files which were actually written to the tape. The file **/tmp/TAPE_DIFF** contains the difference between the first two files.

Analysis of these files may help in understanding the nature of the failure.

Be sure you are using supported tape cartridge type and that your tape drive is being cleaned regularly.

You can view the **/tmp/TAPE_DIFF** file and determine whether the files listed are not important to your application (for example, typically files in **/tmp** and **/usr/spool**). If the files are not important, you do not have to redo the backup at this point, but be aware when restoring from this tape, the files listed in **/tmp/TAPE_FILES** will be restored. If you wish to retain the backup, you may complete the backup by restoring the speech files using **mkimage -t speech**.

If the verify works, the following message is displayed:

Backup & Verification of root and usr files completed.
Wait for the tape to stop rewinding and the green light
of the tape unit to go off before removing tape.

19. If you specified **mkimage -t all**, the following message is displayed:

A tape is required for speech backup. Please label it
speech backup. Strike enter to begin speech backup.

20. Press **ENTER**.

System response:

Please enter the first tape...
enter c when ready:

21. Insert the tape to backup the speech data and type **C**, then press **ENTER**.

System response:

This save will require xxx cartridges.

22. Continue removing and inserting the cartridge tapes on which the system
copies the speech data.

When the backup is done, the following message is displayed:

Speech backup done...

Mirroring Procedure

Use the following procedure to mirror the **root**, **swap**, and **/usr** file systems after
the **mkimage** has completed to restore mirroring on the system.

1. Enter

face

at the UNIX system prompt **#**. The system displays the AT&T FACE screen.

2. Select the following:

> System Administration

> Bus Administration

>SCSI

>Add Peripheral

Disk

System response:

Adding Disk

Enter Device Name
in the form c?t?d?._____

3. Enter the device file name for the hard disk that you are to mirror, c0t1d0.
Enter this device name and press **ENTER**.

4. Press **F3** (CONT).

System response:

Do you want to setup this disk to allow for mirroring of
the boot device? (y or n)

5. Enter

y

System response:

Hard Disk partitioning complete.

Do you want to perform a surface analysis on this disk?
(y/n)

6. Enter

y

System response:

Checking for the bad sectors in the UNIX System Partition
A root filesystem will now be created on your hard disk...
A usr filesystem will now be created on your hard disk...
A usr2 filesystem will now be created on your hard disk...
A usr3 filesystem will now be created on your hard disk...
New /etc/partitions entry for disk010 added.

Diskadd for disk010 DONE at <date time>

The UNIX Operating System will now be rebuilt.

This will take approximately 2 minutes. Please wait.

The UNIX kernel has been rebuilt.

The system must be rebooted for mirroring of the boot
disk to take effect. Please shutdown the system, as
soon as possible.

Press RETURN to continue

7. Press **ENTER**.

The system returns to the FACE screen.

8. Press **F6** (CANCEL) 4 times to display the AT&T FACE screen.
9. Using the **▲** and **▼** keys, move the cursor to Exit and press **ENTER**.

System response:

You are about to exit AT&T FACE.

Press CONT to exit or CANCEL to cancel the exit.

10. Press **F3** (CONT) to exit FACE.
11. Enter:

shutdown -y -g0

System response:

Reboot the system now.

12. Press the reset button to reboot the system.



NOTE:

The SCSI driver will print out the following message at boot time if Mirroring is enabled. This Warning message is normal.

WARNING: MD:Disk Partition c, xx moved into OOD state
Error:xxxxxx



NOTE:

The next time the voice system starts, the following error appears during the speech file system audit:

ERROR: fs slice mismatch (was 0x xxx is 0x xxx)
STARTING RE-BUILD OF FILE SYSTEM.

The error is normal and occurs the first time the voice system is started only after you change the mirroring configuration (that is, after you establish mirroring or remove it).

The Mirroring should now be enabled and working on the system.

Verifying Mirrors

Use the following procedure to verify mirrors:

1. If you are not logged in as **root**, do so now.
2. Enter

face

at the UNIX system prompt **#**. The system displays the AT&T FACE screen

3. Select the following:

>System Administration

> Peripheral Setup

> Mirror Operations

>Verify Mirror

System response:

5 Verify Mirror

This operation allows for verifying that both sections of a mirror are identical.

4. Press **F3** (CONT).

System response:

4 Verify Mirror

5. Press **F2** (CHOICES).

System response:

5 Choices

Displays status of both sections of the mirror.

6. Press **F6** (CANCEL) 4 times to display the AT&T FACE screen.
7. Using the **▲** and **▼** keys, move the cursor to Exit and press **ENTER**.

System response:

You are about to exit AT&T FACE.

Press CONT to exit or CANCEL to cancel the exit.

8. Press **F3** (CONT) to exit FACE.

You have completed this procedure.

Restoring the SCSI Mirrored System From Backup

If something happens to the data on your disk and you want to copy the backup to the disk, or if you want to copy the backup to a new disk, use the following procedure.

1. Insert the boot recovery floppy disk in the floppy disk drive, and turn on the unit. The boot recovery floppy *must* be write-enabled. If the system is already on, press the reset button on the front panel.

System response:

Please strike either ENTER to install the UNIX system or Del to abort.

2. Press **ENTER**.

System response:

Do you wish to partition the hard disk and create a new File System? (y/n)

3. Press **Y**.

System response:

Hard disk partitioning complete.

The system then displays several file system configurations from which you must choose one. Be sure to create the partitions for the hard disk according to the cylinder sizes of the machine backed up via tape.

File System Configuration

SELECT ONE OF THE FOLLOWING HARD DISK TYPES:

-----Cylinders-----						
	Type	Size	root	usr	swap	usr2
1.	12	68M	408	217	95	~204
2.	25	135M	295	144	53	~530
3.		600M	130	80	32	~1386
4.	SCSI	1.2G	75	75	18	~1200
5.	DEFAULT – Define File System Configuration					

ENTER SELECTION:

A surface analysis will be done before the file system is configured. Checking for bad sectors in the UNIX System partition...

Checking cylinder: xx

xx bad sectors were found during verify pass.

4. Type the number that corresponds to the size disk to which you are restoring the backed up information. If you chose the default option (option 5), you are prompted to define the system configuration.

System response:

The system displays the default file system assignments. They will vary from system to system. You are prompted to confirm that the default assignments are acceptable.

5. Press .

System response:

The system prompts you to indicate whether you want separate **root** and **usr** file systems.

6. Press .

System response:

The system prompts you to indicate whether you want an additional **usr2** file system.

7. Press .

System response:

The system asks if you wish to allocate a crash/dump area on the disk. The crash/dump area is used to save the memory image, in the event of an improper system shutdown.

Press .

8. Indicate the cylinder sizes you want for **swap**, **root**, **usr**, and **usr2**, then confirm the allocations you just made.

After the file system configuration has been created, the following messages are printed. Note that the rest of the procedure takes 10 minutes or more to complete.

UNIX System file system(s) will now be created on your hard disk...

No UNIX file system will be written to usr2 since the default voice system configuration is to put a speech file system on this slice. If you require a UNIX file system on this slice, refer to "Partitioning the Disk" in Chapter 2, "Installing the UNIX Operating System," of CONVERSANT VIS 4.0 Software Installation, 585-350-111.

UNIX System file system(s) have been created in your active UNIX System partition.

A UNIX System will now be installed on your hard disk...

If an error occurs, the following message is displayed:

An error has occurred while setting up your hard disk.

Strike Enter to install again.

When the UNIX System is installed successfully, the following message is displayed:

Will the raw speech data be restored to the hard disk? (y/n)

9. If you have speech to restore, press **(Y)** and press **(ENTER)**.

System response:

Please stand by.

When you are prompted to reboot your system, remove the floppy disk from the diskette drive when the light goes out, and press the Ctrl, Alt, and Del keys.

Please wait for the prompt.

Reboot the system now.

10. Press **(CONTROL)** **(ALT)** and **(DEL)** simultaneously to reboot the system.

System response:

Type f to recover from floppy disk and t to recover from tape.

11. Press **(T)** to recover from tape:

System response:

Insert Streaming Tape in drive and press Enter.

12. Insert the tape in the drive and press **ENTER**.

If an error occurs during the recovery, the system displays the message:
Recovery failed, tape error. Try running INSTALL again.

13. Enter **INSTALL** to start the recovery procedure again.

14. Remove the current tape and insert the next tape when the system prompts you.

When the tape recovery is complete, the following message is displayed:

UNIX System files have been copied to the hard disk.
Wait for the tape to stop rewinding and the tape
activity light on the tape unit to go off before
removing the tape. Additional system files will now be
set up.
Please stand by...

The following prompts are displayed for Root and Install Passwords:

Enter a password for the 'root' or super-user.

(Note: This password must be kept EXTREMELY secure)

Enter a password for the 'install' user.

(Note: This password must be kept EXTREMELY secure and should be different from the root password)

15. Enter the passwords you want to use for root and install.

If you abort this procedure by pressing **DEL**, the system responds:

You have aborted the installation of the UNIX System.
If you wish to re-run it, type INSTALL at the prompt.

If the recovery is successful, the following message is displayed:

The UNIX System recovery process is now complete.
When you are prompted to reboot the system, be sure the
(tape/disk) drive is empty and press the Ctrl, Alt, and
Del keys to reboot your newly configured UNIX System.

16. Press **CONTROL** **ALT** and **DEL** to reboot the system.

If the backup from which you are restoring information contains only the
root and **usr** file systems, stop.

This procedure is complete.

If the backup also contains the speech data, follow the steps below to
recover that data.

Recovering Speech Data

1. Make sure the system is recovered and rebooted.

System response:

Do you want to add a second hard disk for speech? (y/n)

2. If the VIS already has a second disk for speech, press **(N)** to continue with the restore procedure without reinstalling the second disk.
3. Log in as root and type **/tmp/speechres** at the prompt.

System response:

Type **f** to recover speech from floppy disk or **t** to recover from tape:

4. Press **(T)** to recover from tape.
5. At the prompt, insert the first tape.
6. At the prompt, remove the tape and insert the next tape, if there is one. Continue to follow the prompts on the screen.

A message is displayed when all speech has been copied to disk.



CAUTION:

If the disk partitioning was changed, you may encounter the following errors during the rebooting process before the voice system has started:

```
dumpcheck cannot read /dev/swap ; ERROR 0
```

```
BLK - ERROR
```

```
etc/scsi/setmirror Special File for dev=0xffffffff was  
not found in /dev/rdisk
```

Proceed to "Installing the SCSI Mirroring Support Package," if these errors appear; otherwise go to step 7.

7. Enter

face

at the UNIX system prompt **#**. The system displays the AT&T FACE screen.

8. Select the following:

> System Administration

> Bus Administration

> SCSI

>Add Peripheral

Disk

System response:

Adding Disk

Enter Device Name
in the form c?t?d?._____

9. Enter the device file name for the hard disk that you are to mirror, c0t1d0.
Enter this device name and press **ENTER**.

10. Press **F3** (CONT).

System response:

Do you want to setup this disk to allow for mirroring of
the boot device? (y or n)

11. Enter

y

System response:

Hard Disk partitioning complete.

Do you want to perform a surface analysis on this disk?
(y/n)

12. Enter

y

System response:

Checking for the bad sectors in the UNIX System
Partition

A root filesystem will now be created on your hard disk...

A usr filesystem will now be created on your hard disk...

A usr2 filesystem will now be created on your hard disk...

A usr3 filesystem will now be created on your hard disk...

New /etc/partitions entry for disk010 added.

Diskadd for disk010 DONE ar <date time>

The UNIX Operating System will now be rebuilt.

This will take approximately 2 minutes. Please wait.

The UNIX kernel has been rebuilt.

The system must be rebooted for mirroring of the boot disk to take effect. Please shutdown the system, as soon as possible.

Press RETURN to continue

13. Press **ENTER**.

The system returns to the FACE screen.

14. Press **F6** (CANCEL) 4 times to display the AT&T FACE screen.
15. Using the **▲** and **▼** keys, move the cursor to Exit and press **ENTER**.

System response:

You are about to exit AT&T FACE.

Press CONT to exit or CANCEL to cancel the exit.

16. Press **F3** (CONT) to exit FACE.
17. Enter:

shutdown -y -g0

System response:

Reboot the system now.

18. Press the reset button to reboot the system.



NOTE:

The SCSI driver will print out the following message at boot time if Mirroring is enabled. This Warning message is normal.

WARNING: MD:Disk Partition c, xx moved into OOD state
Error:xxxxxx



NOTE:

The next time the voice system starts, the following error appears during the speech file system audit:

ERROR: fs slice mismatch (was 0x xxx is 0x xxx)
STARTING RE-BUILD OF FILE SYSTEM.

The error is normal and occurs the first time the voice system is started only after you change the mirroring configuration (that is, after you establish mirroring or remove it).

The Mirroring should now be enabled and working on the system.

19. Perform the "Verifying Mirrors" procedure earlier in this chapter.



CAUTION:

This section is only to be used if the disk partitioning has been changed from what partitioning was saved onto backup tape and errors were encountered during the bootup process.

20. Login as root and enter

removepkg

Select the appropriate number for "SCSI Mirroring Support Package - Version 2.3." Follow the instructions that are provided on the screen.



NOTE:

To complete the remove process a shutdown is initiated automatically.

Installing the SCSI Mirroring Support Package

Use the following procedure to install this package:

1. If you are not already logged in, do so now.
 - a. Enter
2. Enter

root

at the Welcome to the AT&T 386 UNIX System prompt.

- b. Enter your password. The system responds by starting the UNIX system. You will see the UNIX system prompt #.

installpkg

System response:

Please indicate the installation medium you intend to use. Strike 'C' to install from CARTRIDGE TAPE or 'F' to install from FLOPPY DISKETTE.

Strike ESC to stop.

Please insert the floppy disk.

⇒ NOTE:

If the program installation requires more than one floppy disk, be sure to insert the disks in the proper order, starting with disk number 1. After the first floppy disk, instructions will be provided for inserting the remaining floppy disks.

Strike ENTER when ready or ESC to stop.

3. Insert the SCSI Mirroring floppy disk and press **(ENTER)**.

System response:

Installation in progress.

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Installing SCSI Mirroring Support Package - Version 2.3

The UNIX Operating System will now be rebuilt.

This will take approximately 2 minutes. Please wait.

The UNIX kernel has been rebuilt.

4. Make sure that the light on the floppy disk drive is off. When it is off, remove the floppy disk.

⇒ NOTE:

To complete the install process a shutdown is initiated automatically.

Using FACE to Mirror Disk 0 root, swap and /usr

1. If you are not logged in as root, do so now.
2. Enter

face

at the UNIX system prompt **#**. The system displays the AT&T FACE screen

3. Select the following:.

>System Administration

> Bus Administration

> SCSI

>Add Peripheral

Disk

System response:

Adding Disk

Enter Device Name
in the form c?t?d?._____

4. Enter the device file name for the hard disk that you are to mirror, c0t1d0.
Enter this device name and press **ENTER**.
5. Press **F3** (CONT).

System response:

Do you want to setup this disk to allow for mirroring of
the boot device? (y or n)

6. Enter

y

System response:

Hard Disk partitioning complete.

Do you want to perform a surface analysis on this disk?
(y/n)

7. Enter

y

System response:

Checking for the bad sectors in the UNIX System Partition
A root filesystem will now be created on your hard disk...
A usr filesystem will now be created on your hard disk...
A usr2 filesystem will now be created on your hard disk...
A usr3 filesystem will now be created on your hard disk...

New /etc/partitions entry for disk010 added.

Diskadd for disk010 DONE at <date time>

The UNIX Operating System will now be rebuilt.

This will take approximately 2 minutes. Please wait.

The UNIX kernel has been rebuilt.

The system must be rebooted for mirroring of the boot disk to
take effect. Please shutdown the system, as soon as possible.

Press RETURN to continue

8. Press **ENTER**.

The system returns to the FACE screen.

9. Press **F6** (CANCEL) 4 times to display the AT&T FACE screen.
10. Using the **▲** and **▼** keys, move the cursor to Exit and press **ENTER**.

System response:

You are about to exit AT&T FACE.

Press CONT to exit or CANCEL to cancel the exit.

11. Press **F3** (CONT) to exit FACE.
12. Enter:

shutdown -y -g0

System response:

Reboot the system now.

13. Press the reset button to reboot the system.



NOTE:

The SCSI driver will print out the following message at boot time if Mirroring is enabled. This Warning message is normal.

WARNING: MD:Disk Partition c, xx moved into OOD state
Error:xxxxxx



NOTE:

The next time the voice system starts, the following error appears during the speech file system audit:

ERROR: fs slice mismatch (was 0x xxx is 0x xxx)
STARTING RE-BUILD OF FILE SYSTEM.

The error is normal and occurs the first time the voice system is started only after you change the mirroring configuration (that is, after you establish mirroring or remove it).

The Mirroring should now be enabled and working on the system.

14. Verify mirrors using the "Verifying Mirrors" procedure earlier in this chapter.

Checking a Card

⇒ NOTE:

Have the system administrator route calls away from the system during this procedure, if desired.

1. Make sure that you know the type of card to be checked. Write down the message text so that when the system is shutdown, you know for which card you are performing this procedure.
2. If the identified card is an SP in the state BROKEN, perform the following procedure:
 - a. Shutdown the UNIX system using the "Shutting Down the Operating System" procedure in this chapter.
 - b. Check the SP to CMP cables connections to be sure they are properly connected to the appropriate cards. Refer to Chapter 7, "Installing CONVERSANT Circuit Cards," of the hardware installation book for your platform for additional information.
 - c. If the cables appear to be inserted properly, remove the SP to CMP cables entirely. This procedure involves removing the SP card from the system, then reseating it. Refer to the appendix in this book for the "Replacing a Circuit Card" procedure specific to your platform.
 - d. Start the UNIX system using the "Rebooting the UNIX System" procedure in this chapter.
 - e. Enter:

diagnose card <card number>

where <card number> is the number of the identified SP card. Take one of the following actions:

- If the SP passes diagnostics, and is on the TDM bus, enter:

diagnose bus x

where x is the number of bus (it must be either 1 or all). If the SP passes TDM diagnostics, the SP to CMP cables need to be replaced. If the SP fails TDM diagnostics, verify that the terminating resistors for the TDM bus exist only on the card connected at either end of the TDM bus and are inserted properly. See Step 3b.

- If the SP passes diagnostics and is not on the TDM bus, replace the SP to CMP cables. Refer to the appropriate appendix for replacement procedures.
- If the SP fails diagnostics, replace the SP card using the replacement procedures for circuit cards as described in the appropriate appendix of this book.

3. Shut down the UNIX system using the "Shutting Down the Operating System" procedure in this chapter.
4. Perform the general steps required for hardware installation. Refer to Chapter 6, "Installing Circuit Cards — Introduction and Types," of the hardware installation book for your platform to perform the following procedure:
 - a. Open the door to the card cage of the platform.
 - b. Verify that terminating resistors for the TDM bus exist only on the cards connected at either end of the TDM bus and are inserted correctly. The terminating resistors should have a red dot or numeral facing away from the TDM bus connector on the card.

**NOTE:**

The AYC5B and AYC11 do not require orientation of the terminating resistors.

If other cards have terminating resistors on them:

1. Remove the TDM cable.
 2. Remove the cards that should not have TDM bus terminating resistors from the system.
 3. Remove the terminating resistors from these cards.
 4. Install the cards.
 5. Attach the TDM cable.
- c. Check for proper dip switch settings on the card identified in the message and all other like cards in the system (that is, all SPs, T1s, E1s or T/Rs). Refer to Appendix D, "Circuit Card Settings" for appropriate settings.
 - d. Check for duplicate dip switch settings. Compare the dip switch setting of this card with the dip switch settings of all other like cards in the system (that is, SP with SP cards, T1 with T1 cards, E1 with E1 cards and Tip/Ring with Tip/Ring cards). If the dip switch setting is not unique, refer to Appendix D, "Circuit Card Settings" for appropriate settings.
 - e. Toggle the dip switches to ensure a clean closure.
 - f. Check to see if any of the chips on the card are not properly seated (that is, the chips are not pushed in completely or appear to be loose).
 - g. Reseat the card.
 1. Disconnect the TDM cable from the cards in the system.
 2. Remove the suspect card from the system.
 3. Install the suspect card into the system.

4. Attach the TDM cable to the cards in the system.
5. If the card is an SP card with CMP cards attached, check for the new cable design introduced for Version 3.1. Refer to the *Voice Processing Hardware Installation* book for your platform for additional information.
- h. Close the card cage of the platform.
5. Power up the system and log in as **root**.
6. Determine if the voice system is running. Enter:

who -r

System response:

The voice system is up if the run-level shown is run-level 4. If the voice system is not up as a result of the automatic start-up of the voice system having been previously disabled with the **vsdisable** command, perform the "Starting the Voice System" procedure in this chapter.

7. Enter:

display card <card number>

where <card number> is number of the affected card.

If the card state has changed to MANOOS, enter:

restore card <card number>

where <card number> is the number of the affected card.

Otherwise, go to step 7.

8. If the problem persists, shut down the UNIX system using the "Shutting Down the Operating System" procedure in this chapter.
9. Perform the general steps required for hardware installation. Refer to Chapter 6, "Installing Circuit Cards — Introduction and Types," of the hardware installation book for your platform to perform the following procedure.
 - a. Open the door to the card cage of the platform.
 - b. Change the slot in which the card resides.
 1. Remove the TDM cable from all cards in the system.
 2. Remove the suspect card from the system.
 3. Install the suspect card into a different slot in the system.
 4. Attach the TDM cable to the cards in the system.If the card is an SP with CMP(s) attached, check to see if the SP/CMP cables are the new issue cables. Refer to Chapter 7, "Installing CONVERSANT Circuit Cards," of the hardware book specific to your platform for information.

c. Close the card cage of the platform.

10. Power up the system and log in as **root**.

11. Determine if the voice system is running. Enter:

who -r

System response:

The voice system is up if the run-level shown is run-level 4. If the voice system is not up, as a result of the automatic start-up of the voice system having been previously disabled with the **vsdisable** command, perform the "Starting the Voice System" procedure in this chapter.

12. Enter:

display card <card number>

where <card number> is number of the affected card.

If the card state has changed to MANOOS, enter:

restore card <card number>

where <card number> is the number of the affected card.

Otherwise, go to step 13.

13. If the problem persists, shut down the UNIX system using the "Shutting Down the Operating System" procedure.

14. Perform the general steps required for hardware installation. Refer to Chapter 6, "Installing Circuit Cards — Introduction and Types," of the hardware installation book for your platform to perform the following procedure:

a. Open the door to the card cage of the platform.

b. Reverse the dip switch settings of the suspect card with a like card in the system (that is, SP with SP, T1 with T1, E1 with E1 and Tip/Ring with Tip/Ring).

c. Close the card cage of the platform.

15. Power up the system and log on as **root**.

16. Determine if the voice system is running. Type:

who -r

System response:

The voice system is up if the run-level shown is *run-level 4*. If the voice system is not up, as a result of the automatic start-up of the voice system having been previously disabled with the **vsdisable** command, perform the "Starting the Voice System" procedure in this chapter.

17. Enter:

display card <card number>

where <card number> is number of the affected card.

If the card state has changed to MANOOS, enter:

restore card <card number>

where <card number> is the number of the affected card.

Otherwise, go to step 17.

18. If the problem migrates with the dip switch, it is attributable to a software problem and not a hardware problem. If the problem remains with the suspect card, complete steps a through i to replace the card.

- a. Shutdown the UNIX system using the "Shutting Down the Operating System" procedure in this chapter.
- b. When prompted to reboot the system, power off the platform.
- c. Open the card cage of the platform.
- d. Remove the TDM cable from all cards in the system.
- e. Remove the suspect card from the system.
- f. Install a replacement card into the system.
- g. Attach the TDM cable to the cards in the system.
- h. Close the card cage of the platform.
- i. Power up the system and log in as **root**.

19. Determine if the voice system is running. Enter:

who -r

System response:

The voice system is up if the run-level shown is *run-level 4*. If the voice system is not up, as a result of the automatic start-up of the voice system having been previously disabled with the **vsdisable** command, perform the "Starting the Voice System" procedure in this chapter.

20. Enter:

display card <card number>

where <card number> is number of the affected card.

If the card state has changed to MANOOS, enter:

restore card <card number>

where <card number> is the number of the affected card.

Otherwise, go to step 21.

21. If the problem persists, the problem may be attributed to another card in the system. To determine which card, complete Steps a through c:
 - a. Run diagnostics on all remaining cards in the system. Enter:
diagnose card all
Observe the diagnostics for any failures.
 - b. If all cards pass diagnostics for each card in the system, perform the "Checking a Card" procedure in this chapter on a different card to determine if it is the faulty card.
 - c. If any card fails diagnostics, perform the "Checking a Card" procedure in this chapter on that card to determine if it is the source of the problem.

You have completed this procedure.

Checking the Database Free Space

1. Execute the **dbfrag** command. Refer to Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, and the *CONVERSANT VIS 4.0 Command Reference*, 585-350-209, for information on the **dbfrag** command.
2. If the percentage of free space is low (that is, less than 10%), add more space to the database. Refer to Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on increasing the database size.

You have completed this procedure.

Checking the Maximum Number of Extents

An extent is an user defined unit of storage in the ORACLE "storage" clause when defining an ORACLE object. It is used as MINEXTENTS or MAXEXTENTS in the storage clause. Refer to the "Storage Clause" section of Appendix G of the ORACLE RDBMS Database Administrator's Guide for more detail. An ORACLE object (that is, a table, an index, a rollback segment) grows one extent in size each time the object needs to be expanded. When the maximum allowed number of extents is reached, the object will not be able to grow further. The object needs to be redefined so that either the size of each extent is increased or the initial object size is increased, to reduce the number of extents required for the storage of this object.

The maximum allowed number of extents in VIS system is 121.

1. Enter:

dbused

System response:

Usage for "sti/sti"

2. Note the columns labeled EXTENTS for the current number of extents allocated for the table in questions and MAX_EXTENTS for the maximum number of extents that can be allocated for the table in question.
3. If the EXTENTS column is greater than or equal to the MAX_EXTENTS volumes, the table has reached its maximum size.
4. Perform the "Redefining Database Table Storage" procedure in this chapter to increase the table size.

You have completed this procedure.

Checking the ORACLE Network

1. Enter:

telnet *host_name*

where *host_name* is the name of the remote machine to which the database process is connected. (Check the Database Administration screen for the machine name.)

If the log in prompt appears on the screen, the network appears to be functioning properly. Press **Ctrl-d** to return to the local machine.

If the log in prompt does not appear on the screen, the network is not functioning properly. Contact the network support personnel for help.

2. Enter:

netstat -a

System response:

Active Internet connections (including servers)

Proto	Recv-Q	Send-Q	Local Address	Foreign Address	(state)
tcp	0	0	bop2.login	pwl386.1023	ESTABLISHED
tcp	0	0	bop2.1037	abc.orasrv	ESTABLISHED
tcp	0	0	*.orasrv	*.*	LISTEN
tcp	0	0	bop2.1025	*.*	LISTEN
tcp	0	0	*.who	135.7.50.255.*	
tcp	0	0	*.tftp		
tcp	0	0	*.route		

Verify that the remote machine name appears on the screen under the *Foreign Address* column and the corresponding *state* field shows ESTABLISHED. Otherwise, contact network support personnel for help.

If the remote machine name appears on the screen, verify that the ORACLE SQL*Net package is installed on the remote machine.

3. Verify that the network tunable parameters are correct according to the recommendations in the *Intuity CONVERSANT VIS Local Area Network*, 585-350-809.

4. Verify the database connection:

a. Enter:

/oracle/bin/sqlplus sti/sti

to invoke the ORACLE utility SQL*PLUS.

System response:

SQL>

b. Enter:

connect sti/sti \@T:host_name:DB_SID;

to connect the SQL*PLUS session to the remote database. The *host_name* is name of the remote machine and the *DB_SID* is the name of the remote database obtained in the DB_SID field in Database Access ID Table under Database Administration.



NOTE:

You must type a backslash sign (an escape character) following the *sti/sti* and before the @ sign.

c. If the screen displays

connected

the network and remote database are functioning. Enter:

quit

to exit from the SQL*PLUS utility.

If connected does not appear on the screen and other messages such as E0000:error:during connect – 6106 appear, contact the database administrator of the remote machine for help.

You have completed this procedure.

Checking the TDM Bus

1. To confirm that the VIS associates the suspect card with "tdm1," enter:

display card <card number >

where *card number* is the suspect card. If the card is not configured for tdm1, there is a configuration error. Perform the following procedure:

- a. Enter:

display card all |pg

and record the current system configuration and service assignments.

- b. Perform the "Stopping the Voice System" procedure in this chapter.

- c. Enter:

mv /gendb/shmem/devtbl /gendb/shmem/devtbl.old

to move the system configuration and service assignments.

- d. Perform the "Starting the Voice System" procedure in this chapter.

- e. Readminister the system configuration and service assignments.

Refer to Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for system configuration and service assignment information.

2. To confirm that the TDM master/slave configuration is appropriate, enter:

display card all | pg

3. Press **(ENTER)** to page through the display. Confirm that there is no more than one card each associated with the configuration "master1," "master2," or "master3" for "tdm1." (There can be multiple cards designated "slave.") If more than one card is configured as "master1," "master2," or "master3," there is a configuration error. Perform the following steps:

- a. Enter:

display card all |pg

and record the current system configuration and service assignments.

- b. Perform the "Stopping the Voice System" procedure in this chapter.

- c. Enter:

mv /gendb/shmem/devtbl /gendb/shmem/devtbl.old

- d. Perform the "Starting the Voice System" procedure in this chapter.

- e. Readminister the system configuration and service assignments. Refer to Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for system configuration and service assignment information.
4. Shut down the UNIX system using the "Shutting Down the Operating System" procedure in this chapter.
5. Perform the general steps required for hardware installation. Refer to Chapter 6, "Installing Circuit Cards — Introduction and Types," of the hardware installation book for your platform to perform the following procedure:
 - a. Open the door to the card cage of the platform.
 - b. Verify that terminating resistors for the TDM bus exist only on the cards connected at either end of the TDM bus and are correctly inserted. The terminating resistors should have a red dot or numeral facing away from the TDM bus connector on the card.



NOTE:

The AYC5B and AYC11 do not require orientation of the terminating resistors.

If other cards have terminating resistors on them:

- Remove the TDM cable.
 - Remove the card(s) which should not have TDM bus terminating resistors from the system.
 - Remove the terminating resistors from these cards.
 - Install the cards.
 - Attach the TDM cable.
- c. Check for proper dip switch settings on the card identified in the message. Refer to Appendix D, "Circuit Card Settings" in this book for appropriate settings.
 - d. Check for duplicate dip switch settings. Compare the dipswitch setting of this card with the dip switch settings of all other like cards in the system (that is, SP with SP cards, T1 with T1 cards, E1 with E1 cards, Tip/Ring with Tip/Ring cards). If it is not unique, refer to Appendix D, "Circuit Card Settings" in this book for appropriate dip switch settings.
 - e. Toggle the dip switches to ensure a clean closure.
 - f. Close the card cage of the platform.
 6. Power up the system and log in as **root**.

7. Determine if the voice system is running. Enter:

who -r

System response:

The voice system is up if the run-level shown is *run-level 4*. If the voice system is not up, as a result of the automatic start-up of the voice system having been previously disabled with the **vsdisable** command, perform the "Starting the Voice System" procedure in this chapter.

8. If the problem persists, shutdown the UNIX system using the "Shutting Down the Operating System" procedure.
9. Perform the general steps required for hardware installation. Refer to Chapter 6, "Installing Circuit Cards — Introduction and Types," of the hardware installation book for your platform to perform the following procedure:
- a. Open the door to the card cage of the platform.
 - b. Replace the TDM bus.
 - I. Remove the TDM cable from all cards in the system.
 - II. Attach a replacement TDM cable to the cards in the system.
 - c. Close the card cage of the platform.
10. Power up the system and log in as **root**.
11. Determine if the voice system is running. Enter

who -r

System response:

The voice system is up if the run-level shown is *run-level 4*. If the voice system is not up, as a result of the automatic start-up of the voice system having been previously disabled with the **vsdisable** command, perform the "Starting the Voice System" procedure in this chapter.

12. If the problem persists, perform the "Checking a Card" procedure in this chapter for the card designated as "master1,tdm1."

You have completed this procedure.

Dropping a Database Table

If the table resides in a non-VIS remote machine, contact the database administrator of the remote machine for assistance. If the table resides in a remote VIS machine, the following procedure should be performed on the remote machine.

1. To verify the database is running by, enter:

/oracle/bin/orastat

System response:

If "1" is displayed, perform the "Starting the Database System" procedure in this chapter. If "0" is displayed, the database is running.

2. Enter:

/oracle/bin/sqlplus sti/sti

to invoke the ORACLE SQL*PLUS utility.

System response:

SQL>

3. Enter:

drop table <"tblname">

where <"tblname"> is the name of the table to be dropped enclosed in double quotes.



NOTE:

The table name is case sensitive and *must* be enclosed in double quotes appearing exactly as it appears in the system message.

If the table is dropped successfully, you should see the following:

Table dropped.

If the <reason> field is ORA: 00942 table or view does not exist, skip the rest of Step 3.

If the table cannot be dropped:

- a. Enter:

quit

to exit the SQL*PLUS utility.

- b. Perform the "Stopping the Database System" and the "Starting the Database System" procedures in this chapter, respectively.
- c. Execute Step 3 of this procedure again.

4. Enter:

quit

to exit the SQL*PLUS utility.

You have completed this procedure.

Formatting a Low—Level SCSI Hard Disk Drive

Perform a low level format on the disk by completing the following steps:

1. Insert the diskette labeled *Low Level Format V1.3* into the floppy disk drive.
2. If the voice system is running, enter **stop_vs**
3. Press the platform RESET button to reboot the system.
As it system comes up again, it boots from the diskette in the floppy drive.
4. At the A:\> prompt, enter **debug** at the DOS prompt. The system responds by changing the prompt.
5. Enter **g=c800:6**
The system responds with a menu and requests a menu choice.
6. Choose option 2 repeatedly until you have selected your second hard disk drive.
7. Choose option 3 to format the selected disk. This operation takes approximately one hour, depending on the size of the disk.
8. When the format is completed, choose option 5 to quit the menu.
9. Remove the diskette from the floppy disk drive.
10. Reboot the system by pressing the RESET button.

You have completed this procedure.

Rebooting the UNIX System

1. If the voice system is running, perform the "Stopping the Voice System" procedure in this chapter.
2. Enter:

cd /
3. Perform the "Shutting Down the Operating System" procedure.
4. When prompted to reboot the system, press **CONTROL ALT DEL** to force the UNIX system reboot.
5. Wait for the login prompt to appear and log on as **root**.
6. To determine if the voice system is running, enter:

who -r

System response:

The voice system is up if the run-level shown is *run-level 4*. If the voice system is not up, as a result of the automatic start-up of the voice system having been previously disabled with the **vsdisable** command, perform the "Starting the Voice System" procedure in this chapter.

You have completed this procedure.

Recreating the System Traffic Tables

NOTE:

All current system traffic data is lost after performing this procedure.

1. If the voice system is running, perform the "Stopping the Voice System" procedure in this chapter.
2. Enter:

/oracle/bin/sqlplus \@ /oracle/dist/cdh.sql

to drop and recreate all system traffic tables.

3. Perform the "Starting the Voice System" procedure in this chapter.
- You have completed this procedure.

Redefining Database Table Storage

1. If the table is a remote database table, contact the database administrator of the remote machine for support. Do not continue with the rest of this procedure.
2. If the table is one of the system traffic tables (that is, CCA, CCASUM, CDH, CDHSUM, TRASUM, EVENTS, EVSUM), refer to Appendix C, "Database Environment," of *CONVERSANT VIS 4.0 Operations*, 585-350-703, for information on redefining the system traffic tables to start with a bigger initial size. Perform the "Starting the Voice System" procedure in this chapter and do not continue with the rest of this procedure.
3. If the table is an application table, refer to *Intuity CONVERSANT VIS V4.0 Operations*, 585-350-703, for information on backing up the application table.
4. Perform the "Stopping the Voice System" procedure in this chapter.
5. Refer to Appendix D, "Information for Advanced Users," of *Intuity CONVERSANT VIS V4.0 Operations*, 585-350-703, for information on restoring the application table.
6. Perform the "Starting the Voice System" procedure in this chapter, but do not activate the application(s) referencing the table.
7. Refer to *Intuity CONVERSANT VIS V4.0 Operations*, 585-350-703, for information on restoring the application table.
8. Activate the application.

You have completed this procedure.

Reducing Load

This repair procedure is provided to allow application developers and system administrators who are having performance problems on their systems to diagnose the root cause and solve the problem. Problems related to performance depend on a wide range of variables; understanding the nature of the problem requires a good understanding of the attributes of the VIS which effect performance. Consult Appendix E, "Performance Information", of *CONVERSANT VIS Version 4.0 Operations*, 585-350-703, before attempting to diagnose complex performance related problems.

Indicators of Performance Problems

Most performance related problems will become visible through either reports of slow response time from end users or performance/load related error messages in the alarm log.

Reports of Poor Response Time

If poor response time is reported but no load related messages are reported to the alarm log, it is likely that the response time delays are due to either host or database transactions or delays in custom database interface processes (DIPs). Proceed to the sections "Reducing Load for Host", "Reducing Load for Database", or "Reducing Load for DIPs" for information on how to proceed from here.

Rarely will an application see unacceptable delays due to voice processing (playing and coding phrases and recognizing touch tones) with the absence of alarms in the alarm log. Voice processing shows little change in response time as system load increases. Typically, if load increases to a point where the system cannot serve voice processing requests in real time, alarms are not logged.

Load Related Messages in the Alarm Log

Load related messages in the alarm log indicate that voice processing cannot be carried out in real time due to excessive system load. Components of the system which effect voice processing include the central processing unit (CPU), memory, the hard disk and signal processor (SP) cards (if used). See "Identifying Load Culprits" below for information on how to proceed from here.

Identifying Load Culprits

Before attempting to analyze the application for load liabilities, it is important to remember that processing external to the application may be the cause of load related problems. Check that none of the following occur at times when load-related alarms are reported:

- Using the Intuity CONVERSANT VIS Script Builder application generator on a production machine during peak load hours.
- Using call data event tracking excessively.
- Reading large (more than 50 records) database tables that are not indexed.
- Reading and writing excessively to database tables.
- Using the system monitor program with a fast refresh rate. The default refresh rate is 5 seconds. A fast refresh rate is anything less than the default.
- Requesting call data reports during peak load periods.
- Performing other operation, administration, and maintenance (OA&M) functions (includes backups, speech administration, etc.).
- System cron jobs. Every day at 12:15 a.m. all call data is summarized. If this coincides with even low voice processing activity, alarms may be reported. A possible solution is to modify the crontab entry for a time with less load.

Refer to Appendix E, "Performance Information," of *Intuity CONVERSANT VIS V4.0 Operations*, 585-350-703, for details about what constitutes extensive use of these software components and how the use of these components effects the performance of the rest of the VIS.

If sources of external load have been ruled out, it is now likely that some aspect of the application is creating the problem. It is advisable at this point to check the sections on "Reducing Load for Host", "Reducing Load for Database", "Reducing Load for DIPs", or "Reducing Load for Voice Processing" in this chapter for each software component used by your application. If no culprits can be identified, the following paragraphs provide guidance in identifying the hardware component which may be causing the problem.

Checking CPU Resources

The **sar** command reports system activity reports for a wide variety of system resources. (See **sar(1m)** in the *UNIX SVR3 System Administrators Reference Manual* for a complete description.) To display CPU usage over the current day enter:

```
sar
```

To continuously display CPU usage enter:

```
sar 5 50
```

to display current CPU usage every 5 seconds for 50 seconds.

If the output of the first command shows CPU usage (the sum of columns 2 and 3, **usr + sys**) over 50 percent during the busy hour or when alarms are logged, it is likely that alarms are a result of over utilization of CPU resources. The output of the second command should only be considered during the busy hour and CPU usage should again be below 50 percent. If either of these test show CPU utilization consistently over 50 percent it is likely that the CPU is the problem. See the subsequent section "Reducing CPU Usage".

Checking Disk Resources

The **sar(1m)** command can also be used to check disk activity. Enter either one of the following commands:

```
sar -c
```

or

```
sar -c 5 50
```

If the sum of the **rchar/s** and **wchar/s** columns is consistently greater than 160000 for EDSI and IDE or 320000 for SCSI disks during the busy hour, then it is likely that the disk is the problem. See "Reducing CPU Usage."

Checking Memory Resources

Memory may also be checked with the **sar(1m)** command. Enter:

```
sar -p
```

or

```
sar -p 5 50
```

Check the column labeled **vflt/s**. If this value is consistently greater than 2.00 then memory may be the problem.

⇒ NOTE:

Processes being created and terminated regularly will also cause vflt/s to increase. If this is the case, memory may be sufficient but the creation of processes is forcing the operating system to *page* processes to disk and back into memory. When processes are paged they respond more slowly and speech processing may be interrupted.

See "Reducing Memory Usage" later in this chapter for more information.

Checking SP Card Resources

There is no way to examine the activity on an SP card, however, the SP cards have well defined limits for how much voice processing they support. See Chapter 6, "CONVERSANT VIS Requirements and Specifications," of *CONVERSANT VIS 4.0 System Description*, 585-350-207. Be sure that your application does not go beyond these limits for the various coding types and voice activities.

Also, make sure that the appropriate number of SP cards in your system are assigned the VOICE function. See "Assigning Functions to SP Cards" in Chapter 3, "Configuration Management," of *CONVERSANT VIS 4.0 Operations*, 585-350-703.

Reducing Load for Host

Tune the 3270 host interaction.

1. Limit the number of screens that must be sent to or retrieved from the host, making the voice system less dependent on host performance.
2. The parameters associated with the host can impact system performance. Make sure that time-out periods are long enough for the host to respond but not too long so that the caller must wait unnecessarily. Be aware of how the parameters are used and what is typical for the host system. Keep track of how many LUs the system has and how many channels are to be used. For example, if a system with one host communication board (32 LUs available) has 48 calls active each of which needs to access the host, 16 callers are locked out of the host if LUs are not shared (that is, if the LUs are reserved).
3. For host systems that are known to be slow at times, one way of hiding the pause from the host is to use an announce statement between the send host screen and the get host screen statements. For example:
 - a. Prompt and Collect (get card number)
 - b. Get Host Screen A
 - c. Send Host Screen A (send the card number to the host application)
 - d. Announce (repeat the card number to the caller)

e. Get Host Screen (retrieve caller data)

This would cover part of the time that the host is slow in processing the user-input card number with an announce statement that repeats the number back to the user. By the time the announce is completed, the host may have responded. Thus the user does not realize the gap caused by the slow host response.

Reducing Load for Database

The following should be considered to reduce load due to use of the local database.

- For large tables (over 50 records) that are being read by the application, indexing the tables reduces the access time and impact on system performance.
- The insert (add) record operation is a much faster operation than the update (change) operation. One way to replace a change record with an add record is to add records to a table during the normal call hours and write a shell routine using SQL*PLUS to summarize and delete records during nonpeak hours.
- Attempt using SQL Views to encapsulate common database queries which require multiple accesses on a single table or accesses from multiple tables.

Reducing Load for DIPs

Since DIPs can be vary widely in size and complexity there is little specific information which can be given about dip performance. In general, DIPs should:

- Avoid using excessive memory (more than 200 pages)
- Avoid creating new processes (by using fork(2) and exec(2) or system(3))
- Rely on minimal communication with the script to reduce message sending

Reducing Load for Voice Processing

Refer to Appendix E, "Performance Information," in *Intuity CONVERSANT VIS V4.0 Operations*, 585-350-703, for a more detailed explanation the performance of voice processing. The information below gives a step by step approach to reducing speech processing load.

Voice Play

The following factors affect the performance of Voice Play.

Coding Algorithm	Coding algorithm primarily determines how much data must be transferred to do voice processing. Coding algorithms such as SBC16 and ADPCM16 pack 8 seconds of speech in a single block and show the best performance. PCM64 is at the other extreme of the spectrum; it packs 2 seconds of speech in a single block therefore requiring the system to do 4 times the work in the same time. ADPCM32 is the standard coding rate, a middle ground between performance and sound quality, it packs 4 seconds per block. Sound quality must be considered before moving to the SBC16 or ADPCM16 coding algorithms.

Phrase Length	Short phrases (less than 2 seconds for ADPCM32), particularly when played back to back (such as through a single Script Builder Announce action), place more load on the system than a single longer phrase. The load manifests itself as increased CPU usage, memory occupancy and, if the speech pool size (see following paragraph) is larger than the speech buffer cache, disk accesses.

For optimal performance, phrase length should be as close to the total capacity of its block count as possible. Block count is the number of speech blocks required to contain the phrase. If speech does not use blocks efficiently, space is wasted in memory and (since data is copied over from disk in block sized chunks) disk accesses and CPU usage increases.

For example, a 1 second ADPCM32 phrase uses only 25 percent of a block, whereas a 3 second phrase uses 75 percent. A 5 second phrase uses percent of its 2 blocks whereas a 7 second phrase uses percent of its 2 blocks. As phrases get longer this becomes less an issue since all but the last block will be used to capacity. This inefficiency translates into increased memory usage, CPU usage, and disk accesses. Three, one second phrases occupy 3 blocks in the Speech Buffer Cache and require three blocks to be transferred from disk; one, three second phrase requires one block in the buffer cache and a one block transfer from disk.

Speech Pool

The speech pool is the quantity of speech data required by an application. It can be thought of as the working set for those familiar with virtual memory operating system terminology. The voice system caches speech in main memory, called the speech buffer cache, this allow speech data to be re-used without having to constantly retrieve it from disk. If all the active speech data can fit into memory simultaneously, the voice system will not have to continually access the disk for speech data, a substantial savings in both CPU usage and disk accesses. If, however, the speech pool size is larger than the Speech Buffer Cache, then the voice system will have to access the disk more frequently for speech. The larger the speech pool, the more likely speech will have to read from disk.

Calculating speech pool size requires knowing which phrases are usually played during normal script processing and how many blocks of speech these phrases require. Refer to the item above regarding block capacity for various coding algorithms. Calculating the size of the buffer cache requires a meticulous analysis of the application and an understanding on how users progress through a typical call scenario.

The number of blocks available in the speech buffer cache is a tunable parameter called *nbufs* which is found in **/vs/data/spchconfig**. This value may be tuned as needed but should be done with extreme caution. Making this number too large may result in system paging, which is the worst condition the voice system can get into with respect to performance. A system showing signs of heavy disk activity, a large speech pool and no appreciable paging activity may be a candidate for increasing the *nbufs* parameter.

Reducing load due to voice play requires maximizing speech buffer efficiency, matching the speech pool size to the speech buffer cache or considering the use of different coding rates which pack more speech into a single block.

Maximal speech buffer efficiency may be achieved through the concatenation of several small phrases into a single larger phrase. The common practice of trimming silence from the ends of phrases and replacing the silence with short silent phrases is particularly inefficient. Playing silence to introduce delays also inefficient, try using the **sleep** instruction as described in Appendix A, "Summary of Script Instructions," of *CONVERSANT VIS 4.0 Application Development*, 585-350-208.

Matching the speech pool size with the speech buffer cache may be achieved through increasing speech buffer efficiency as described above, and ensuring that phrases are shared both with and between applications.

Voice Code

Performance due to voice coding is effected as is voice play with respect to phrase length and coding algorithm. Voice coding differs in speech pool size. All coded phrases are *new*, that is, there is no benefit from the speech buffer cache. Indeed, it is likely that coding phrases will force other phrases, which may be likely to be played soon, to be flushed from the cache. Coding will also require a write to disk for each phrase coded. These two factors combine to increase load on the disk. Increased disk load due to coding may be addressed by switching coding algorithms or reducing channel counts or code times. *nbufs* may also be increased (see the "Speech Pool" section under "Voice Play" for more information).

Reducing CPU Usage

Application types making heavy use of CPU resources typically include those with heavy voice processing loads or local database loads. Refer to "Reducing Load for Voice Processing" and "Reducing Load for Database" for more information. If these software components do not appear to be responsible, other possibilities include:

Inefficient DIPS

See "Reducing Load for DIPS".

Run Away Processes

If the **sar(1m)** command consistently shows 0 percent idle time, it is likely that a process is in an infinite loop. The process may be identified with **ps(1m)** by examining the change in its CPU time and run status. If it is a system process, contact a service representative, if it is a user process, repair as required.

Inefficient Scripts

There is nothing about script development which precludes users from writing perfectly insane applications. Since scripts are interpreted, attempting to use the script language or Script Builder for anything but basic call flow control may result in unacceptable inefficiencies. Code segments performing complex lexical or arithmetic calculations should be considered as candidates for DIPS.

Reducing Disk Usage

Applications making heavy use of Voice Processing or Local Database typically place heavy loads on the disk. Refer to the "Reducing Load for Voice Processing" and "Reducing Load for Database" sections. If problems persist, consider rechecking paging activity and memory usage. Refer to Appendix E, "Performance Information," in *Intuity CONVERSANT VIS V4.0 Operations*, 585-350-703, for information about the performance penalties for excessive use of call data events. Be sure that your application falls within the guidelines specified.

Reducing Memory Usage

If you have concluded that your system is tight on memory, the first thing to consider is the processes you have running on your system. Be sure to check the previous section "Identifying Load Culprits" to rule out the effects of external processing. The following processes may be terminated if they are not providing and service to the application.

xferdip	This process is used only in bridging applications. Enter xferdip_off to terminate the process.
lpsched	This process is only required if a line printer is being used with the system. The command /usr/lib/lpshut can be used to turn off the lp scheduler. A more permanent solution involves removal of the S80lp file from the /etc/rc2.d directory.
Network	Some networking processes such as rwhod may be unnecessary. See the <i>TCP/IP Networking</i> guide for more information.
sysmon	Do not run sysmon in memory tight environments.

If no processes can be eliminated then be sure that all the packages on your system are being used. If a package has been loaded on the system and it is running but not being used, it is likely that it is unnecessarily occupying memory.

Also be aware that script size, both code and data, effects memory usage. Application scripts should be shared across channels whenever possible and redundant code and data should be eliminated.

Finally, if the speech pool size is not significantly larger than the *nbufs* parameter (see the section above on "Speech Pool") consider reducing *nbufs*. The effect of reducing *nbufs* may be an increase in disk accesses for speech, however, the voice system is more tolerable to disk accesses for speech than for paging.

Reinstalling the CONVERSANT Application Software Package

1. Back up all applications using Script Builder as described in Chapter 2, "Application Administration," of *Intuity CONVERSANT VIS V4.0 Operations*, 585-350-703.
2. Back up custom work located in the **/vs/bin/ag** or other directories (for example, custom speech recognition grammars).
3. Save the current system configuration and service assignments. Enter:

```
cp /gendb/shmem/devtbl /gendb/shmem/devtbl.old
```

4. Perform the "Stopping the Voice System" procedure in this chapter.
5. Remove all patches and updates to the CONVERSANT Application Software Package. Enter:

```
removepkg
```

Select the entry corresponding to the application package you wish to remove. The UNIX kernel will be rebuilt as a result of removing this package. Press **(ENTER)** to shut down the system. When prompted to reboot the system, press **(CONTROL) (ALT) (DEL)** to force the UNIX system reboot.

6. Remove the CONVERSANT Application Package. Enter:

```
removepkg
```

Select the entry corresponding to the application package you wish to remove. The UNIX kernel will be rebuilt as a result of removing this package. Press **(ENTER)** to shut down the system. When prompted to reboot the system, press **(CONTROL) (ALT) (DEL)** to force the UNIX system reboot.

7. Install the Application Package. Follow the procedure described in Chapter 3, "Installing the Base System Software," of *Intuity CONVERSANT VIS V4.0 Software Installation*, 585-350-111.
8. Install all patches and updates to the CONVERSANT Application Software Package.
9. To determine if the voice system is running, enter:

```
who -r
```

System response:

The voice system is up if the runlevel shown is *run-level 4*. If the voice system is up, perform the "Stopping the Voice System" procedure in this chapter. (If automatic start-up of the voice system had been previously disabled with the **vsdisable** command, this step is not necessary.)

10. To restore the saved system configuration and service assignments, enter:

```
cp /gendb/shmem/devtbl.old /gendb/shmem/devtbl
```

11. Perform the "Starting the Voice System" procedure in this chapter.

12. Confirm that the system is correctly configured. Refer to Chapter 3, "Configuration Management," of *Intuity CONVERSANT VIS V4.0 Operations*, 585-350-703, for information on system configuration.
13. Confirm that all applications previously used are still present. If not, restore all applications using Script Builder as described in Chapter 2, "Application Administration," of *Intuity CONVERSANT VIS V4.0 Operations*, 585-350-703, for information on restoring applications to the system.
14. Restore custom work.

You have completed this procedure.

Reinstalling the E1 Driver

1. Perform the "Stopping the Voice System" procedure in this chapter.
2. Remove the E1 driver. Enter:

removepkg

Select the entry corresponding to the E1 Driver. The UNIX kernel will be rebuilt as a result of removing this package.

3. Press **ENTER** to shut down the system. When prompted to reboot the system, enter **init 6** to force the UNIX system reboot.
4. Reinstall the E1 driver using the "Installing the E1 Driver" procedure in *Intuity CONVERSANT VIS V4.0 Software Installation*, 585-350-703. When asked which package you want to install, select E1 Board Driver.
5. Press **ENTER** to shutdown the system. When prompted to reboot the system, enter **init 6** to force the UNIX system reboot.
6. Confirm configuration of E1 cards.
7. Determine if the voice system is running. Enter:

who -r

System response:

The voice system is up if the run-level shown is *run-level 4*. If the voice system is not up, as a result of the automatic start-up of the voice system having been previously disabled with the **vsdisable** command, perform the "Starting the Voice System" procedure in this chapter.

You have completed this procedure.

Reinstalling the SP Driver

1. Remove all cards from service. Enter:
2. Perform the "Stopping the Voice System" procedure in this chapter.
3. Save the current system configuration and service assignments. Enter:

cp /gendb/shmem/devtbl /gendb/shmem/devtbl.old

4. Back up all custom work in the **/vs/bin/ag** directory or other directories (for example, custom speech recognition grammars).
5. Remove all optional packages associated with an SP functionality (Speech Recognition, Text-to-Speech, ISDN PRI, and Call Classification Analysis). For each package installed on your system, enter:

removepkg

6. Select the entry corresponding to the optional package to be removed.

7. Remove the SP Driver. Enter:

removepkg

8. Select the entry corresponding to the SP Driver.

System response:

The UNIX kernel will be rebuilt as a result of removing this package.

9. Press **(ENTER)** to shutdown the system. When prompted to reboot the system, enter **init 6** to force the UNIX system reboot.

10. Install the SP Driver. Place the SP Driver floppy in the floppy drive and type:

installpkg

and follow the prompts as described in Chapter 2, "Installing the Base System Software," of *Intuity CONVERSANT VIS V4.0 Software Installation*, 585-350-111.

11. Select the SP driver from the list of packages.

System response:

Installing the CONVERSANT VIS V4.0 SP Board Driver

12. When prompted to reboot the system enter **init 6** to force the UNIX system reboot.

13. Determine if the voice system is running. Enter:

who -r

System response:

The voice system is up if the run-level shown is *run-level 4*. If the voice system is up, perform the "Stopping the Voice System" procedure in this chapter. (If automatic start-up of the voice system had been previously disabled with the **vsdisable** command, this step is not necessary.)

14. Install all optional packages associated with an SP functionality (Speech Recognition, Text-to-Speech, ISDN PRI, and Call Classification Analysis) previously removed. For each package you want to install, place the corresponding floppy in the floppy drive and enter:

installpkg

15. Restore the saved system configuration and service assignments. Enter:

cp /gendb/shmem/devtbl.old /gendb/shmem/devtbl

16. Restore custom work.

17. Perform the "Starting the Voice System" procedure in this chapter.

18. Restore all cards to service. Enter:

restore card all

19. Confirm that the system is correctly configured. Refer to Chapter 3, "Configuration Management," of *Intuity CONVERSANT VIS V4.0 Operations*, 585-350-703, for information on system configuration.

You have completed this procedure.

Reinstalling the T1 Driver

1. Perform the "Stopping the Voice System" procedure in this chapter.
2. Remove the T1 driver. Enter:

removepkg

Select the entry corresponding to the T1 Driver. The UNIX kernel will be rebuilt as a result of removing this package.

3. Press **ENTER** to shut down the system. When prompted to reboot the system, enter **init 6** to force the UNIX system reboot.
4. Reinstall the T1 driver using the "Installing the VIS Software Base" procedure in *Intuity CONVERSANT VIS V4.0 Software Installation*, 585-350-703. When asked which package you want to install, select T1 Board Driver.
5. Press **ENTER** to shutdown the system. When prompted to reboot the system, enter **init 6** to force the UNIX system reboot.
6. Confirm configuration of T1 cards.
7. Determine if the voice system is running. Enter:

who -r

System response:

The voice system is up if the run-level shown is *run-level 4*. If the voice system is not up, as a result of the automatic start-up of the voice system having been previously disabled with the **vsdisable** command, perform the "Starting the Voice System" procedure in this chapter.

You have completed this procedure.

Restoring the Database Directory from System Backup



CAUTION:

Current data, system traffic data, and application data may be lost depending on the date of the last system backup.

1. If the database system is running, perform the "Stopping the Database System" procedure in this chapter.
2. Perform the "Selective System Restore" procedure described in Appendix A, "FACE Features," of *Intuity CONVERSANT VIS Version 4.0 Operations*, 585-350-703, specifying the directory **/oracle/dbs**.
3. If there are other database files created outside the **/oracle/dbs** directory, perform the "Selective System Restore" procedure in Appendix A, "FACE Features," of *Intuity CONVERSANT VIS Version 4.0 Operations*, 585-350-703, for each of the files.
4. Perform the "Starting the Voice System" procedure to start the database and the voice system.

You have completed this procedure.

Restoring the System from Backup

If something happens to the data on your disk and you want to copy the backup to the disk, or if you want to copy the backup to a new disk, use the following procedure.

1. Insert the boot recovery floppy disk in the floppy disk drive, and turn on the unit. The boot recovery floppy *must* be write-enabled. If the system is already on, press the reset button on the front panel.

System response:

Please strike either ENTER to install the UNIX system
or Del to abort.

2. Press **ENTER**.

System response:

Do you wish to partition the hard disk and create a new
File System? (y/n)

3. Press **Y**.

System response:

Hard disk partitioning complete.

The system then displays several file system configurations from which you must choose one. Be sure to create the partitions for the hard disk according to the cylinder sizes of the machine backed up via tape.

File System Configuration

SELECT ONE OF THE FOLLOWING HARD DISK TYPES:

-----Cylinders-----						
	Type	Size	root	usr	swap	usr2
1.	12	68M	408	217	95	~204
2.	25	135M	295	144	53	~530
3.		600M	130	80	32	~1386
4.	SCSI	1.2G	75	75	18	~1200
5.	DEFAULT – Define File System Configuration					

ENTER SELECTION:

A surface analysis will be done before the file system is configured. Checking for bad sectors in the UNIX System partition...

Checking cylinder: xx

xx bad sectors were found during verify pass.

4. Type the number that corresponds to the size disk to which you are restoring the backed up information. If you chose the default option (option 5), you are prompted to define the system configuration.

System response:

The system displays the default file system assignments. They will vary from system to system. You are prompted to confirm that the default assignments are acceptable.

5. Press .

System response:

The system prompts you to indicate whether you want separate root and usr file systems.

6. Press .

System response:

The system prompts you to indicate whether you want an additional usr2 file system.

7. Press .

System response:

The system asks if you wish to allocate a crash/dump area on the disk.
The crash/dump area is used to save the memory image, in the event of an improper system shutdown.

8. Enter

System response:

A separate crash/dump area will be used as the crash/dump area in the event of a system panic.

The following table illustrates these numbers. In relation to the information given previously under Filesystem Sizes, the numbers used in the following table reflect the components listed under the maximum speech conditions.

Table 4-1. System Memory

System	Disk	Crash/Dump	Speech
Memory	Size	Size	Reduction
12MB	600MB	32	2%

In 600MB hard disk systems, allocate a separate crash/dump area.

9. Indicate the cylinder sizes you want for swap, root, usr, and usr2, then confirm the allocations you just made.

After the file system configuration has been created, the following messages are printed.

 NOTE:

The rest of the procedure takes 10 minutes or more to complete.

UNIX System file system(s) will now be created on your hard disk...

No UNIX file system will be written to usr2 since the default voice system configuration is to put a speech file system on this slice. If you require a UNIX file system on this slice, refer to "Partitioning the Disk" in Chapter 2, "Installing the UNIX Operating System," of CONVERSANT VIS 4.0 Software Installation, 585-350-111.

UNIX System file system(s) have been created in your active UNIX System partition.

A UNIX System will now be installed on your hard disk...

If an error occurs, the following message is displayed:

```
An error has occurred while setting up your hard
disk.
```

```
Strike Enter to install again.
```

When the UNIX System is installed successfully, the following message is displayed:

```
Will the raw speech data be restored to the hard
disk? (y/n)
```

10. If you have speech to restore, press **(Y)** and press **(ENTER)**.

System response:

```
Please stand by.
```

```
When you are prompted to reboot your system, remove
the floppy disk from the diskette drive when the
light goes out, and press the Ctrl, Alt, and Del
keys.
```

```
Please wait for the prompt.
```

```
Reboot the system now.
```

11. Press **(CONTROL)** **(ALT)** and **(DEL)** simultaneously to reboot the system.

After you have rebooted the system, it prompts you to:

```
Type f to recover from floppy disk and t to recover
from tape.
```

12. Press **(T)** to recover from tape:

System response:

```
Insert Streaming Tape in drive and press Enter.
```

13. Insert the tape in the drive and press **(ENTER)**.

If an error occurs during the recovery, the system displays the message:

```
Recovery failed, tape error. Try running INSTALL
again.
```

Enter **INSTALL** to start the recovery procedure again.

14. Remove the current tape and insert the next tape when the system prompts you.

When the tape recovery is complete, the following message is displayed:

```
UNIX System files have been copied to the hard disk.
Wait for the tape to stop rewinding and the tape
activity light on the tape unit to go off before
removing the tape. Additional system files will now
```

be set up.
Please stand by...

The following prompts are displayed for Root and Install Passwords:

Enter a password for the 'root' or super-user.



NOTE:

This password must be kept EXTREMELY secure.

Enter a password for the 'install' user.



NOTE:

This password must be kept EXTREMELY secure and should be different from the root password.

15. Enter the passwords you want to use for root and install.

If you abort this procedure by pressing **DEL**, the system responds:

You have aborted the installation of the UNIX System. If you wish to re-run it, type **INSTALL** at the prompt.

If the recovery is successful, the following message is displayed:

The UNIX System recovery process is now complete. When you are prompted to reboot the system, be sure the (tape/disk) drive is empty and press the Ctrl, Alt, and Del keys to reboot your newly configured UNIX System.

16. Press **CONTROL ALT** and **DEL** to reboot the system

If the backup from which you are restoring information contains only the root and usr file systems, stop. This procedure is complete.

If the backup also contains the speech data, follow the steps below to recover that data.

- a. Make sure the system is recovered and rebooted.

System response:

Do you want to add a second hard disk for speech?
(y/n)

- b. If the VIS already has a second disk for speech, press **N** to continue with the restore procedure without reinstalling the second disk.

- c. Log in as root and type **/tmp/speechres** at the prompt.

System response:

Type f to recover speech from floppy disk or t to recover from tape:

- d. Press **T** to recover from tape.
- e. At the prompt, insert the first tape.
- f. At the prompt, remove the tape and insert the next tape, if there is one. Continue to follow the prompts on the screen.

A message is displayed when all speech has been copied to disk. You will also see the following message on the screen:

The Voice System was disabled to allow speech to be restored.

Enabling the Voice System will cause it to be started whenever the machine is booted.

Would you like to enable the Voice System? (y/n)

- g. Press **Y**.

System response:

The Voice System is currently stopped.

Would you like to start the Voice System? (y/n)

- h. Press **Y**.

You have completed this procedure.

Shutting Down the Operating System

NOTE:

The VIS automatically resets the machine clock for daylight savings time. If your system is down at the time at that daylight savings time is updated (April and October), your machine clock will be out-of-synch with the actual time.

WARNING:

You must perform the "Stopping the Voice System" procedure in this chapter prior to shutting down the operating system.

1. From the VIS main screen, select AT&T FACE.
2. At the AT&T FACE screen, select System Administration.
3. At the System Administration menu, select Shutdown.
The Shut Down the Machine screen appears.
4. To continue with the shutdown process, press **F3** (CONT).
The Grace Period screen appears.

5. Enter the number of seconds the machine should wait before shutting down. Valid values are between 0 and 9999.

6. Press **F3** (SAVE).

If you selected "0," the shutdown starts immediately. In this case, all remote users (if any) are notified that a shutdown is starting immediately.

You have completed this procedure.

Starting the Database System

1. Enter:

/oracle/bin/iorw

to start the database system.

- a. If the database started successfully, you will see displays similar to the following:

```
ORACLE instance started.
Database mounted.
Database opened.
Total System Global Area877716 bytes
  Fixed Size 24908 bytes
  Variable Size410440 bytes
  Database Buffers409600 bytes
  Redo Buffers32768 bytes
SQL*DBA complete.
```

- b. If the database start-up fails, the system may hang, forcing you to press **DEL**, or the system may provide error information and return the system prompt. If error information is returned, enter:

/oracle/bin/oerr ora error_num

where *error_num* is the ORACLE error number in the reason field of the error message.

The output will contain a brief explanation of the error, the cause of the error, and the action to take to correct the error.

NOTE:

You can also refer to the *ORACLE Error Messages and Codes Manual* for the explanation. If the error is unique to the UNIX environment, you can also refer to the *ORACLE for UNIX Technical Reference Guide* for detailed information.

Follow the actions suggested to correct the problem.

You have completed this procedure.

Starting the Voice System

1. Enter:

start_vs

When the system is restarted, the result is displayed on the console.

2. Enter:

sysmon

Watch the display on the monitor. Do not execute any commands until all channels are in the in-service state. Once all channels are INSERT, exit this screen.

You have completed this procedure.

Stopping the Database System

1. If the voice system is still running, perform the "Stopping the Voice System" procedure in this chapter.

2. Enter:

/oracle/bin/ior s

to shut down the database. If the database shutdown is successful, you see following:

Database closed.

Database dismounted.

ORACLE instance shut down.

SQL*DBA complete.

followed by the UNIX prompt.

3. If the database shutdown was not successful:

- a. Press **(DEL)**. You see the following:

ORA-01013: user requested cancel of current
operation SQL*DBA complete.

- b. Enter:

/oracle/bin/ior c

to force the shut down of the database system. You see the following:

ORACLE instance shut down.

SQL*DBA complete.

You have completed this procedure.

Stopping the Voice System

Use this procedure when performing any of the following tasks:

- Replacing a circuit card in the unit (also need to perform the “Shutting Down the Operating System” procedure)
- Performing routine backup and restore procedures

When the voice system is stopped, the entire system is placed in the idle state when all lines are free, the internal system tables are saved, and all VIS processes are turned off.

1. Have the system administrator route calls away from the VIS, if desired.
2. Enter:

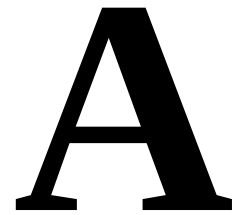
stop_vs *time*

where *time* is the time (60600 seconds) that you want the VIS to wait before it begins the shut down procedure. The default wait time is 180 seconds.

When the system is fully stopped, this result is displayed on the console.

You have completed this procedure.

MAP/100 Hardware Replacement



What's in This Appendix

This appendix describes field replacement procedures for hardware items associated with the MAP/100. These procedures should be performed only by a qualified field service representative.

The replacement procedures for the MAP/100 involve two parts: removing the component and installing the component. The installation procedure assumes that the component has already been removed from the MAP/100.

Many of the component replacement procedures require the system to be shut down completely. The system administrator should always be notified before starting any component-replacement procedure.

Preventive maintenance of the Multi-Application Platform (MAP/100) is limited to cleaning, visual inspection, and signal verification.

Prerequisites for Hardware Replacements

Before performing any of the procedures in this appendix, you must:

- Perform the "Shutting Down the Operating System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.
- Establish Electrostatic Discharge (ESD) grounding. Refer to Chapter 2, "Getting Started," of *Intuity CONVERSANT VIS MAP/100 Hardware Installation*, 585-310-148, for additional information.

Replacing the Power Supply

The following procedures describe how to remove and install the power supply component on the MAP/100. Read and follow the Power Supply Line Filter Conversion Kit document before performing the following procedure. Failure to do so will cause an FCC noise violation.

Removing the Power Supply

The power supply and battery module (PS&BM) is located on the right side of the unit. The PS&BM can be removed completely from the unit. Not all power supply modules contain batteries in the MAP/100. The -48 V DC version does not contain batteries.

1. Turn off both the front panel power switch and the circuit breaker on the back of the unit. Also, disconnect the keyboard and video cords.
2. Remove the incoming AC line.
3. Tag the power cord plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.
4. Remove the dress covers, if equipped. Refer to "How to Remove the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *Intuity CONVERSANT VIS MAP/100 Hardware Installation*, 585-310-148.
5. Open the right door on the front of the unit by placing your finger in the indentation on the bottom right corner of the door. Pull the door towards you.
6. With the door fully opened, remove it by applying upward pressure to slide it off its hinges. Set the door aside.
7. Loosen all the 1/4-turn fasteners around the perimeter of the PS&BM (13 fasteners).
8. Loosen the four fasteners on the peripheral bay on the front of the unit and the seven fasteners on the hinged door on the right side of the unit.
9. Grasp the steel framework of the peripheral bay and carefully pull the entire peripheral bay out while observing that no cable "hang-ups" occur. Continue pulling the assembly forward until it is against its mechanical stop.



CAUTION:

The power supply and battery module weighs 50 pounds. There is a handle on the back of the receptacle panel so that two persons (if necessary) can lift and move it.

10. Grasp the PS&BM external pull handle and pull the PS&BM from the unit until it rests against the safety stop while watching for any cable "hang-ups" through the open door.

-
11. Reach inside past the protective top shield and remove the mating plugs from the panel-mounted receptacles.
 12. When all disconnections have been made, push the PS&BM slightly forward and lift so that the slot on the unit and safety stops on the PS&BM are aligned. Remove the PS&BM from the unit.

You have completed this procedure.

Installing the Power Supply

1. Grasp the PS&BM external handle and replace the PS&BM in the unit by tilting it down and away from you, so that the slot in the unit and safety stop are aligned. It can then slide back into the unit. Watch for any cable "hang-ups" through the open door.
2. Reach inside past the protective top shield and reattach the mating plugs from the panel-mounted receptacles. All cables are marked, and a label on the PS&BM is provided to facilitate reattachment of the cables.
3. When all connections have been restored, slowly slide the PS&BM back into the unit. Watch for any cable "hang-ups" through the open door.
4. Slide the peripheral bay back into position. Watch for any cable "hang-ups" through the side door.



NOTE:

Read the label placed on the side plate of the unit before tightening any of the 1/4-turn fasteners. The maximum tightening torque for the 1/4-turn fasteners is 6 in-lbs (0.68 N-M). Applying excessive force will permanently damage these fasteners.

Tighten all the 1/4-turn fasteners around the perimeter of the PS&BM (13 fasteners), the four fasteners on the peripherals bay on the front of the unit, and the seven fasteners on the hinged door on the right side of the unit.

5. Replace the peripheral bay door by realigning and sliding the door back onto its hinges.
6. Replace the dress covers, if equipped. Refer to "Replacing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *CONVERSANT VIS 4.0 MAP/100 Hardware Installation*, 585-350-107.
7. Reconnect the keyboard, monitor, network circuits, and power.

You have completed this procedure.

Replacing the Battery

The following procedures detail removing and installing the battery component on the MAP/100. The battery should be replaced approximately every two years.



WARNING:

Before replacing the MAP/100 Battery Module, carefully read through these instructions. They include cautionary notes about safe handling and proper disposal of the sealed lead-acid batteries.



CAUTION:

Protective clothing should be worn in case of accidental battery electrolyte leakage. Refer to the "Battery Safety" section at the end of these instructions for more details.

Removing the Battery

All AC powered MAP/100 units are equipped with four battery cells to provide the uninterruptable power supply source voltage during all "brown-out" and most "black-out" periods. These batteries are housed in the PS&BM module. Batteries have a two year life. Replacement of these batteries is possible using the following procedure.

1. Follow the procedure "Removing the Power Supply" described earlier in this appendix to remove the PS&BM from the unit.
2. Remove the screws marked "A" from the PS&BM as shown in Figure A-1.
3. Disconnect the red lead that comes from the power supply from the top lug of the top battery.
4. Disconnect the black lead that comes from the power supply from the bottom lug of the bottom battery.
5. Remove the quick-connect contacts from all battery terminals of the new Battery module. Use these contacts to insulate the terminals of the old batteries.



WARNING:

Refer to the "Battery Safety" section of these instructions for information regarding proper handling, storage, and disposal of used lead-acid batteries.

6. Remove the batteries and metal battery case from the PS&BM.
7. Disconnect the three red jumpers that connect the batteries together.
8. Remove the two screws marked "B" in Figure A-1 from the bottom of the battery case.

-
9. Separate the two pieces of sheet metal that make up the battery case, and carefully remove the four batteries.
 10. Place the removed batteries on a protective placemat.
 11. Discard the two pieces of sheet metal from the old batteries.
- You have completed this procedure.
-

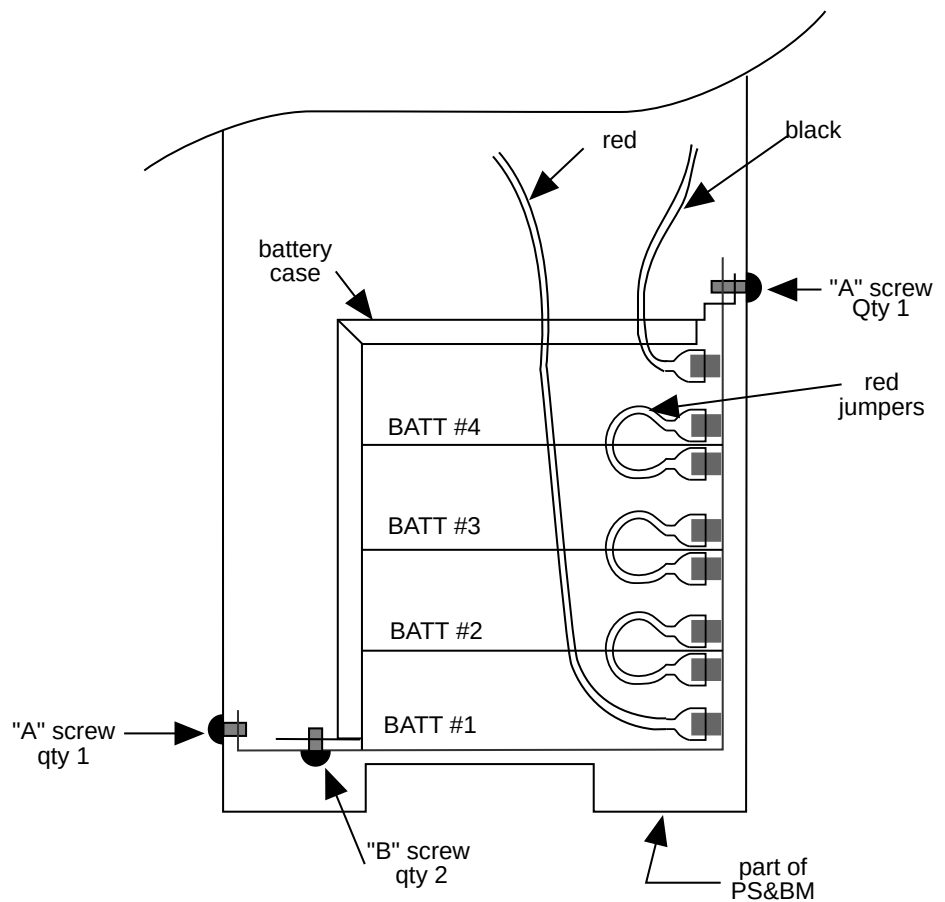


Figure A-1. Battery Module of the MAP/100

Installing the Battery

1. Install the new battery module with the battery terminals oriented as shown in Figure A-1.
2. Replace the two screws marked "B" in the bottom of the battery case.
3. Connect the batteries together with the three red jumpers as shown in Figure A-1.
4. Slide the batteries and battery case into the PS&BM and secure it with the three screws.
5. Connect the black wire from the power supply to the bottom terminal on the bottom battery.
6. Connect the red wire from the power supply to the top terminal on the top battery.
7. Remove the paper backing from the caution label, included in the battery kit. Affix this label, approximately centered, above the PS&BM outside handle. If an identical label already exists on the PS&BM exterior, disregard this step and proceed to the next step.
8. Follow the procedure "Installing the Power Supply" described earlier in this appendix to replace the PS&BM in the unit.
9. Repackage the old Batteries in the new Battery module's shipping container for disposition. Be sure to place the old batteries in the polybag included with the shipping container.

You have completed this procedure.

Battery Safety



CAUTION:

Read and understand these safety instructions before handling the lead-acid batteries in the MAP/100 Battery Module.

Rechargeable lead-acid batteries contain a small amount of fluid electrolyte that could escape if the batteries were damaged or beyond their end of life. This fluid electrolyte is corrosive to most materials, and should not be allowed to contact clothing, skin, or other parts of the MAP/100 platform. Rubber gloves, eye protection (i.e. safety glasses or goggles), and clothing should be worn, and a protective placemat should be used for placement of the removed battery module.

If the electrolyte comes in contact with skin, hair, or eyes, immediately flush the affected area with water. If the electrolyte contacts clothing, immediately flush the affected area with water and remove or change clothing as soon as possible. If the electrolyte is ingested, do not induce vomiting. Instead, drink large quantities of water and seek medical attention immediately.

To minimize the possibility of injury or damage during handling, all battery terminals should be covered with an insulator. A fully insulated quick-connect contact, thick non-conductive tape, or a dab of silicon caulking will serve this function. When handling batteries take care not to allow bracelets, watch bands, and necklaces contact the battery terminals.

Always store batteries in a cool, dry, well ventilated place. Never allow batteries near flames, sparks, or high heat sources. If there is evidence of leaking electrolyte (liquid present, corrosion, strong acrid odor, etc.) cover the liquid with absorbent clay, kitty litter or sand. Neutralize the electrolyte with sodium bicarbonate (baking soda), soda ash, or lime.



WARNING:

FEDERAL, STATE AND LOCAL LAWS PROHIBIT THE IMPROPER DISPOSAL OF LEAD-ACID BATTERIES AND HAZARDOUS WASTE CLEAN-UP MATERIALS. THE ONLY PROPER DISPOSAL METHOD FOR SPENT (NON-LEAKING) LEAD-ACID BATTERIES IS RECYCLING THEM.

The responsibility for disposal of spent batteries lies with the user. The batteries must be transported to a licensed recycling facility for proper disposal. Check your local telephone directory for facilities nearby. If none are listed, call your local state or federal EPA office for alternate locations.

See the instructions located in the battery replacement kit for recycling options.

If battery casings have failed so that any quantity of electrolyte has escaped, package batteries for shipping in a plastic bag and box (the box that contained the replacement batteries). Do not the leaking electrolyte touch your skin or the customer's floor or other equipment! If necessary, follow safety procedures included with the replacement batteries. Seal the box now containing the old batteries with tape and mark it clearly:

CONTAINS CORROSIVE MATERIALS; HOLD FOR PICKUP BY BURNHAM
TRANSPORT COMPANY, A LICENSED TRANSPORTER OF SUCH
MATERIALS.

See the instructions located in the battery replacement kit for disposal of leaking batteries.

Replacing a Fan

The MAP/100 contains six fans that provide forced-air cooling for the unit. The four fans located in the card cage on the left side of the unit and the one fan located in the rear of the unit are serviceable. The sixth fan that is located inside the power supply is *not* serviceable and repairs should *never* be attempted.

Removing a Cooling Fan

1. Locate the defective fan by using the fan indicator lamps on the front of the unit and by observation.
2. Turn off both the front panel power switch and the circuit breaker on the back of the unit.
3. Remove the incoming AC line.
4. Remove the dress covers, if equipped. Refer to "Removing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.
5. If the fan to be replaced is one of the four fans in the card cage area, proceed with the following instructions. If not, skip to step 5.
 - a. Loosen all eight of the 1/4-turn fasteners around the perimeter of the card cage access door on the left side of the unit. Open the door (Figure A-2).
 - b. All four fans are removable as an assembly. Locate and disconnect the fan connector (this connector is located adjacent to the fan bracket in the upper part of the unit).
 - c. Remove the two screws located at the top and bottom of the fan bracket.
 - d. Carefully grasp the fan assembly and remove it from the unit.
 - e. If the entire fan assembly needs to be replaced, follow the directions under "Installing the Cooling Fan" later in this appendix.
 - f. If an individual fan needs to be replaced, disconnect the red and black wires at the fan.
 - g. Remove the four screws and washers from the mounting holes and remove the fan from the fan-mounting bracket.

You have completed this procedure.

-
6. If the fan to be serviced is the rear fan, follow the steps below:
- Follow the procedure "Removing the Power Supply" described earlier in this appendix, and remove the PS&BM and set it aside.
 - Remove the top steel plate that sets on top of the PS&BM and peripheral bay side of the MAP/100 by removing the 17 flat-head machine screws.
 - Disconnect the red and black wires at the fan.
 - Remove the four screws, washers, and nuts from the mounting holes. Remove the fan and grill from the rear wall of the unit.
- You have completed this procedure.
-

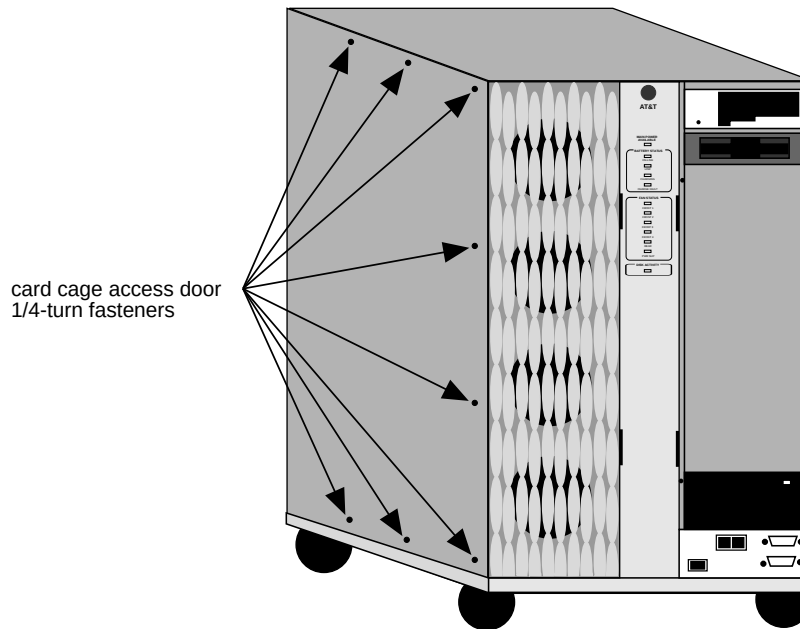


Figure A-2. Card Cage Access Door

Installing the Cooling Fan

1. If the fan to be replaced is one of the four fans in the card cage area, proceed with the following instructions. If not, skip to step 2.
 - a. For individual fan replacements, place the new fan on the fan-mounting bracket and secure it with the original screws and nuts.
 - b. Using the other fans as a guide, reconnect the red and black wires. Be sure to attach the red lead to the same relative position as the other fans.
 - c. When the fan assembly is complete or if the entire fan assembly is being replaced, reposition the assembly in the unit, making sure that the guide pins in the MAP/100 properly engage with the holes in the fan-mounting bracket.
 - d. Once positioned properly, replace the two screws and tighten them.
 - e. Reconnect the multiposition connector on the fan bracket assembly to the mating connector on the MAP/100 chassis. Tuck the connector inside the unit so that it is adjacent to the fan bracket assembly.
 - f. Close the left side door and tighten all of the 1/4-turn fasteners around its perimeter.
2. If the fan to be replaced is the rear fan, follow the steps below.
 - a. Position the fan and its grill (the grill must go to the inside of the chassis) against the inside rear fan opening and secure them with the four screws, washers, and nuts (nuts should be on the inside of the unit when the fan is mounted). Be sure to orient the fan so that the electrical connections to it are accessible once the fan is mounted.
 - b. Replace the red and black wires by attaching the red lead to the "+" terminal and the black lead to the "-" terminal.
 - c. Replace the top steel plate and secure it in place with the 17 flat-head screws.
 - d. Follow the procedure "Replacing the Power Supply" described earlier in this section to replace the PS&BM.
3. Replace the dress covers, if equipped. Refer to "Replacing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.
4. Reattach the AC power cord.

You have completed this procedure.

Replacing Fan Filters

The MAP/100 is equipped with two fan filters located behind the front doors.



NOTE:

Cleaning the fan filters should be a part of preventive maintenance. See Chapter 1, "Getting Started" for additional information.

Removing Fan Filters

The filters can be removed by opening the front doors and detaching the filter material from the velcro fasteners.

Installing Fan Filters

To install a filter, position it behind the doors and press on the velcro fasteners.

Replacing a Circuit Card

The following procedures detail removing and installing circuit cards in the MAP/100.



NOTE:

When removing and installing cards, follow the rules on card placement in Chapter 4, "Running the Configuration Program," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.

Removing a Circuit Card



WARNING:

Be sure to observe proper ESD precautions when handling computer components. Refer to Chapter 1, "Preparing the Site," of MAP/100 Voice Processing Hardware Installation, 585-350-107, for details.

1. If your system is already set up and running, perform the following steps. If the system is not running, skip to Step 2.
 - a. Make sure the system has been powered down gracefully by performing the "Stopping the Voice System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.
 - b. Turn off both the front panel power switch and the circuit breaker on the back of the unit.
 - c. Remove the incoming AC line.
 - d. Tag the power plugs with a note indicating that no one but you should reconnect power to this equipment.
2. Remove the dress covers, if equipped. Refer to "Removing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.
3. Loosen the eight 1/4-turn fasteners around the card cage access door and open the door.
4. Remove the retaining screw from the card's cover plate and save it.
5. Disconnect any cables that are attached to the card, noting their placement on the card. If this is an SP or CMP card, refer to the "Removing the SP/CMP Bus Cable" procedure provided later in this chapter.
6. Place one hand under the card (between the card and the chassis) and use the other hand to grasp the card by its upper left corner. While applying pressure towards the spring-loaded card guide located at the right edge of the circuit card, carefully withdraw the card from the unit.
7. Place the card on an ESD-protected surface.

**NOTE:**

Always place companion cards component side down. Never stack boards on top of each other.

You have completed this procedure.

Removing the SP/CMP Bus Cable

Because of space limitations on the SP and CMP circuit cards, the SP/CMP bus cable arrangement is not designed with ejectors similar to the TDM bus cable (see Figure A-3 and Figure A-4). Therefore, great care must be used when removing the SP/CMP connectors from the circuit cards. Use the following procedures to remove the SP/CMP Bus cable from the SP and CMP cards.

**NOTE:**

The following procedures assume that the unit has been powered down using the "Shutting Down the Operating System" procedure in Chapter 4, "Common Maintenance Procedures" in this book.

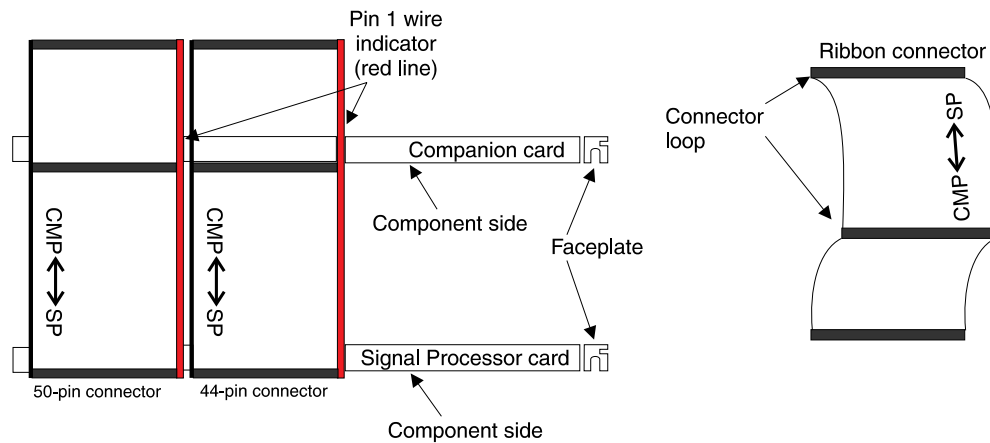


Figure A-3. Top view of SP/CMP Bus Cables

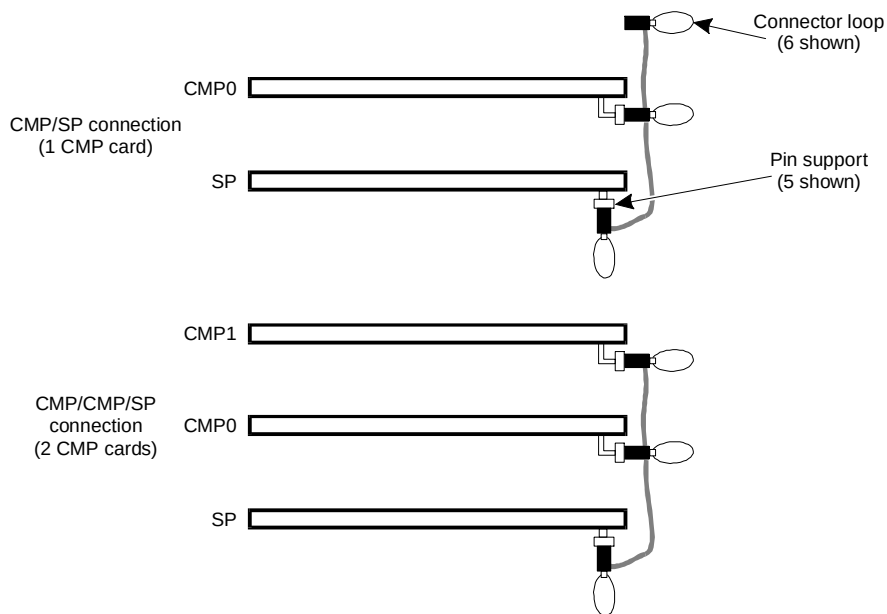


Figure A-4. End view of SP/CMP Bus Cables

Removing Cables from the CMP Card

1. Insert an index finger into the plastic loop provided with each connector on the CMP card. See Figure A-3, Figure A-4, and Figure A-5.
2. While holding the card steady with your free hand, pull with uniform force across the width of the loop to remove the connector from the CMP card. This prevents pulling one end loose and damaging the pin headers.
3. Perform these steps for each SP/CMP cable attached to the CMP card.
You have completed this procedure.

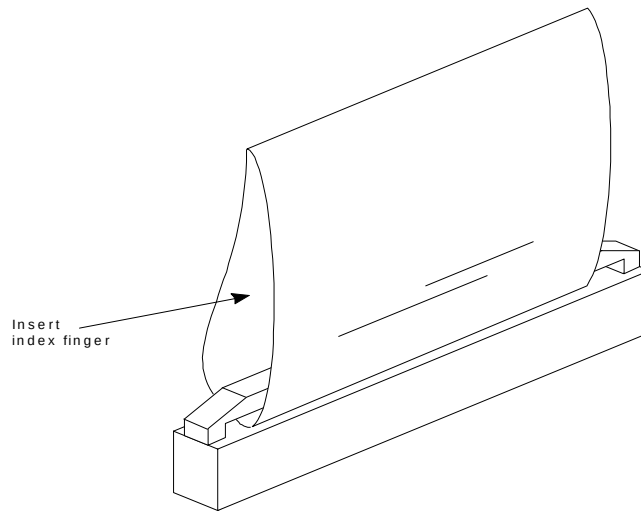


Figure A-5. SP/CMP Connector Loop

Removing Cables from the SP Card

1. Perform the "Removing Cables from the CMP Card" procedure.
2. Remove the SP card from the system using the general "Removing a Circuit Card" procedure provided in earlier in this chapter



NOTE:

It is much easier to remove the connector from the SP card once the SP card is removed from the backplane.

3. Insert an index finger into the plastic loop (See Figure A-3, Figure A-4, and Figure A-5) provided with the SP connector and hold the card steady with your free hand.
 4. Pull with uniform force across the width of the loop to remove the connector from the SP card and gently work the connector loose.
 5. Performs steps 3 and 4 for each SP/CMP cable attached to the SP.
- You have completed this procedure.

Installing a Circuit Card

1. Make sure any switches and/or jumpers are set correctly on the card. Refer to Appendix D, "Circuit Card Settings" in this book for the correct switch and jumper locations and settings.
2. Place the card in the slot. Align the card with the card guide. The card will be over the expansion slot. Lower the card until it touches the slot.
3. Place one hand on each side of the card and push it into the expansion slot. Ensure that the card is firmly seated in the slot by gently pushing on it. It will not give when firmly seated.
4. Replace the cover plate retaining screw.
5. Attach any cabling to the card. Refer to Chapter 1, "Preparing the Site," and Appendix B, "Cable Connectivity," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107, for specific cabling and pinout connection information.
6. Close the door to the card cage and tighten all the 1/4-turn fasteners.
7. Replace the dress covers, if equipped. Refer to "Replacing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.

You have completed this procedure.

Replacing the Hard Disk Drive

The following procedures detail removing and installing the hard disk drive in the MAP/100.



NOTE:

The hard disk unit is very sensitive. Be careful not to drop the unit, and always place the unit on an ESD-protected surface.

Removing the Hard Disk Drive

1. Turn off both the front power switch and the circuit breaker on the back of the unit.
2. Remove the incoming AC line.
3. Remove the dress covers, if equipped. Refer to "Removing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.
4. Open the right door on the front of the unit by placing your finger in the indentation on the bottom right corner of the door. Pull the door towards you.
5. With the door fully opened, remove it by applying upward pressure to remove it from its hinges. Set the door aside.
6. Loosen the four 1/4-turn fasteners on the front of the peripheral bay and the seven 1/4-turn fasteners on the right side door as shown in Figure A-6.
7. Grasp the steel framework of the peripheral bay and carefully pull the entire peripheral bay out of the unit while observing that no cable "hang-ups" occur (observe cables through the side door). Continue pulling the assembly forward until it comes against its mechanical stop.
8. Detach the large controller cable from the hard disk drive.
9. Detach the data cable (the smaller of the two ribbon connectors) from the hard disk drive in the same manner.



NOTE:

SCSI hard disk drives have only one ribbon cable and one power cable. Non-SCSI hard disk drives have two ribbon cables and one power cable.

10. Detach the power cable from the hard disk in the same manner.
11. Remove the four screws that secure the hard disk drive to the peripheral bay (two on each side).
12. Carefully remove the hard disk drive by sliding it out the front of the unit.

-
13. To ship back the hard disk, it must be packaged in a hard disk box, such as the box the replacement disk came in. Be careful not to drop the removed hard disk, since this will interfere with AT&T's ability to run failure mode analysis on the disk.
-

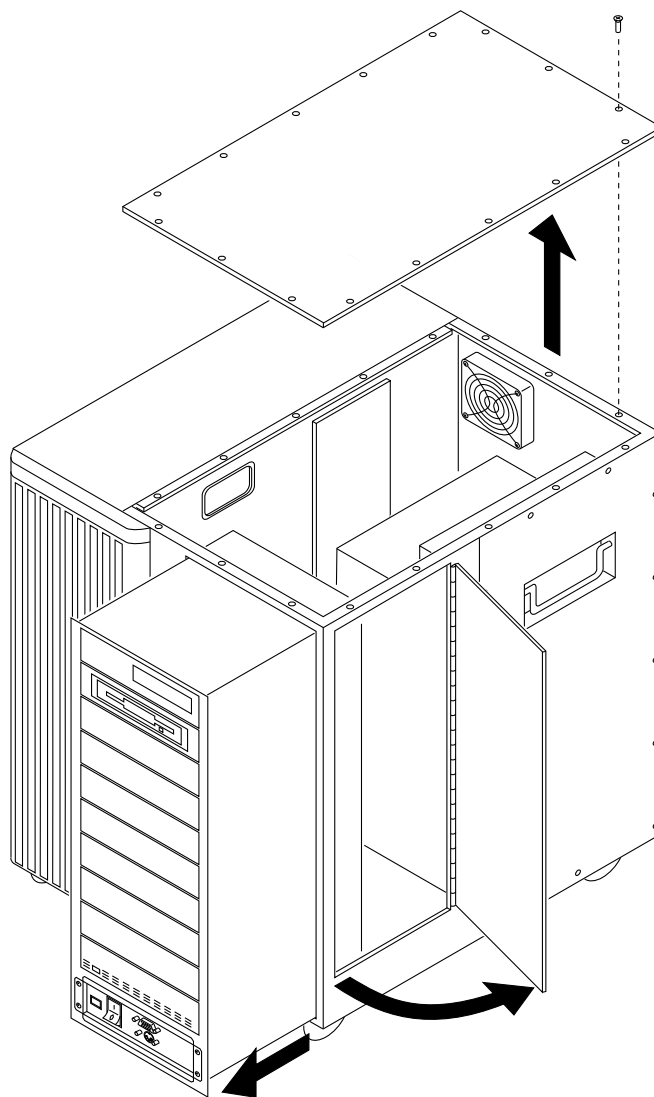


Figure A-6. Front View of MAP/100 with Doors and Deskside Panels Removed

You have completed this procedure.

Installing the SCSI Hard Disk Drive

Refer to Chapter 10, "Adding Additional Hardware," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107, for the procedure to install and correctly jumper the SCSI hard disk.

Installing the ESDI Hard Disk Drive

1. Prepare the hard disk drive for installation by verifying that all jumpers are correctly positioned as shown below in Figure A-7.

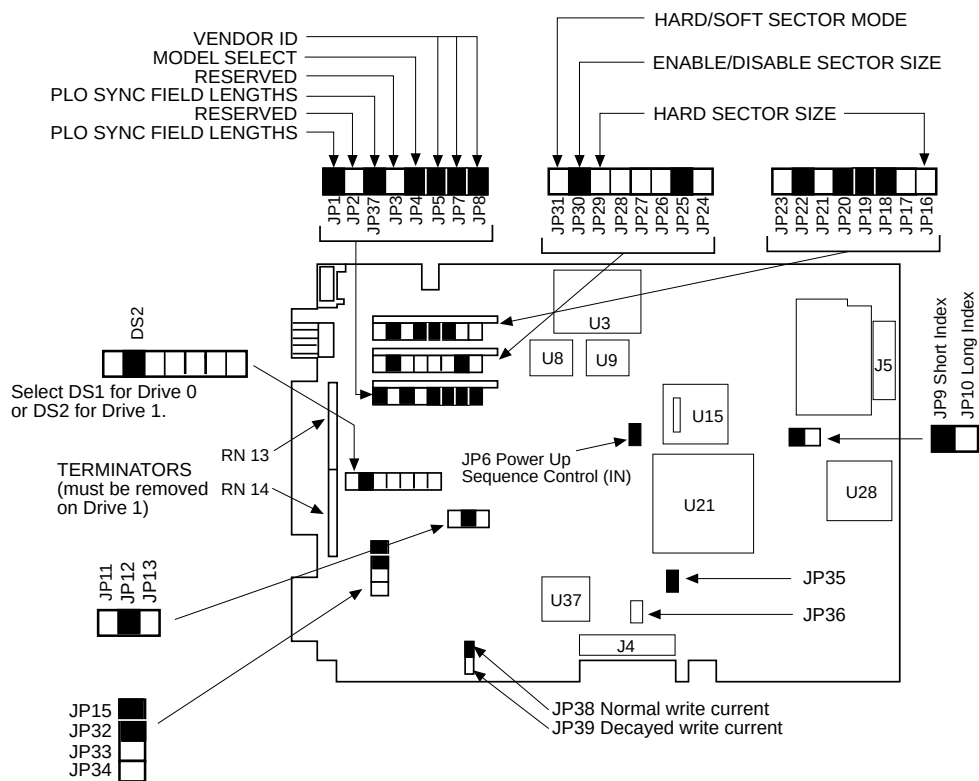


Figure A-7. Jumper Settings for ESDI Hard Disk Drive

2. Both disks (0 [zero] and 1) will have identical jumper settings except for DS1 and DS2. Disk 0 should have the DS1 jumper installed. Disk 1 should have the DS2 jumper installed. Terminating resistors (RN 13 and RN 14) must be installed on Disk 0 ONLY.

-
3. Position the hard disk drive for mounting by inserting it in the slot left available in the peripheral bay from the "Removing the Hard Disk Drive" procedure performed earlier. For SCSI systems, you need to install the disk drive in the highest position available in the unit. Push the drive in so that only the plastic faceplate of the drive protrudes from the peripheral bay framework. Fasten the drive to the unit with the four screws provided (two screws on each side).

 NOTE:

SCSI hard disk drive only have one ribbon cable and one power cable. Non-SCSI disk drives have two ribbon cables and one power cable.

Attach the large controller cable to the hard disk drive by aligning it with the gold fingers on the disk PC card and pushing it on. All connectors are "keyed" to prevent incorrect installation.

4. Attach the data cable (the smaller of the two ribbon connectors) to the hard disk drive in the same manner.
5. Attach the power cable to the hard disk drive in the same manner.
6. "Dress" all cabling together neatly and affix it to the peripheral bay assembly by adjusting the plastic cable retainer that is part of the assembly. This cable retainer can be seen by looking through the right side door.

All disk cables are held in place by this retainer as shipped from the factory. Pull on the tab at the top of the retainer to release it. Press on the retainer to secure it.
7. Slide the peripheral bay assembly back into the MAP/100 and fasten the four 1/4-turn fasteners. Make sure you observe the cables as you push the assembly back in to prevent any cable "hang-ups."
8. Close the right side door and secure the seven 1/4-turn fasteners.
9. Replace the front doors by realigning and sliding each door back onto its hinges.
10. Replace the dress covers, if equipped. Refer to "Replacing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.

 NOTE:

Perform the following step only if you are adding a new or replacing an existing second hard disk drive. Step 12 is not necessary if you are replacing Disk 0.

During the power-up process and immediately following the COM1/COM2 status display and before the screen goes blank, press **(ALT) (CONTROL) (ESC)** for disk setup procedures. Setup is required to tell the system that a second hard disk has been

installed. Follow the screen directions to change the setup parameters for DS0 and/or DS1. Chose "Type 47." Save the settings and exit setup. The machine will automatically reboot.

For ESDI disks, follow the procedure "Low Level Formatting an ESDI Hard Disk Drives" in Chapter 10, "Adding Additional Hardware," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.

You have completed this procedure.

Replacing the Floppy Disk Drive

The following procedures detail removing and installing the floppy disk drive on the MAP/100.

Removing the Floppy Disk Drive

1. Turn off both the front power switch and the circuit breaker on the back of the unit.
2. Remove the incoming AC line.
3. Remove the dress covers, if equipped. Refer to "Removing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.
4. Open the right door on the front of the unit by placing your finger in the indentation on the bottom right corner of the door. Pull the door towards you.
5. With the door fully opened, remove it by applying upward pressure to remove it from its hinges. Set the door aside.
6. Loosen the four 1/4-turn fasteners on the front of the peripheral bay and the seven 1/4-turn fasteners on the right side door as shown in Figure A-3.
7. Grasp the steel framework of the peripheral bay and carefully pull the entire peripheral bay out of the unit while observing that no cable "hang-ups" occur (observe cables through the side door). Continue pulling the assembly forward until it comes against its mechanical stop.
8. Disconnect the flat ribbon cable and the power cable from the rear of the floppy disk drive.
9. Remove the four screws that secure the floppy disk drive to the peripheral bay (two on each side).
10. Carefully remove the floppy disk drive by sliding it out the front of the unit.

You have completed this procedure.

Installing the Floppy Disk Drive

1. Slide the floppy disk drive into the position in the peripheral bay from which it was removed and secure it with the four original screws (two on each side).
2. Connect the flat ribbon cable and power cable to the floppy disk drive.
3. Slide the peripheral bay assembly back into the MAP/100 and fasten the four 1/4-turn fasteners. Make sure you observe the cables as you push the assembly back in to prevent any cable "hang-ups."
4. Close the right side door and secure the seven 1/4-turn fasteners.
5. Replace the front door by realigning and sliding the door back onto its hinges.
6. Replace the dress covers, if equipped. Refer to "Replacing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.

You have completed this procedure.

Replacing the Cartridge Tape Drive

The cartridge tape unit allows you to load, back up, and restore files using a tape cartridge instead of or in addition to floppy disks. The following procedures detail removing and installing the cartridge tape drive on the MAP/100.

Removing the Cartridge Tape Drive

1. Turn off both the front power switch and the circuit breaker on the back of the unit.
2. Remove the incoming AC line.
3. Remove the dress covers, if equipped. Refer to "Removing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.
4. Open the right door on the front of the unit by placing your finger in the indentation on the bottom right corner of the door. Pull the door towards you.
5. With the door fully opened, remove it by applying upward pressure to remove it from its hinges. Set the door aside.
6. Loosen the four 1/4-turn fasteners on the front of the peripheral bay and the seven 1/4-turn fasteners on the right side door as shown in Figure A-6.
7. Grasp the steel framework of the peripheral bay and carefully pull the entire peripheral bay out of the unit while observing that no cable "hang-ups" occur (observe cables through the side door). Continue pulling the assembly forward until it comes against its mechanical stop.
8. Disconnect the flat ribbon cable and the power cable from the rear of the cartridge tape drive.
9. Remove the four screws that secure the cartridge tape drive to the peripheral bay (two on each side).
10. Carefully remove the cartridge tape drive by sliding it out the front of the unit.

You have completed this procedure.

Installing the Cartridge Tape Drive

1. Slide the cartridge tape drive into the position in the peripheral bay from which it was removed and secure it with the four original screws (two on each side).
2. Connect the flat ribbon cable and power cable to the cartridge tape drive.
3. Slide the peripheral bay assembly back into the MAP/100 and fasten the four 1/4-turn fasteners. Make sure you observe the cables as you push the assembly back in, to prevent any cable "hang-ups."
4. Close the right side door and secure the seven 1/4-turn fasteners.
5. Replace the front door by realigning and sliding the door back onto its hinges.
6. Replace the dress covers, if equipped. Refer to "Replacing the Dress Covers," in Chapter 5, "Getting Inside the Computer," of *MAP/100 Voice Processing Hardware Installation*, 585-350-107.

You have completed this procedure.

MAP/100C Hardware Replacement

B

What's in This Appendix

Field replacement procedures for hardware items associated with the Multi-Application Platform 100 model C (MAP/100C) are described in this appendix. These procedures should be performed only by a qualified field service representative.

The replacement procedures for the MAP/100C involve two parts: removing the component and installing the component. The procedures in this appendix for replacing the components are divided into these two steps. The installation procedure assumes that the component has already been removed from the MAP/100C. Each component has been classified into one of the following categories:

- Base MAP/100C components
- Circuit card components
- System drive components

Preventive maintenance of the MAP/100C is limited to cleaning, troubleshooting, and signal verification.

Prerequisites for Hardware Replacements

Before performing any of the procedures in this appendix, you must:

- Shut down the system. Refer to Chapter 4, "Common Maintenance Procedures" in this book for specific procedures.
- Establish ESD grounding. Refer to the Chapter 1, "Preparing the Site," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for additional information.

Replacing Base MAP/100C Components

This section details the replacement of the base MAP/100C components. These components include:

- Power supply
- DC power input module
- Power indicator LED
- Circuit breaker
- Power distribution card
- Power distribution cable assembly
- CPU fan power circuit card
- Fan power cable
- Input/output cable assembly
- Fan
- Fan filters
- User-interface panel
- Front-to-rear user-interface cable assembly
- CPU-to-keyboard and serial-port cable assemblies
- Backplane unit
- Video-to-user-interface cable assembly
- Slides
- Lever latch

Replacing the Power Supply Unit

The following procedures detail removing and installing the power supply unit in the MAP/100C.

Removing the Power Supply Unit

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and power connections.
2. Loosen the two captive screws on the power supply access panel on the rear of the unit (Figure B-1) and open the door.
3. Remove the two screws on the bottom of the power supply that secure it to the unit (Figure B-2).
4. Pull the power supply unit forward slightly.
5. Disconnect the input power connection on the right of the unit.
6. Detach the three orange connectors and one white connector on the left side of the power supply unit.
7. Carefully pull the power supply out of the unit.

You have completed this procedure.

Installing the Power Supply Unit

1. With the power supply out of the unit, check the power supply backplane for jumper JP1. This is located in the lower right quadrant of the backplane. If JP1 is in position 1-2, move to position 3-4 before installing the replacement power supply.



NOTE:

If jumper JP1 is in position 1-2, the power supply fan LED will indicate a fault. The fan is operating correctly, but you need to set the jumper to 3-4 for proper operation of the LED.

2. Re-attach the connectors to the left side of the replacement power supply unit (three orange and one white).
3. Install the power input connection on the right side of the unit.
4. Slide the unit back into position, realigning it with the "ears." Carefully push the unit back until it locks into place.
5. Replace the screws removed from the bottom of the power supply unit.
6. Close the power supply access panel door. Tighten the captive screws.

You have completed this procedure.

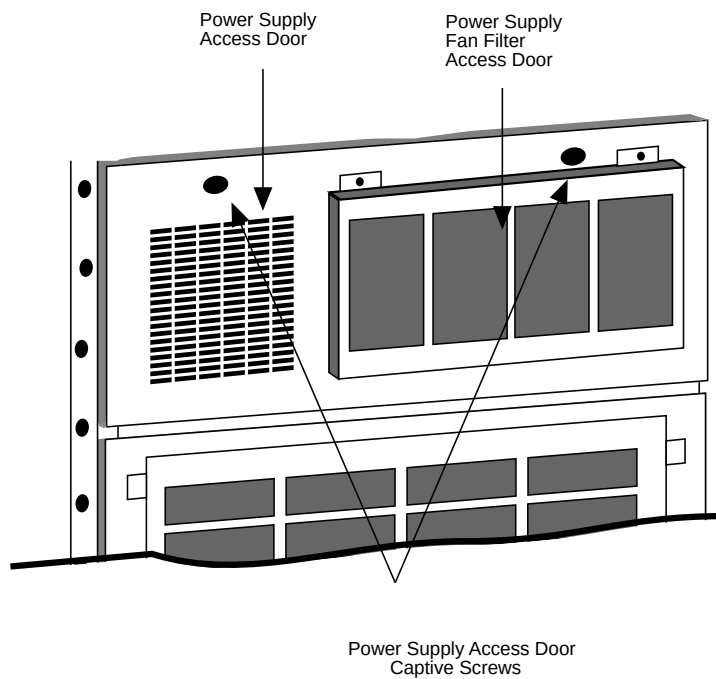


Figure B-1. Power Supply Access Door

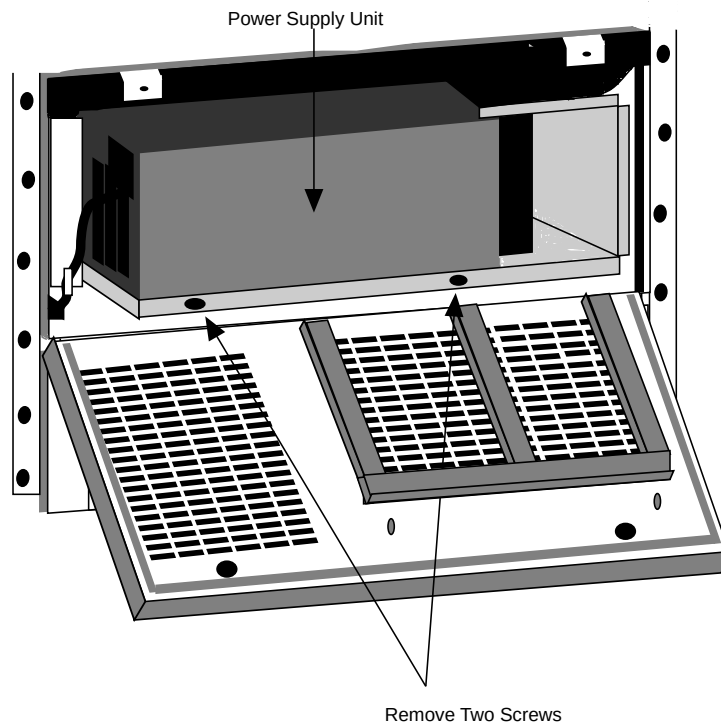


Figure B-2. Removing the Power Supply

Replacing the DC Power Input Module

The following procedures detail removing and installing the DC power input module.

Removing the DC Power Input Module

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the two captive screws on the power supply access panel on the rear of the unit and open the door.
3. Remove the power supply unit using the "Removing the Power Supply Unit" procedure provided in this appendix.
4. Remove the two remaining connectors from the DC power input module.
5. Remove the four screws that hold the DC power input module to the chassis.
6. Pull out the unit, leaving the wires attached.

You have completed this procedure.

Installing the DC Power Input Module

1. Orient the replacement card as the old one, checking the labels on each card.
2. One at a time, switch the wires to the new DC power input. Loosen the retaining screw and remove the wire, then place it in its position on the replacement power input. There are 12 wires to replace in this manner.
3. Place the DC power input unit back into its position on the side of the chassis.
4. Reinstall the four screws to secure the DC power input unit to the chassis.
5. Plug in the two connectors, then reinstall the power supply unit using the "Installing the Power Supply Unit" procedure provided in this appendix.
6. Close the power supply access panel and establish power connections.
7. Power up the unit.

You have completed this procedure.

Replacing the Power Indicator LED

The following procedures detail removing and installing the power indicator LED.

Removing the Power Indicator LED

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect power connections.
2. Loosen the two captive screws on the power supply access panel on the rear of the unit and open the door.
3. Disconnect the connector labeled J2 from the power input card. This wire is typically a white and red twisted wire.
4. Pull the power indicator LED assembly (LED, wire, and connector) out through the hole in the chassis.

You have completed this procedure.

Installing the Power Indicator LED

1. Push the power indicator LED wire through the hole labeled Power on the chassis, starting from the outside of the unit.
2. Route the cabling to the power input card and connect the wire to the connector labeled J2.
3. Close the power supply access panel and power up the unit if you have completed all necessary replacement procedures.

You have completed this procedure.

Replacing a Circuit Breaker

The following procedures detail removing and installing a circuit breaker on the MAP/100C.

Removing a Circuit Breaker

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the two captive screws on the power supply access panel on the rear of the unit and open the door.
3. Remove the four screws that hold the circuit breaker to the unit.
4. Pull out the circuit breaker, leaving the wires attached to the unit.

You have completed this procedure.

Installing a Circuit Breaker

1. One at a time, switch the wires to the circuit breaker. The white and brown wires are the line side and the blue and black wires are the load.
2. Place the circuit breaker back into its position on the unit.
3. Reinstall the four screws to secure the circuit breaker to the unit.
4. Close the power supply access panel.
5. Power up the unit.

You have completed this procedure.

Replacing the Power Distribution Card

The following procedures detail removing and installing a power distribution card on the MAP/100C.

Removing the Power Distribution Card

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the two captive screws on the power supply access panel on the rear of the unit and open the door.
3. Remove the power supply unit using the "Removing the Power Supply Unit" procedure provided in this appendix.
4. Remove all connectors from the power distribution card.
5. Remove the 13 screws that secure the power distribution card to the back of the power supply compartment.
6. Carefully pull out the power distribution card. Be sure to carefully loosen the seven connectors between the power distribution card and the backplane.

You have completed this procedure.

Installing a Power Distribution Card

1. Line up the seven connectors on the back of the power supply compartment.
2. Insert the card in the power supply compartment. Firmly press the card to the connectors from the backplane.
3. Secure the card to the unit with the 13 screws that you removed earlier.
4. Reattach all cabling to the power distribution card, using the labels on the card and cables to ensure you are making the proper connections.
5. Reinstall the power supply using the "Installing the Power Supply Unit" procedure provided in this appendix.
6. Close the power supply access door.
7. Power up the unit.

You have completed this procedure.

Replacing the Power Distribution Cable Assembly

The following procedures detail removing and installing the power distribution cable assembly in the MAP/100C.

Removing the Power Distribution Cable Assembly

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the two captive screws on the power supply access panel on the rear of the unit and open the door.
3. Remove the power supply unit using the "Removing the Power Supply Unit" procedure provided in this appendix.
4. Clip the cable ties that secure the cables to the rear of the power supply compartment.
5. Remove all connectors except those labeled J216, J217, and J220 from the power distribution card.
6. Open the CPU fan panel access door and remove both user-interface access panels.
7. Go the front of the unit and open the CPU chassis front door.
8. Detach all cables from the circuit cards and remove all full-length circuit cards from the backplane.
9. Remove the card guide.
10. Clip the cable ties that secure the cables to the floor of the unit.
11. Remove the connector labeled J8 from the front user-interface panel and the power connection from the rear of the floppy drive.
12. Pull power distribution cable assembly from the unit.

You have completed this procedure.

Installing a Power Distribution Cable Assembly

1. From the power supply compartment at the rear of the unit, attach all connectors to the power distribution card. Match the labels on the cable assembly to those that appear on the card.
2. Secure the cable assembly to the rear of the compartment using cable ties.
3. Route the cable the connector labeled J8 and the smaller 4-pin cable through the power supply access.
4. Connect the 4-pin cable to the rear of the floppy drive and connect the cable with the connector labeled J8 to the front user-interface panel.
5. Secure the cables to the floor of the chassis with cable ties.
6. Reinstall the card guide and the user-interface access panels making sure all cables are beneath the guide and panels.
7. Reinstall all circuit cards and attach appropriate cabling.
8. Replace the power supply unit using the "Installing the Power Supply Unit" procedure provided in this appendix.
9. Close all doors and establish power connections. Refer to Chapter 7, "Making System Connections," in *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
10. Power up the unit.

You have completed this procedure.

Replacing the Drive Bay Power Cable Assembly

The following procedures detail removing and installing the drive bay power cable assembly in the MAP/100C.

Removing the Drive Bay Power Cable Assembly

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the two captive screws on the power supply access panel on the rear of the unit and open the door.
3. Remove the power supply unit using the "Removing the Power Supply Unit" procedure provided in this appendix.
4. Disconnect the connector labeled J217 from the power distribution card.
5. Clip the cable ties that secure the cable to the rear of the power supply compartment.
6. Open the CPU fan panel access door and remove the left user-interface access panel.
7. Open the peripheral bay access door.
8. Disconnect the connector labeled J1 from the drive bay power distribution card.
9. Clip the cable ties that secure the drive bay power cable assembly to the smaller cable. Pull the drive bay power cable assembly out of the unit.

You have completed this procedure.

Installing the Drive Bay Power Cable Assembly

1. From the power supply compartment at the rear of the unit, attach the connector labeled J217 to the power distribution card. Match the label on the cable assembly to one that appears on the card.
2. Secure the cable assembly to the side of the compartment with cable ties.
3. Route cable through the power supply access to the peripheral bay.
4. Attach the connector labeled J1 to the drive bay power distribution card.
5. Use cable ties to secure the cable to the smaller cable.
6. Reinstall the power supply unit using the "Installing the Power Supply Unit" procedure provided in this appendix.
7. Close all doors door and establish power connections.
8. Power up the unit.

You have completed this procedure.

Replacing the CPU Fan Power Circuit Card

The following procedures detail removing and installing the CPU fan power circuit card in the MAP/100C.

Removing the CPU Fan Power Circuit Card

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Open the CPU fan access door.
3. Detach the connector labeled J220 from the CPU fan power circuit card.
4. Loosen the eight screws that secure the fan wires and disconnect the fan wires.
5. Remove the four screws that secure the CPU fan power circuit card to the unit and pull the card out of the unit.

You have completed this procedure.

Installing the CPU Fan Power Circuit Card

1. Secure the CPU fan power circuit card to the unit with the four screws removed previously.
2. Reconnect the fan wires. Black wires connect to "COM" terminals and red wires connect to "+12V" terminals.



NOTE:

Be sure to trace the wires back to the fan to ensure you are wiring the fan to the proper terminal block.

3. Attach the connector labeled J220 to the CPU fan power circuit card.
4. Close all doors and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
5. Power up the unit.

You have completed this procedure.

Replacing the CPU Chassis Fan Power Cable Assembly

The following procedures detail removing and installing the CPU chassis fan power cable assembly in the MAP/100C.

Removing the CPU Chassis Fan Power Cable Assembly

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the two captive screws on the power supply access panel on the rear of the unit and open the door.
3. Remove the power supply unit using the "Removing the Power Supply Unit" procedure provided in this appendix.
4. Detach the connector labeled J220 from the power distribution card.
5. Open the CPU fan panel access door and detach the connector labeled J220 from the CPU fan power circuit card.
6. Clip the cable ties that secure the cable to the fans.
7. Pull the cable assembly out of the unit.

You have completed this procedure.

Installing the CPU Fan Power Cable Assembly

1. From the power supply compartment at the rear of the unit, attach one end of the connector labeled J220 to the power distribution card. Match the label on the cable assembly to one that appears on the card.



NOTE:

It does not matter which end of the cable you attach to the power distribution card. Both ends of the cable are identical.

2. Route the cable through the power supply access to the CPU fan area.
3. Attach the other end of the J220 connector to the CPU fan power circuit card.
4. Secure the cable to the fan with cable ties.
5. Close the CPU fan access door.
6. Reinstall the power supply unit using the "Installing the Power Supply Unit" procedure provided in this appendix.

-
7. Close the power supply access door and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
 8. Power up the unit.

You have completed this procedure.

Replacing the Input/Output Interface Cable Assembly

The following procedures detail removing and installing the input/output interface cable assembly in the MAP/100C.

Removing the Input/Output Interface Cable Assembly

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the two captive screws on the power supply access panel on the rear of the unit and open the door.
3. Remove the power supply unit using the "Removing the Power Supply Unit" procedure provided in this appendix.
4. Detach the connector labeled J216 from the power distribution card.
5. Open the CPU fan panel access door and remove both user-interface access panels.
6. Go the front of the unit and open the CPU chassis front door.
7. Detach all cables from the circuit cards and remove all full-length circuit cards from the backplane.
8. Remove the card guide panel.
9. Detach the connector labeled J216 on the front user-interface panel near the fan LEDs.
10. Clip the cable ties that secure the cable to the floor of the unit.
11. Release the cable retainer clips that secure the ribbon cable to the side of the unit.
12. Pull the cable assembly from the unit.

You have completed this procedure.

Installing an Input/Output Interface Cable Assembly

1. Lay the old cable assembly next to the replacement assembly. Fold the new cable like the old to allow proper routing and dressing inside the unit.
2. From the power supply compartment at the rear of the unit, attach the connector labeled J216 connector to the power distribution card. Match the label on the cable assembly to the one that appears on the card.
3. Route the cable through the power supply access to the CPU chassis area through the cable retainer clip located on the side of the chassis.
4. Secure the cable to the other cable ties.
5. Attach the connector labeled J216 to the front user-interface panel at the point on the panel labeled J216.
6. Reinstall the card guide panel and all full-length circuit cards with the appropriate cabling.
7. Reinstall the user-interface access panels.
8. Replace the power supply unit using the "Installing the Power Supply Unit" procedure provided in this appendix.
9. Close all doors and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
10. Power up the unit.

You have completed this procedure.

Replacing a Fan

The MAP/100C contains seven fans that provide forced-air cooling for the unit. The four fans located in the rear of the CPU and the two fans located in the peripheral drive bay are serviceable. The seventh fan is located inside the power supply. If you are using a MAP/100C with AC power, the cooling fan is bolted to the end of the power supply and is serviceable. If you are using a MAP/100C with DC power, this fan is located inside the power supply itself and it *not* serviceable. *Never* attempt repairs on this fan.

Removing a Fan

Use the following procedure to remove a cooling fan from the MAP/100C:

1. Locate the defective fan by using the fan indicator lamps on the user interface panel on the front of the unit and by observation.
2. Turn off both the front panel power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections as well.
3. Loosen the two captive screws on the chassis CPU fan panel or the drive bay rear access door and open the appropriate door by letting it "fall" toward you (Figure B-3).
4. Locate the fan to be removed. The fans in the CPU chassis are numbered to correspond to the indicator lights on the front user-interface panel.



NOTE:

There is only one indicator light on the user-interface panel representing the drive bay fans, so use care when determining which fan in the drive bay rear access is the defective one.

5. Disconnect the wires from the screw terminal. On the CPU chassis fans, these wires are black and red. On the drive bay fans, these wires are yellow, black, and red.
6. Remove the four nuts that secure the fan to the door. Set the nuts aside for future use.
7. Remove the wire finger guard that is on top of the fan.
8. Pull the fan out.

You have completed this procedure.

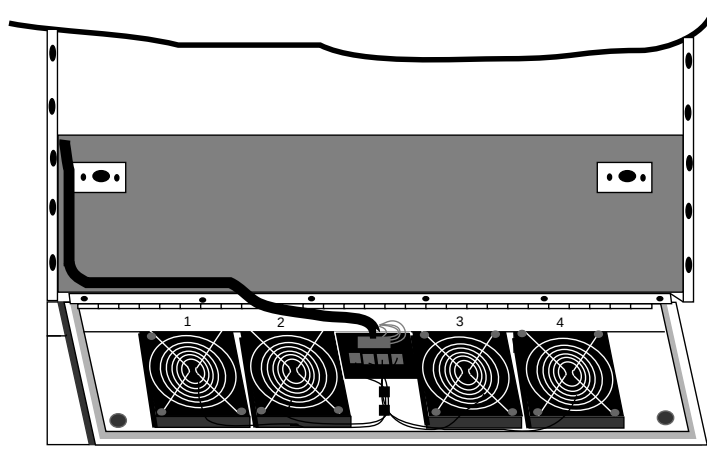


Figure B-3. CPU Chassis Fan Panel

Installing a Fan

1. Position the fan in the area from which the defective fan was removed.
2. Replace the black and red connectorized wires by attaching the red lead to the "+" terminal and the black lead to the "-" terminal. On the drive bay fans, connect the yellow lead to the "0" terminal.
3. Replace the wire finger guard on top of the fan.
4. Secure the fan and the wire finger guard to the fan panel with the four black nuts saved from removing the defective fan.
5. Close the door and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
6. Power up the unit.

You have completed this procedure.

Replacing Fan Filters

The MAP100/C is equipped with three (3) fan filters; one located behind the power supply filter access door, a second on the fan access panel, and a third on the drive bay door. Cleaning the fan filters should be a part of routine maintenance. The filters may be cleaned with warm water, blown dry, and replaced. New filters are also available.

Removing Fan Filters

Remove the filters by releasing the captive screws, opening the appropriate door, and removing the filter.

Installing Fan Filters

To replace the filter, position it behind the door, close the door, and tighten the two captive screws which secure the door to the unit.

Replacing the User-Interface Panel

The following procedures detail removing and installing the user-interface panel in the MAP/100C.

Removing the User-Interface Panel

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the 1/4-turn latch on the CPU chassis front door and open the door by using the slide latches located on the left side of the door.
3. Establish the ESD ground at this time. Use the connector provided on the front of the user-interface panel labeled "ESD Ground" or the ground lug located inside the CPU chassis on the right side near the floor of the chassis.
4. Disconnect the cabling from all full-length circuit cards.
5. Remove all full-length circuit cards from the backplane.
6. Remove the access panels on the floor of the CPU chassis.
7. Remove the six screws across the front of the card guide panel that secure it to the CPU chassis.
8. Remove the two screws that secure the floppy disk drive to the card guide panel.
9. Pull the card guide panel out of the unit.

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10. Remove all cabling on the user-interface panel, noting the positions. The front user-interface panel has seven connectors and the rear user-interface panel has one connector to remove.
 11. Remove the four nuts on the outside of the unit that secure the connectors to the front of the chassis. There are two nuts for the video connector and two nuts for the serial port communication on each of the front and rear user-interface panels.
 12. Remove the eight screws that secure that panel to the CPU chassis floor.
 13. Remove the panel from the unit.

You have completed this procedure.

Installing a User-Interface Panel

1. Locate the panel on the floor of the CPU chassis. Line up the eight screw holes with those on the floor and the video and serial port connectors to the exterior the unit.
2. Install the eight screws to secure the user-interface panel to the CPU chassis floor.
3. Install the four nuts (two for each connector) that secure the video and serial connectors to the outside of the unit.
4. Plug all the connectors in their proper positions on the user-interface panel. Each connector is labeled and corresponds to a number marked on the user-interface panel.
5. Slide the card guide panel into the CPU chassis. Before securing it to the CPU chassis, make sure that the floppy disk drive is aligned properly with the front of the unit.
6. Install the six screws that secure the card guide panel to the CPU chassis.
7. Install the two screws that secure the floppy drive to the CPU chassis.
8. Replace the access panels on the floor of the CPU chassis.
9. Replace all full-length circuit cards using the "Replacing Circuit Cards" procedure provided in this appendix.
10. Close all doors and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
11. Power up the unit.

You have completed this procedure.

Replacing the Front-to-Rear User-Interface Panel Cable Assembly

The following procedures detail removing and installing the front-to-rear user-interface panel cable assembly in the MAP/100C.

Removing the Front-to-Rear User-Interface Cable Assembly

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the 1/4-turn latch on the CPU chassis front door and open the door by using the slide latches located on the left side of the door.
3. Establish the ESD ground at this time. Use the connector provided on the front of the user-interface panel labeled "ESD Ground" or the ground lug located inside the CPU chassis on the right side near the floor of the chassis.
4. Disconnect the cabling from all full-length circuit cards.
5. Remove all full-length circuit cards from the backplane.
6. Remove the access panels on the floor of the CPU chassis.
7. Remove the six screws across the front of the card guide panel that secure it to the CPU chassis.
8. Remove the two slide screws that secure the floppy disk drive to the card guide panel.
9. Pull the card guide panel out of the unit.
10. Release the leftmost cable retainer clip.
11. Unclip enough of the cable ties to release the front-to-rear cable assembly from the unit. (Typically, only two or three need to be clipped).
12. Unplug the cable from its positions on the user-interface cards.

You have completed this procedure.

Installing a Front-to-Rear User-Interface Cable Assembly

1. Lay the old cable next to the new replacement cable. Fold the new cable like the old to allow proper routing and dressing inside the unit.
2. Plug in the connector into the corresponding headers located on the front and rear of the user-interface panel and route the cabling through the cable retainer clip.
3. Secure the cable together to the other cables using the cable ties, if necessary.
4. Clip the cable retaining clip.
5. Slide the card guide panel into the CPU chassis. Before securing it to the CPU chassis, make sure that the floppy disk drive is aligned properly with the front of the unit.
6. Install the six screws that secure the card guide panel to the CPU chassis.
7. Install the two slide screws that secure the floppy drive to the CPU chassis.
8. Replace the access panels on the floor of the CPU chassis.
9. Replace all full-length circuit cards using the "Replacing Circuit Cards" procedure provided in this appendix. Reattach all cabling.
10. Close the CPU chassis front door and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
11. Power up the unit.

You have completed this procedure.

Replacing the CPU-to-Keyboard and Serial Port Cable Assemblies

The following procedures detail removing and installing the CPU-to-keyboard and serial port cable assemblies in the MAP/100C.

Removing the CPU to Keyboard and Serial Port Cable Assemblies

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the 1/4-turn latch on the CPU chassis front door and open the door by using the slide latches located on the left side of the door.
3. Establish the ESD ground at this time. Use the connector provided on the front of the user-interface panel labeled "ESD Ground" or the ground lug located inside the CPU chassis on the right side near the floor of the chassis.
4. Disconnect the cabling from all full-length circuit cards.
5. Remove all full-length circuit cards from the backplane.
6. Remove the access panels on the floor of the CPU chassis.
7. Remove the six screws across the front of the card guide panel that secure it to the CPU chassis.
8. Remove the two slide screws that secure the floppy disk drive to the card guide panel.
9. Pull the card guide panel out of the unit.
10. Unclip the three cable retainer clips on the floor of the CPU chassis. Make a note of how the cable is folded and positioned.
11. Clip the cable ties holding the cable assembly together.
12. Unplug the cable(s) from the user-interface card. The keyboard is labeled P302 and the serial port COM2 is labeled P303.

You have completed this procedure.

Installing a CPU-to-Keyboard and Serial-Port Cable Assemblies

1. Lay the old cable(s) next to the new replacement cable(s). Fold the new cable like the old to allow proper routing and dressing inside the unit.
2. Use cable ties to secure the user-interface cable assemblies together.
3. Plug the connector into the corresponding header located on the front of the user-interface panel.
4. Secure the cables together using the cable ties, if necessary.
5. Route and position the cable through the two cable-retaining clips on the floor of the CPU chassis and the three clips on the side of the unit.
6. Clip all retaining clips.
7. Slide the card guide panel into the CPU chassis. Before securing it to the CPU chassis, make sure that the floppy disk drive is aligned properly with the front of the unit.
8. Install the six screws that secure the card guide panel to the CPU chassis.
9. Install the two screws that secure the floppy drive to the CPU chassis.
10. Replace the access panels on the floor of the CPU chassis.
11. Replace all full-length circuit cards using the "Installing a Circuit Card" procedure provided in this appendix. Reattach all cabling to the circuit cards.
12. Close the CPU chassis front door and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
13. Power up the unit.

You have completed this procedure.

Replacing the Backplane Unit

The following procedures detail removing and installing the backplane in the MAP/100C.

Removing the Backplane Unit

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Remove the door on the CPU chassis.
3. Establish the ESD ground at this time. Use the connector provided on the front of the user-interface panel labeled "ESD Ground" or the ground lug located inside the CPU chassis on the right side near the floor of the chassis.
4. Disconnect cabling from all circuit cards.
5. Remove all circuit cards from the backplane.
6. Remove the 17 screws that secure the backplane to the CPU chassis. There are six screws across the top and bottom of the unit and five across the middle of the unit.
7. Carefully pry the backplane from CPU chassis working from the top of the backplane. The backplane is also held in place by plugs from the power distribution plane, so you will have to be patient when removing the backplane.
8. Remove the backplane from the unit.
You have completed this procedure.

Installing a Backplane Unit

1. Verify all jumper settings are set correctly on the backplane. Compare the settings to the backplane that was removed previously.
2. Position the replacement backplane in the unit, lining up the component with the plugs from the power distribution panel. Make sure the backplane is fully inserted into the unit.
3. Secure the backplane to the CPU chassis using the 17 screws that you removed earlier.
4. Replace all the circuit cards using the "Installing a Circuit Card" procedure provided in this appendix. Reattach all cabling.
5. Replace the CPU chassis front door and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
6. Power up the unit.

You have completed this procedure.

Replacing the Video-to-User-Interface Cable Assembly

The following procedures detail removing and installing the video-to-user-interface cable assembly in the MAP/100C.

Removing the Video-to-User-Interface Cable Assembly

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Open the CPU chassis front door.
3. Detach all cables from the circuit cards and remove all full-length circuit cards from the backplane, plus the cartridge tape and hard disk controller cards.
4. Disconnect the green ground wire on the side of the unit.
5. Remove the card guide and two user-interface access panels.
6. Disconnect the video cable from the user-interface panel.
7. Clip the cable ties that secure the cable to the floor of the unit.
8. Release the cable retainer clips on the side of the unit.
9. From the top of the unit, remove the 16 screws that secure the slot panel to the unit and lift it out.

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10. Remove the cable from the unit.

You have completed this procedure.

Installing a Video to User Interface Cable Assembly

1. Connect the replacement cable to the video connector on the front user-interface panel and route the cable through the cable retainer clips and out the top the unit.
2. Close the cable retainer clips to secure the cable to the side of the unit.
3. Install the slot panel, securing it to the unit the 16 screws removed previously. Make sure the shrink tubing on the cable is located where the cable comes out the access hole in the slot panel.
4. Reconnect the green ground wire to the side of the unit.
5. Install the card guide and the user-interface access panels.
6. Reinstall the circuit cards and attach the appropriate cabling.
7. Close the CPU chassis front door and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
8. Power up the unit.

You have completed this procedure.

Replacing the Slides

The following procedures detail removing and installing the slides on the MAP/100C.



WARNING:

To perform this procedure, you must remove the unit completely from its mounting location. Be sure that all connections are disabled before attempting this procedure.

It is recommended that this procedure NOT be performed alone, as the unit is heavy. Dropping it may cause irreparable damage.

Removing the Slides

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and power connections.
2. Remove all external connections from the unit.
3. Remove the unit from its location in the frame by removing the screws on each side of the front of the unit (3 on each side).
4. Remove the seven flat head screws that secure the side panels to the slides.
5. Extend the slides fully and remove the three screws that secure each of the slides to the unit.

You have completed this procedure.

Installing Slides

1. Extend the slide fully and attach the slides the unit.
2. Secure the side panel to the unit with the seven screws removed previously.
3. Reinstall the unit into the frame using the procedures provided Chapter 1, "Preparing the Site," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108.
4. Establish all connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
5. Power up the unit.

You have completed this procedure.

Replacing the Lever Latches

The following procedures detail removing and installing the lever latches in the MAP/100C.

Removing the Lever Latch

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Remove all cabling from the circuit cards.
3. Remove the 15 screws that secure the top access panel to the chassis.
4. Remove the screw that secures the lever latch to the chassis.
5. You have completed this procedure.

Installing a Lever Latch

1. Insert the replacement latch from the front of the chassis.
 2. Insert the screw into the U-shaped bracket that comes with the lever latch.
 3. Tighten the screw to the lever latch.
 4. Secure the top access panel to the chassis with the 15 screws removed previously.
 5. Release the lever latch and slide the unit out to see how it fits. If it seems to be tight, loosen the jamb nut and adjust the position of the bolt. Do this until the latch engages easily and holds the unit firmly in place.
 6. Tighten the jamb nut so the bolt no longer moves.
 7. Reattach all cabling to the circuit cards.
 8. Establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
 9. Power up the unit.
- You have completed this procedure.

Replacing Circuit Cards

When removing and installing cards, make sure that you follow the rules on card placement as described in Chapter 4, "Running the Configuration Program," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108. Also refer to Appendix D, "Circuit Card Settings" in this book before installing a new circuit card, to determine proper switch and jumper settings.

The following procedures detail removing and installing circuit cards in the MAP/100C.

Removing a Circuit Card

Refer to Figure B-4 while performing this procedure.

1. Turn off both the front panel power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect power connections.
2. Loosen the 1/4-turn latch on the CPU chassis front door and open the door by using the slide latches located on the left side of the door.
3. Establish the ESD ground at this time. Use the connector provided on the front of the user-interface panel labeled "ESD Ground" or the ground lug located inside the CPU chassis on the right side near the floor of the chassis.
4. Remove the circuit card hold down bracket by pulling the spring loaded release out and pulling the bracket toward you and out of the unit. Set it aside.
5. Remove the card's cover plate retaining screw. Save the screw for future use.
6. Disconnect any cables that are attached to the card, noting their placement on the card. If this is an SP or CMP card, refer to "Removing the SP/CMP Cables" procedure provided later in this chapter.
7. Grasp each end of the card and carefully withdraw the card from the unit. A gentle rocking motion will loosen the circuit card from the backplane connector.

You have completed this procedure.

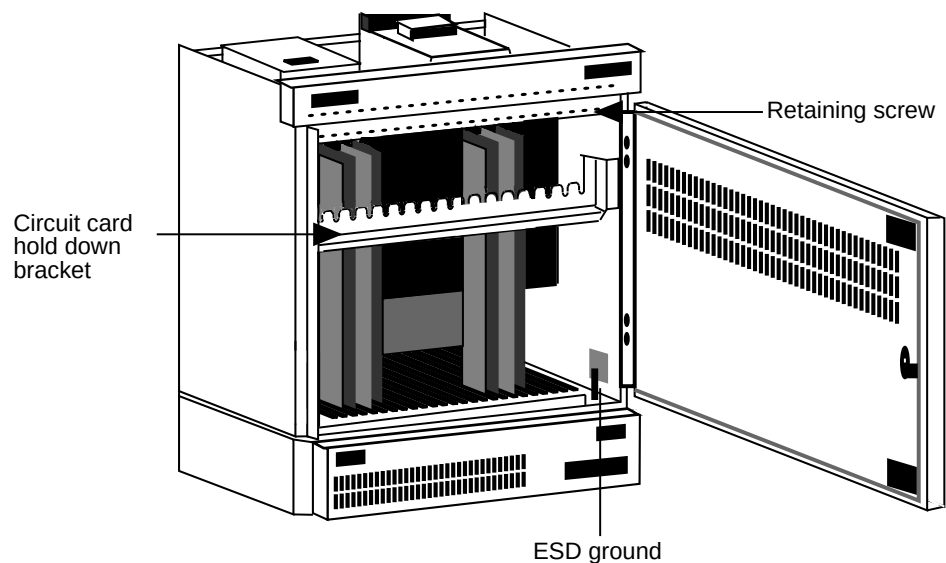


Figure B-4. CPU Chassis — Front View

Removing the SP/CMP Bus Cable

Because of space limitations on the SP and CMP circuit cards, the SP/CMP bus cable arrangement is not designed with ejectors similar to the TDM bus cable (Figure B-5 and Figure B-6). Therefore, great care must be used with removing the SP/CMP connectors from the circuit cards. Use the following procedures to remove the SP/CMP Bus cable from the SP and CMP cards, respectively.

➤ NOTE:

The following procedure assumes that the unit has been powered down using the “Shutting Down the Operating System” procedure provided in Chapter 4, “Common Maintenance Procedures” in this book.

Removing Cables from the CMP Card

1. Insert an index finger into the plastic loop provided with each connector on the CMP card. (See Figure B-7).
2. While holding the card steady with your free hand, pull with uniform force across the width of the loop to remove the connector from the CMP card. This prevents pulling one end loose and damaging the pin headers.

Removing Cables from the SP Card

1. Perform the procedure "Removing Cables from the CMP Card" provided above.
2. Remove the SP card from the system using the general procedure for removing circuit cards provided in earlier in this chapter.



NOTE:

It is much easier to remove the connector from the SP card once the SP card is removed from the backplane.

3. Insert an index finger into the plastic loop (Figure B-7) provided with the SP connector and hold the card steady with your free hand. Pull with uniform force across the width of the loop to remove the connector from the SP card and gently work the connector loose.
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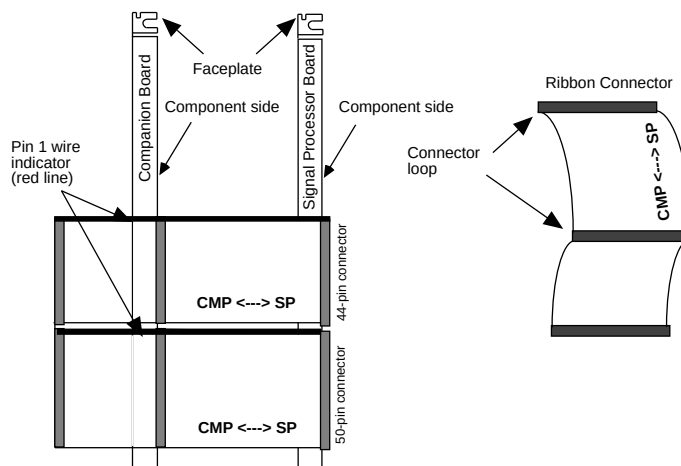


Figure B-5. Top View of SP/CMP Bus Cables

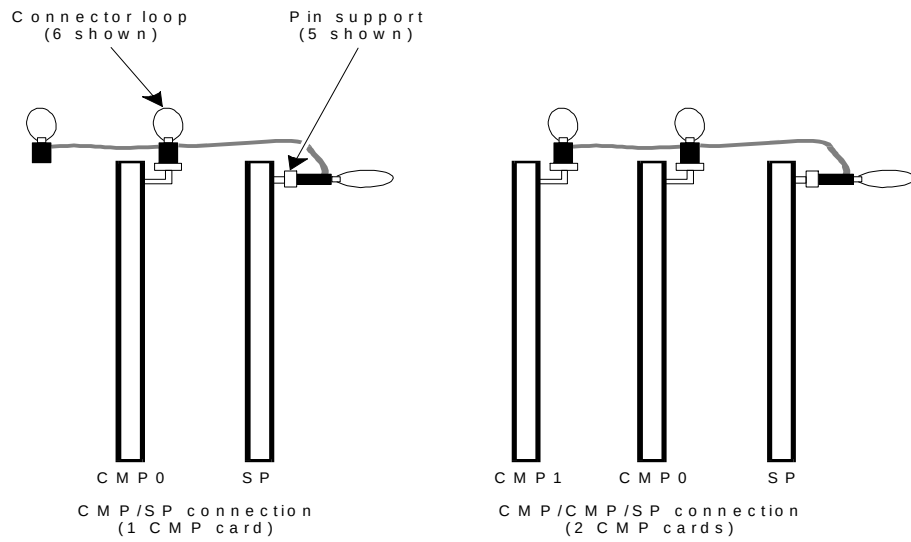


Figure B-6. End View of SP/CMP Bus Cables

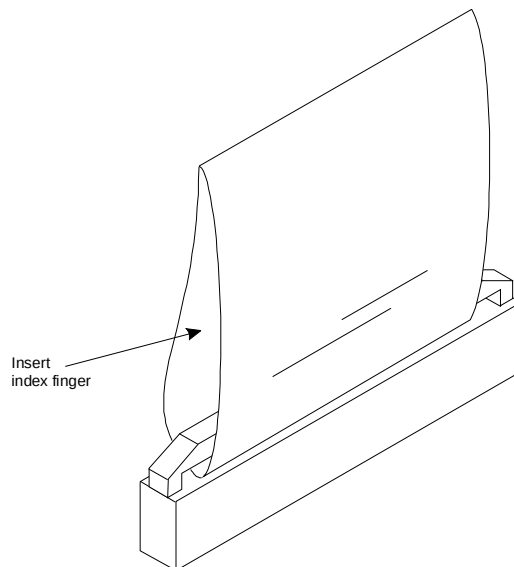


Figure B-7. SP/CMP Connector Loop

Installing a Circuit Card

1. Make sure any switches and/or jumpers are set correctly on the card. Refer to Appendix D, "Circuit Card Settings" for the correct switch and jumper locations and settings.



NOTE:

If this is a new machine, a cover plate and retaining screw is provided for each empty backplane slot. You must remove the circuit card hold-down bracket and the cover plate. Discard this "filler" cover after removal. A new cover plate accompanies each card.

2. Place the card in the slot. Align the card with the card guide and move it away from you until it touches the slot.
3. Grasp the card with both hands and push it into the appropriate back-plane slot. Ensure that the card is firmly seated by gently pushing on it; it will not give when firmly seated.
4. Replace the cover plate retaining screw.
5. Attach any cabling to card.
6. Replace the circuit card hold-down bracket.
7. Close the CPU chassis front door and tighten the 1/4-turn latch. Establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
8. Power up the unit.

You have completed this procedure.

Replacing System Drive Components

This section details the replacement of the system drive components of the MAP/100C. These components include:

- Hard disk drive unit
- Disk power cable assembly
- Hard disk controller and data cables
- Floppy disk drive unit
- Floppy disk drive cable assembly
- Cartridge tape drive unit
- Cartridge tape drive cable assembly

Replacing the Hard Disk Drive Unit

The following procedures detail removing and installing a hard disk drive in the MAP/100C.

Removing the Hard Disk Drive

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Open the front of the peripheral drive bay access door by using the slide latches located on the left and right corners of the door. Pull the door so that it falls forward (Figure B-8).
3. Remove the two screws on the mounting bracket securing the hard disk in the left or the center of the peripheral bay. The first hard disk is typically located in the left slot of the peripheral bay and the second (if present) resides in the center slot of the peripheral bay.
4. Pull the mounting bracket that contains the hard disk drive unit out of the main unit slightly. Remove any cabling attached, noting its placement.
5. Finish removing the hard disk drive unit by pulling the mounting bracket toward you and lifting it out.
6. Loosen the four screws that secure the hard disk to the mounting bracket.
7. Lift the hard disk drive unit out of the mounting bracket.

You have completed this procedure.

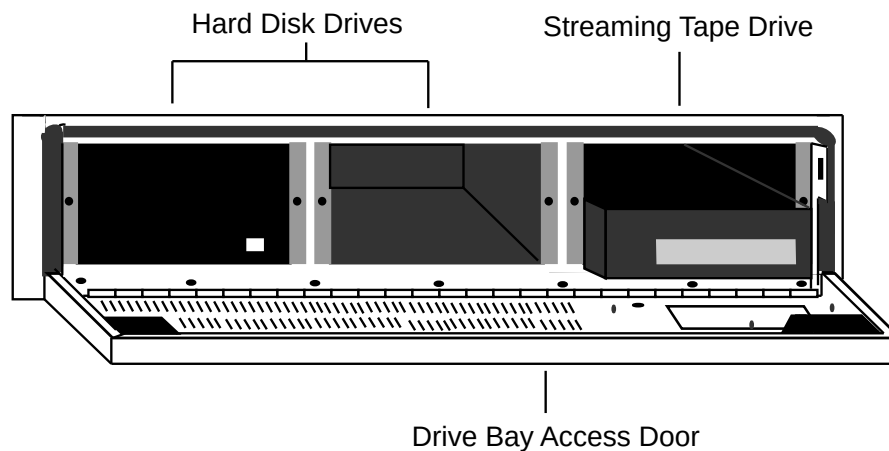


Figure B-8. Peripheral Drive Bay

Installing the SCSI Hard Disk Drive

Refer to Chapter 10, "Adding Additional Hardware," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for the procedure to install and correctly jumper the SCSI hard disk.

Installing the SCSI Hard Disk Drive

1. Prepare the hard disk drive for installation by verifying that all jumpers are correctly positioned as shown in the figure below.
2. Both disks (0 and 1) will have identical jumper settings except for DS1 and DS2. Disk 0 should have the DS1 jumper installed. Disk 1 should have the DS2 installed. Terminating resistors (RN 13 and RN 14) must be installed on Disk 0.
3. Mount the hard disk into the bracket. Secure the hard disk with the four screws provided with the hard drive.
4. Slide the bracket containing the hard disk drive into the center area of the peripheral bay.
5. Fasten the bracket containing the hard disk drive to the unit with the two screws provided with the mounting bracket.
6. Close the peripheral drive bay door.
7. Go to the back of the unit and open the rear peripheral bay access door.

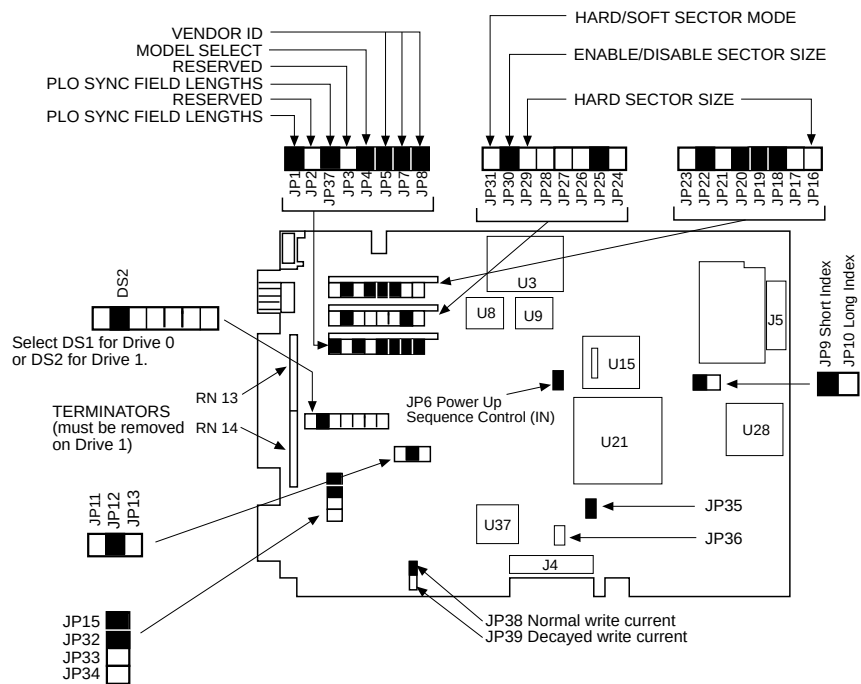


Figure B-9. Jumper Settings for Hard Disk Drive

8. All cabling for the ESDI and SCSI hard disks is provided in every MAP/100C.

For the ESDI hard disk, route the longer cables to Drive 0. Attach the data cable (this connector is daisy-chained to the first hard disk controller cable) to the disk by aligning it with the gold fingers on the disk PC card and pushing it in. All connectors are "keyed" to prevent incorrect installation. Attach the controller cable (the smaller of the two ribbon connectors) to the hard disk drive in the same manner.

For the SCSI hard disk, attach the single cable to the disk by aligning it with the gold fingers on the disk PC card and pushing it in. All connectors are "keyed" to prevent incorrect installation.

9. Attach the power cable to the ESDI or SCSI hard disk in the same manner.
10. "Dress" all ribbon cabling together neatly and affix it to the peripheral bay assembly by adjusting the plastic cable retainer clip that sits on the floor of the peripheral drive bay.

All disk cables are held in place by this retainer clip as shipped from the factory. Pull on the tab at the top of the retainer to release it. Press on the retainer to secure it.

11. Close the rear peripheral drive bay access door and tighten the screws.

**NOTE:**

Perform the following step only if you are adding a new or replacing an existing second hard disk drive. Step 12 is *not* necessary if you are replacing Disk 0.

12. During the power-up process and immediately following the resident diagnostics, the screen will prompt you to press **(ALT) (CONTROL) (ESC)** for setup. Setup is required to tell the system that a second hard disk has been installed. Follow the screen directions to change the setup parameters for the new disk. "Type 47" should be chosen. Save settings and exit setup. The machine will automatically reboot.
13. For ESDI disks, follow the procedure "Low Level Formatting an ESDI Hard Disk Drives" in Chapter 10, "Adding Additional Hardware," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108.

You have completed this procedure.

Replacing the Disk Power Cable Assembly

The following procedures detail removing and installing the disk power cable assembly in the MAP/100C.

Removing the Disk Power Cable Assembly

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Go to the back of the unit and open the rear peripheral bay drive access door.
3. Disconnect all the power cables from the back of the units in the peripheral bay (hard disk drives, cartridge tape, etc).
4. Detach the connectors labeled J2 through J7 from the disk power card located on the door of the peripheral bay.
5. Remove the bad cable assembly from the unit completely.

You have completed this procedure.

Installing a Disk Power Cable Assembly

1. Attach the connectors labeled J2, J3, and J4 to top side of the disk power panel.
2. Attach the connectors labeled J5, J6, and J7 to the bottom of the disk power panel.
3. Remove the blue protective covers from the number of connectors that you need (one connector for each unit in the peripheral bay).

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4. Reconnect the brown ends of the disk power cables with the PD numbers on them to the peripheral bay units.
 5. Dress the cabling back into the peripheral bay so that it allows free movement of the door.
 6. Close the door to the rear peripheral bay access door and tighten the captive screws. Establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
 7. Power up the unit.

You have completed this procedure.

Replacing the ESDI Hard Disk Controller and Data Cables

The following procedures detail removing and installing the ESDI hard disk controller and data cables in the MAP/100C.

Removing the ESDI Hard Disk Controller and Data Cables

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the 1/4-turn latch on the CPU chassis front door and open the door by using the slide latches located on the left side of the door.
3. Establish the ESD ground at this time. Use the connector provided on the front of the user-interface panel labeled "ESD Ground" or the ground lug located inside the CPU chassis on the right side near the floor of the chassis.
4. Disconnect cables from the hard disk controller card.
5. Remove the hard disk controller card from the backplane.
6. Unclip the cable retainer clips located on the side of the CPU chassis to release the data and controller cables.
7. Go to the back of the unit and open the rear CPU fan access door and the rear peripheral bay access door.
8. Remove the access panel on the left side.
9. Make note of the cable routing and location.
10. Unhook the data and controller cable from the hard disk drive and pull the cabling through the access panel and out of the unit. Save the cable to use during the replacement procedure.

You have completed this procedure.

Installing the ESDI Data and Controller Cables

1. Lay the old data and/or controller cable next to the new cable(s). Fold the new cable like the old to allow proper routing and dressing inside the unit.
2. Use cable ties to secure the data and controller cables together.
3. Starting near the access panel, route the cables through the cable retainer clips on the inside of the CPU chassis.
4. Before fastening the clips, make sure that you have enough cable to reach the hard disk controller card. Fasten the clips.
5. Go to the front of the unit and plug the data, control, and the floppy disk control cables to the hard disk controller card.
6. Install the hard disk controller card, using the "Installing a Circuit Card" procedure in this appendix.
7. Route the cabling through the access panel into the peripheral bay.
8. Attach the cables to the hard disk drive unit in the peripheral bay. Make sure all excess cabling is contained in the peripheral bay and allows free movement of the rear peripheral bay access door.
9. Close and secure the peripheral bay access door, rear CPU fan access door, and the front CPU chassis door. Establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP 100/C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
10. Power up the unit.

You have completed this procedure.

Replacing the Floppy Disk Drive

The following procedures detail removing and installing the floppy disk drive in the MAP/100C.

Removing the Floppy Disk Drive

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the 1/4-turn latch on the CPU chassis front door and open the door by using the slide latches located on the left side of the door.

-
3. Establish the ESD ground at this time. Use the connector provided on the front of the user-interface panel labeled "ESD Ground" or the ground lug located inside the CPU chassis on the right side near the floor of the chassis.
 4. Remove the two screws that secure the floppy disk drive to the CPU chassis.



NOTE:

Slide the screws forward with the screw driver so that the floppy drive sticks out slightly from the user-interface panel. You are able to grasp the floppy disk drive more easily.

5. Carefully remove the floppy disk drive by sliding it out the front of the unit.
6. Disconnect the flat ribbon cable and the power cable from the rear of the floppy disk drive, noting their orientation on the card.
7. Remove the four screws that secure the floppy disk drive to its mounting bracket and remove the unit from the bracket.

You have completed this procedure.

Installing the Floppy Disk Drive

1. Secure the floppy disk drive to the mounting bracket with the four screws provided.
2. Connect the flat ribbon cable and power cable to the floppy disk drive.
3. Slide the bracket containing the floppy disk drive into the position on the user-interface panel from which it was removed so it is flush with the user-interface panel.
4. Replace the two screws located inside the CPU chassis that secure the floppy drive to the chassis.
5. Close the CPU chassis front door and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
6. Power up the unit.

You have completed this procedure.

Replacing the Floppy Drive Cable Assembly

The following procedures detail removing and installing the floppy disk drive cable assembly.

Removing the Floppy Drive Cable Assembly

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the 1/4-turn latch on the CPU chassis front door and open the door by using the slide latches located on the left side of the door.
3. Establish the ESD ground at this time. Use the connector provided on the front of the user-interface panel labeled "ESD Ground" or the ground lug located inside the CPU chassis on the right side near the floor of the chassis.
4. Remove the hard disk controller card and disconnect its attached cables, noting their placement on the card.
5. Remove the floppy disk drive using the "Removing the Floppy Disk Drive" procedure provided in this appendix.
6. Disconnect the ribbon and power cables.
7. Go to the rear of the unit and open the rear CPU door. Remove the left user-interface access panel.
8. Unclip the cable retainer clips on the side of the unit and remove the floppy disk drive cable assembly from the unit.

You have completed this procedure.

Installing a Floppy Disk Drive Cable Assembly

1. Lay the old floppy disk drive cable next to the new cable. Fold the new cable like the old to allow proper routing and dressing inside the unit.
2. Starting near the access panel, route the cable through the cable retainer clips on the inside of the CPU chassis.
3. Before fastening the clips make sure that you have enough cable to reach the hard disk controller card. Fasten the clips.
4. Route the cable to floppy drive area and out the front of the floppy drive location.
5. Connect the ribbon and power cables to the rear of the floppy drive, then reinstall the floppy disk drive using the "Installing the Floppy Disk Drive" procedure provided in this appendix.
6. Replace the user-interface access panel, making sure all excess cabling is located beneath the access panel.

-
7. Reinstall the hard disk controller card using the "Installing a Circuit Card" procedure provided in this appendix.
 8. Close and secure the rear CPU fan access door and the front CPU chassis door and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
 9. Power up the unit.

You have completed this procedure.

Replacing the Cartridge Tape Drive

The cartridge tape drive allows you to load, back up, and restore files using a tape cartridge instead of or in addition to floppy disks. The following procedures detail removing and installing the cartridge tape drive in the MAP/100C.



NOTE:

This procedure is similar to the procedure for removing the hard disk drive. Refer to Figure B-8 for additional information.

Removing the Cartridge Tape Drive

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Open the front of the peripheral bay access door by using the slide latches located on the left and right corners of the door. Pull the door so that it falls forward.
3. Remove the two screws on the mounting bracket securing the cartridge tape drive to the right-side position in the peripheral bay.
4. Pull the mounting bracket that contains the cartridge tape drive out of the main unit slightly.
5. Disconnect the flat ribbon cable and the power cable from the rear of the cartridge tape drive.
6. Pull the bracket toward you and lift it out of the unit.

You have completed this procedure.

Installing a Cartridge Tape Drive

1. Mount the cartridge tape drive into the bracket. Secure the cartridge tape drive with the four screws provided.
2. Slide the bracket containing the cartridge tape drive into the right area of the peripheral bay.
3. Connect the flat ribbon cable and the power cable to the rear of the cartridge tape drive.
4. Fasten the bracket containing the cartridge tape drive to the peripheral drive bay with the two screws provided with the mounting bracket.
5. Close the peripheral drive bay door and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
6. Power up the unit.

You have completed this procedure.

Replacing the Cartridge Tape Drive Cable Assembly

The following procedures detail removing and installing the cartridge tape drive cable assembly in the MAP/100C.

Removing the Cartridge Tape Drive Cable Assembly

1. Turn off both the front power switch and the circuit breaker on the back of the unit. Turn off all external devices and disconnect all power connections.
2. Loosen the 1/4-turn latch on the CPU chassis front door and open the door by using the slide latches located on the left side of the door.
3. Establish the ESD ground at this time. Use the connector provided on the front of the user-interface panel labeled "ESD Ground" or the ground lug located inside the CPU chassis on the right side near the floor of the chassis.
4. Disconnect cables from the hard disk controller card and the cartridge tape controller card and remove both cards from the backplane.
5. Unclip the cable retainer clips located on the side of the CPU chassis to release the cartridge tape controller cable (the widest ribbon cable).
6. Go to the back of the unit and open the rear CPU fan access door and the rear peripheral bay access door.
7. Remove the access panel on the left side.

-
8. Make note of the cable routing and location.
 9. Unhook the ribbon cable from the cartridge tape unit and pull the cabling through the access panel and out of the unit. Save the cable to use during the replacement procedure.

You have completed this procedure.

Installing the Cartridge Tape Cable Assembly

1. Lay the old cable next to the new cable. Fold the new cable like the old to allow proper routing and dressing inside the unit.
2. Starting near the access panel, route the cables through the cable retainer clips on the inside of the CPU chassis.
3. Before fastening the clips make sure that you have enough cable to reach the cartridge tape controller card. Fasten the clips.
4. Go to the front of the unit and connect the ribbon cable to the tape controller card and install the card.
5. Connect the data, controller, and the floppy disk controller cables to the hard disk controller card and install the card.



NOTE:

You must install the hard disk controller card after the cartridge tape controller card.

6. Install the hard disk controller card and cartridge tape controller card, using the procedure under "Installing a Circuit Card" provided in this appendix.
7. Route the cabling through the access panel into the peripheral bay.
8. Attach cable to the cartridge tape unit in the peripheral bay. Make sure all excess cabling is contained in the peripheral bay and allows free movement of the rear peripheral bay access door.
9. Close and secure the peripheral bay access door, rear CPU fan access door, and the front CPU chassis door and establish power connections. Refer to Chapter 3, "Connecting Peripherals and Powering Up," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, for specifics on establishing power connections.
10. Power up the unit.

You have completed this procedure.

MAP/40 Hardware Replacement

C

What's in This Appendix

Field replacement procedures for hardware items associated with the Multi-Application Platform 40 (MAP/40) are described in this appendix. These procedures should be performed only by a qualified field service representative. The replacement procedures for the MAP/40 involve two parts: removing the component and installing the component. The installation procedure assumes that the component has already been removed from the MAP/40. Many of the component replacement procedures in this chapter require the system to be shut down completely. The system administrator should always be notified before starting any component-replacement procedure. Preventive maintenance of the MAP/40 is limited to cleaning, visual inspection, and signal verification by way of on-board system diagnostics.

Each service description contained in this section will have an Order Number in parenthesis following the first occurrence of the name of the component being replaced. This may help in component identification.

Figure C-1 details the front of the MAP/40, including peripheral bay positions and front control panel components. Figure C-2 shows the general hardware layout of the replaceable components within the MAP/40. Figure C-3 gives a detailed schematic of the MAP/40 internal electrical connectivity.

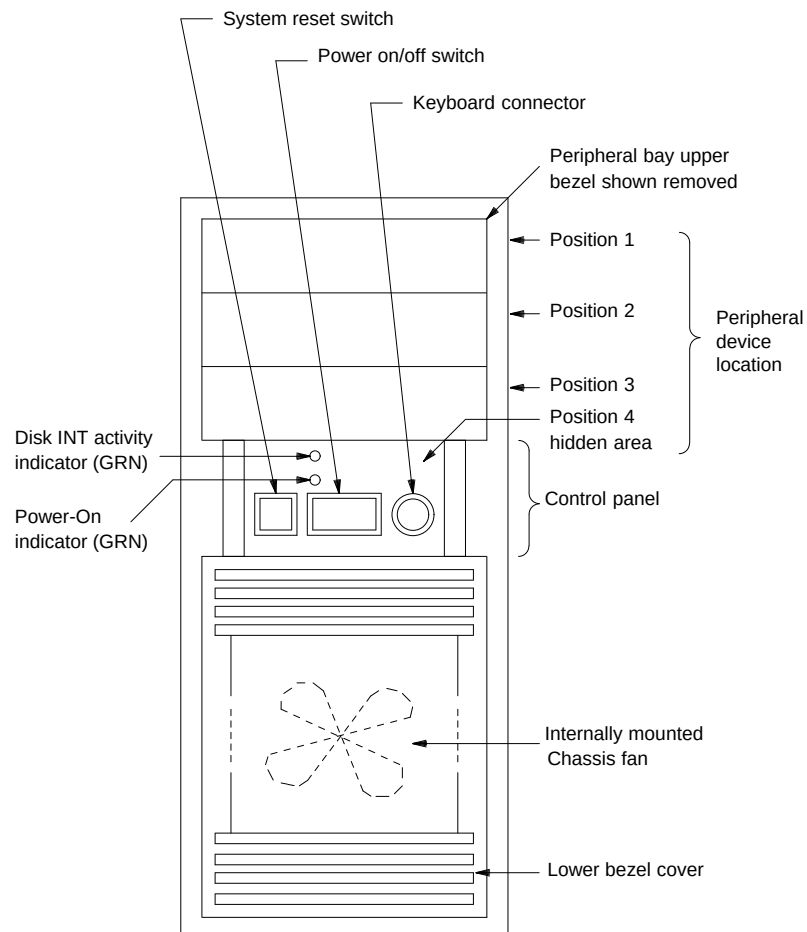


Figure C-1. MAP/40 Frontal View

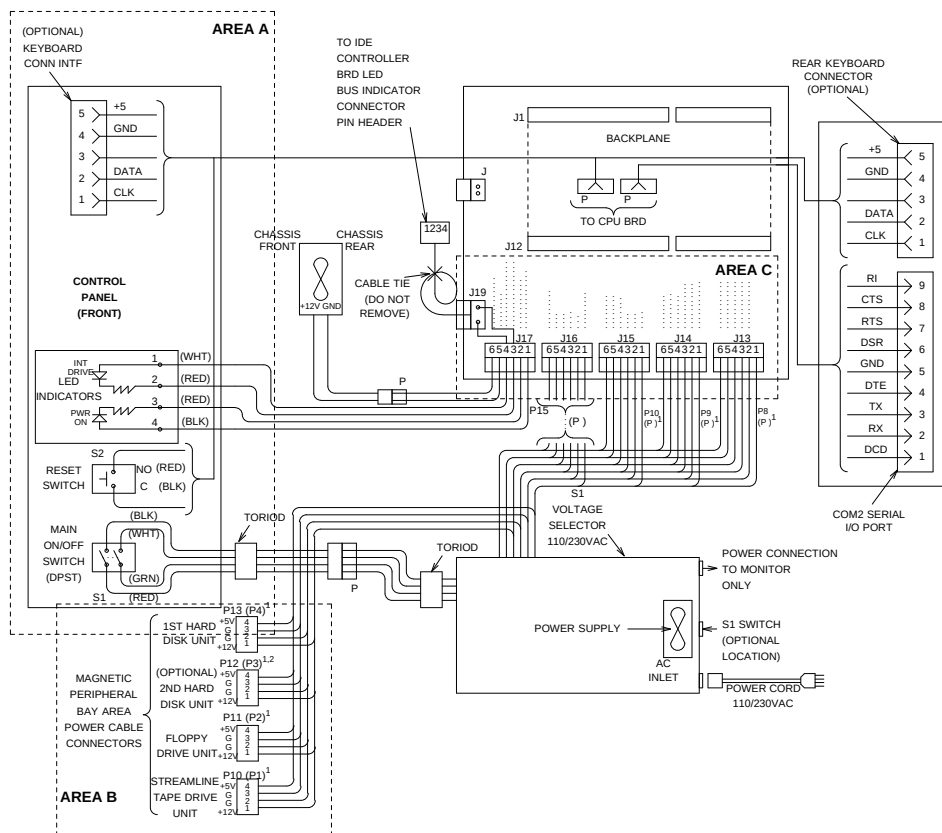


Figure C-3. MAP/40 Internal Wiring

Prerequisites for Hardware Replacements

Before performing any of the procedures in this appendix, note the following precautions:



WARNING:

Establish Electrostatic Discharge (ESD) grounding. Refer to Chapter 2, "Getting Started", of MAP/40 Hardware Installation, 585-350-109, for additional information.



WARNING:

Do not power up the MAP/40 for an extended period of time with the circuit card cage access panel removed. This panel directs cooling fan exhaust through the card cage and cools the boards. Extended operation of the MAP/40 without this cover in place can result in overheating and permanent damage of the boards.

In order to perform most replacement procedures described in this chapter, the dress cover, circuit card cage access panel, and circuit card retaining bracket must be removed. These procedures described below, and are referenced when needed to prevent redundancy.

Removing the Dress Cover

Use the following procedures along with Figure C-4 to remove the dress cover.

1. In a tower configuration, keep the MAP/40 in an upright, vertical position on the support base.
2. Locate two screws on the bottom leftside and rightside corners of the chassis cover.
3. Remove the two screws on both the right and left side of the chassis.
4. Place one hand on each side of the chassis, palm down towards the top edge.
5. Press inward slightly with the palms of the hands on both sides of the chassis and lift up.
6. Be aware that as more of the dress cover is removed, it may begin to collapse inward from the pressure of your hands. Move your hands downward on the dress cover to accommodate this as you lift.
7. Remove the dress cover.

You have completed this procedure.

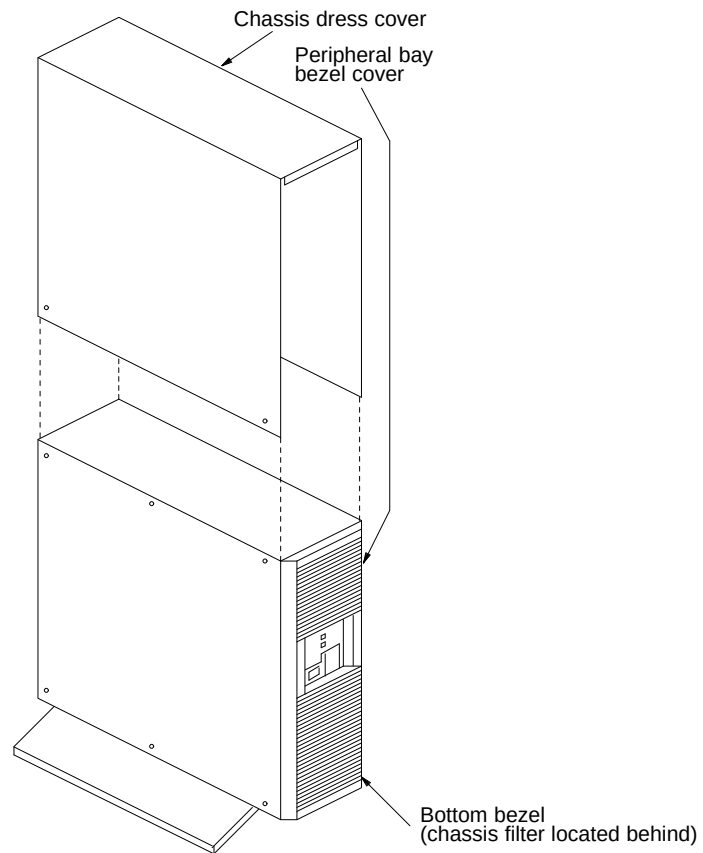


Figure C-4. Removing the Dress Cover

Removing the Circuit Card Cage Access Panel and Retaining Bracket

Use the following procedures along with Figure C-5, Figure C-6, and Figure C-7 to remove the circuit card access panel and retaining bracket.

1. Place the MAP/40 on its side to more easily work within the chassis. Use one of the following methods:
 - a. If at all possible, disconnect the incoming lines/trunks, and place the MAP/40 on its side on a work table with the support base over the table edge as shown in Figure C-5.
 - b. If you cannot disconnect incoming lines/trunks to the MAP/40, place the MAP/40 on its side and rest the end opposite the support base on large telephone books or similar objects as shown in Figure C-6.
2. Rotate the MAP/40 until the left side faces you.
3. Loosen the flat-head 1/4 inch length screws by *two turns only*.

It is not necessary to remove these screws, they only need to be loosened to provide adequate clearance.
4. Apply pressure gently with your hands, palms down on the access cover.
5. Push into the chassis with your palms and slide the access cover back toward the chassis area.
6. Lift up and remove the cover once it has cleared the screws.
7. Some repairs require that the circuit card retaining bracket be removed. To do so, locate and remove two Phillips head screws that fasten the bracket to the chassis, and remove. This bracket is illustrated in Figure C-7.

You have completed this procedure.

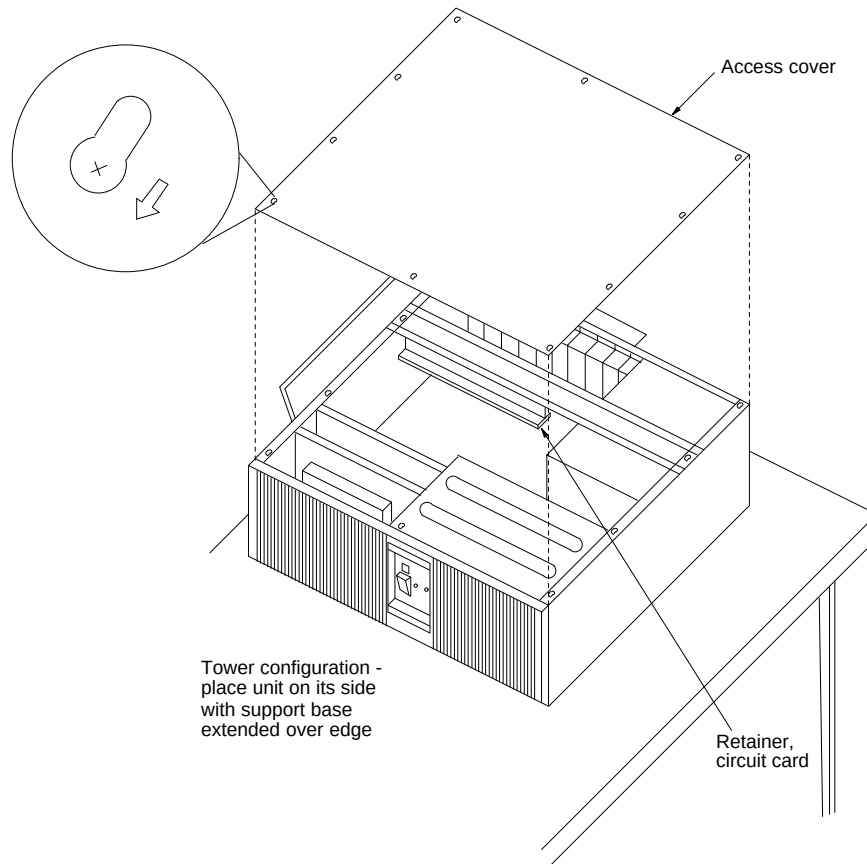


Figure C-5. Removing the Access Cover

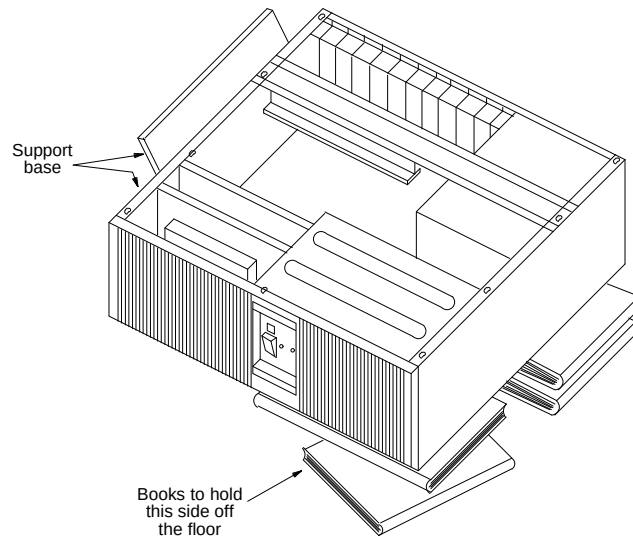


Figure C-6. Supporting the MAP/40

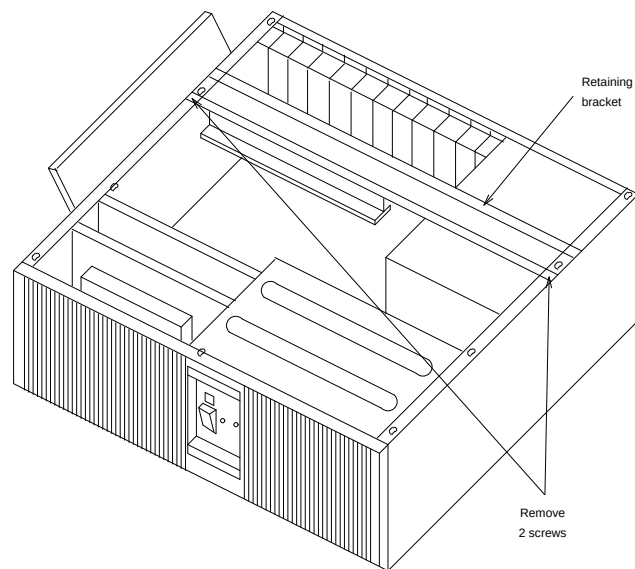


Figure C-7. Circuit Card Retaining Bracket

Replacing the Fan Filter

The MAP/40 is equipped with a fan filter (406900050) designed to remove dust and debris from the air before it circulates inside the chassis. The filter is located behind the bottom bezel, as shown in Figure C-2. Cleaning the filter should be a part of routine maintenance. The filter may be cleaned with warm water, blown dry, and replaced. A packet of five new filters are available if the current one becomes exceptionally dirty or damaged.

Removing the Fan Filter

The filter can be removed by detaching the bottom bezel and pulling the filter from inside the bezel.

Installing the Fan Filter

Place a new fan filter inside the bottom bezel and snap back into place.

Replacing the Card Cage Fan Unit

The MAP/40 contains two fans that provide forced-air cooling inside the unit. The first fan (406900126) is located in front of the card cage, behind the front cover panel. It is mounted on a support plate to force airflow through the MAP/40 chassis, across the circuit cards as illustrated in Figure C-2.

The second fan is located inside the power supply unit and is *not* serviceable. Repairs should *never* be attempted. If this fan fails, the entire power supply should be replaced according to the procedures noted in "Replacing the Power Supply Unit".

Removing the Card Cage Fan Unit

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Perform "Shutting Down the Operating System", in Chapter 4, "Common Maintenance Procedures" in this book, if the MAP/40 has been operating as a fully loaded system.
3. The MAP/40 Platform provides two different types of connection to the telephone company's Central Office (CO); analog and digital. If the MAP platform undergoing maintenance is connected to the CO over digital (T1 or E1) lines, notify the telephone company that the system is being disconnected from the network. They will ask which extensions are affected.

**CAUTION:**

If the system is shut down and removed from digital (T1 or E1) connections on a continuing basis without notifying the telephone company, the company can permanently disconnect your system from the network.

4. Turn off the front panel power switch and remove the incoming AC power cord. Also disconnect keyboard and video cords.
5. Tag the power cord plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.
6. Remove the four Phillips head screws on the right and left side of the chassis and remove the external dress cover as shown at the beginning of this chapter. Be careful not to lose the screws which secure the dress cover to the MAP/40.
7. Place the MAP/40 on its side to more easily work within the chassis. Use one of the following methods:
 - a. If at all possible, disconnect the incoming lines/trunks, and place the MAP/40 on its side on a work table with the support base over the table edge.
 - b. If you cannot disconnect incoming lines/trunks to the MAP/40, place the MAP/40 on its side and rest the end opposite the support base on large telephone books or similar objects.
8. Remove the circuit card cage access panel, following the instructions shown at the beginning of this chapter.
9. Remove the two Phillips head screws that hold the fan unit in position as shown in Figure C-2.
10. Before removing the mounted card cage fan unit, unplug the 12 VDC power lead connector.
11. Lift the card cage fan unit up and out of the chassis.
12. Inspect the card cage fan housing to locate and note the air-flow or blade rotation indicator. This information will ensure proper mounting of the replacement fan before removing the defective one.

Some suppliers denote air-flow direction with a bold arrow printed somewhere on the housing. Others indicate air flow with a label stating that one side or the other is *EXHAUST*.
13. Remove the four Phillips head machine screws retaining the card cage fan and remove it from the support plate.

You have completed this procedure.

Installing the Card Cage Fan Unit

1. Before replacing the card cage fan, locate and note the air-flow/blade rotation direction indicators to ensure that the fan is properly mounted. Install the new fan to the support plate using the four Phillips head machine screws, with the exhaust air traveling through the mounting plate hole towards the card cage area, as shown in Figure C-2.
 2. Using the supplied nylon cable tie, secure the power harness to the fan assembly the same way as it was to the defective unit.
 3. Mount the card cage fan unit and secure with the two Phillips head screws.
 4. Reattach the 12 VDC connector. The connector is keyed to ensure correct mating.
 5. Replace the circuit card access panel when all connections and mountings are complete.
 6. Power up the unit.
 7. Verify that the replacement fan is operating by removing the bottom bezel and placing a small sheet of paper across the grill. The paper should adhere to the grill from the suction of the fan, if the fan is turning at the proper speed. If the fan is operating, continue to the next step. If it is not operating, or it is spinning very slowly, check all wiring connections and voltages to ensure that the replacement unit is receiving power. Do not leave the MAP/40 powered up for any length of time, or proceed to the next step, without the card cage fan fully operational.
 8. If the system appears to be fully operational, replace the exterior dress cover and reconnect the keyboard, video, network circuits as needed.
- You have completed this procedure.

Replacing a Circuit Card

The MAP/40 contains a number of circuit cards that provide various functions for the system. These cards include video controls, peripheral controls, communication controls, CPU, analog Tip/Ring and digital T1/E1 cards, located in the circuit card cage in backplane slot positions 1 through 12, as shown in Figure C-2. The instructions listed here do not address the procedures involved with *adding* cards, only replacing them. Circuit cards are placed in the backplane in accordance with the MAP/40 System Configuration program. The Configuration Program is run to map each card to an individual backplane slot position. When replacing a card, be sure to re-insert it into the exact slot from which it was removed.

A copy of the Configurator listing, showing the circuit card assignments, should be used to reference circuit cards to the proper backplane slots.

NOTE:

Refer to Chapter 6, "Installing Circuit Cards", of *MAP/40 Voice Processing Hardware Installation*, 585-350-109, if you are *adding* circuit cards to the MAP/40 platform, or need instructions on how to run the Configurator program.

Removing a Circuit Card

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Perform "Shutting Down the Operating System", in Chapter 4, "Common Maintenance Procedures", if the MAP/40 has been operating as a fully loaded system.
3. The VIS MAP/40 Platform provides two different types of connection to the telephone company's Central Office (CO); analog and digital. If the MAP platform undergoing maintenance is connected to the CO over digital (T1 or E1) lines, notify the telephone company that the system is being disconnected from the network. They will ask which extensions are affected.



WARNING:

If the system is shut down and removed from digital (T1/E1) connections on a continuing basis without notifying the telephone company, the company can permanently disconnect your system from the network.

4. Refer to the Configurator Listing for this system to confirm that it is the correct card for that slot.

If the system is already powered down, and the Configurator Listing is not available, use the table below to indicate the card that is being replaced, and make certain to mount the replacement card *in the exact same slot!*

Check the box that corresponds to the backplane slot of the circuit card being replaced.

Table C-1. Circuit Card Replacement Record

Slot	Slot	Slot	Slot	Slot	Slot	Slot	Slot	Slot	Slot	Slot	Slot
1	2	3	4	5	6	7	8	9	10	11	12

5. Turn off the front panel power switch and remove the incoming AC power cord, keyboard, and video cord.
6. Tag the power cord plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.
7. Remove the four Phillips head screws on the right and left side of the chassis and remove the external dress cover as shown at the beginning of this chapter. Be careful not to lose the screws which secure the dress cover.
8. Place the MAP/40 on its side to more easily work within the chassis. Use one of the following methods:
 - a. If at all possible, disconnect the incoming lines/trunks, and place the MAP/40 on its side on a work table with the support base over the table edge.
 - b. If you cannot disconnect incoming lines/trunks to the MAP/40, place the MAP/40 on its side and rest the end opposite the support base on large telephone books or similar objects.
9. Remove the circuit card retaining bracket.
10. Locate the card to be replaced within the card cage. If there are ribbon cables draped over top of the faulty card, disconnect them from their respective board or hardware unit and place to the side, making special notes as to the connectivity of each.
11. Remove the retaining screw from the card's face plate and save it. The backplane connector slots are labeled 1 through 12. Make special note of the backplane slot that the card is being pulled from, marking the slot number and the circuit card code (for example, AYC6) in Table C-1. Make certain to install the replacement card *in the exact position!*

-
12. Pull the circuit card from the backplane slot by gently pulling on each corner of the card and remove it from the MAP/40 chassis.

You have completed this procedure.

Installing a Circuit Card

1. Unpackage the new circuit card from its ESD protective wrapping. Keep the package and all ESD protective wrapping to return the defective unit it. Re-use of the original replacement unit packaging is needed to meet the manufacturers warranty.
2. Verify the circuit card interrupt address (IRA), TDM terminations, set address switches, and jumpers are set to match the old card.
3. Holding the circuit card by its upper corners, slide the card into the backplane connector slot position indicated by the Configurator Listing, or recorded in Table C-1.
4. Secure the circuit card faceplate into position by replacing the Phillips head retaining screw.
5. Replace all ribbon cables that were unplugged to facilitate removal of the faulty card. Make sure these cables are reattached to their proper terminations.
6. Replace the circuit card retaining bracket.
7. Replace the circuit card cage access panel when all connections and mountings are complete.
8. Replace the exterior dress cover and reconnect the keyboard, video, network circuits, and power.
9. Power up the unit.

You have completed this procedure.

Replacing the Floppy Disk Drive

The 1.44 Megabyte (MB), 3.5 inch Floppy Disk Drive (FDD) (406832584) is pre-assembled by the factory with a mounting kit (406832592). The FDD is located in Position 2 of the peripheral bay, as shown in Table C-1. When the FDD is found to be defective, a spare FDD can be ordered and installed. To replace a known defective FDD, the following procedures need to be followed.

Removing the Floppy Disk Drive

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Perform "Shutting Down the Operating System", in Chapter 4, "Common Maintenance Procedures" in this book, if the MAP/40 has been operating as a fully loaded system.
3. The MAP/40 Platform provides two different types of connection to the telephone company's Central Office (CO); analog and digital. If the MAP platform undergoing maintenance is connected to the CO over digital (T1/E1) lines, notify the telephone company that the system is being disconnected from the network. They will ask which extensions are affected.



WARNING:

If the system is shut down and removed from digital (T1/E1) connections on a continuing basis without notifying the telephone company, the company can permanently disconnect your system from the network.

4. Turn off the front panel power switch and remove the incoming AC power cord, keyboard, and video cord.
5. Tag the power cord plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.
6. Remove the four Phillips head screws on the right and left side of the chassis and remove the external dress cover as shown at the beginning of this chapter. Be careful not to lose the screws which secure the dress cover to the MAP/40.
7. Place the MAP/40 on its side to more easily work within the chassis. Use one of the following methods:
 - a. If at all possible, disconnect the incoming lines/trunks, and place the MAP/40 on its side on a work table with the support base over the table edge.
 - b. If you cannot disconnect incoming lines/trunks to the MAP/40, place the MAP/40 on its side and rest the end opposite the support base on large telephone books or similar objects.

-
8. Remove the circuit card cage access panel, following the instructions shown at the beginning of this chapter.
 9. Remove the top front bezel cover by pressing up on the center tab at the bottom of the bezel cover.
 10. Locate the internal FDD power cord and bus cable assembly connections, gently removing the power cord connector (P11) and bus cable assembly (ED5P208-30 Group 23) connections from the back of the FDD Unit. Move them carefully to the side.
 11. Locate the two 3 millimeter Phillips head screws on each side of the peripheral bay chassis. Holding the rear of the FDD Unit, begin to loosen and remove the FDD mounting screws. Keep these four screws separate from any others that are removed. These screws are metric and will only fit these holes. Using any other screws will damage the threads in the FDD mounting hardware.
 12. Slide the FDD forward within the peripheral bay and remove through the front opening of the MAP/40 chassis.

**CAUTION:**

The FDD assembly must be handled with care that force or strain is not placed upon the spindle motor, stepping motor, and printed circuit board. ESD precautions should also be taken, and because of this, the surface of the FDD printed circuit board should not be touched.

13. Place the FDD assembly on a work bench equipped with an ESD protection pad and carefully remove the PCBA 5" Adapter board illustrated in Figure C-8, making sure not to bend or twist the connector pins. Remove the mini power cord unless already removed in an earlier step.

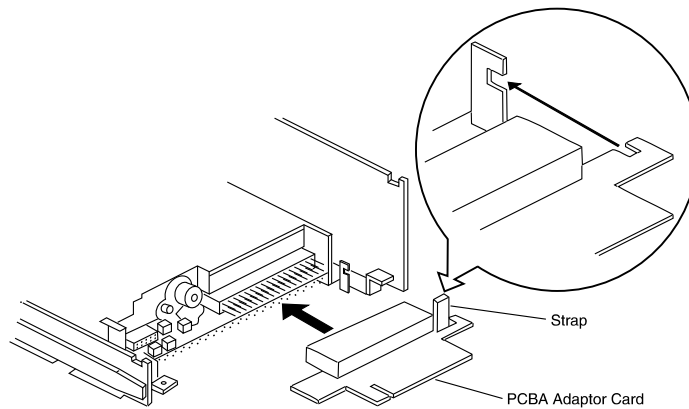


Figure C-8. Floppy Disk Drive Unit PCBA 5 Inch Adapter Card

14. Remove the four 3 millimeter Phillips head screws that secure the drive unit (FD-235) to the 5.25" FDD hardware mounting kit. These screws are identified as item(s) #8 in Figure C-9.
15. After the screws are removed, slide the drive unit back to clear the front bezel shown as Item 2 in Figure C-9. Upon removal, place the FDD upside-down with the printed circuit board facing up on an ESD-protected surface.

You have completed this procedure.

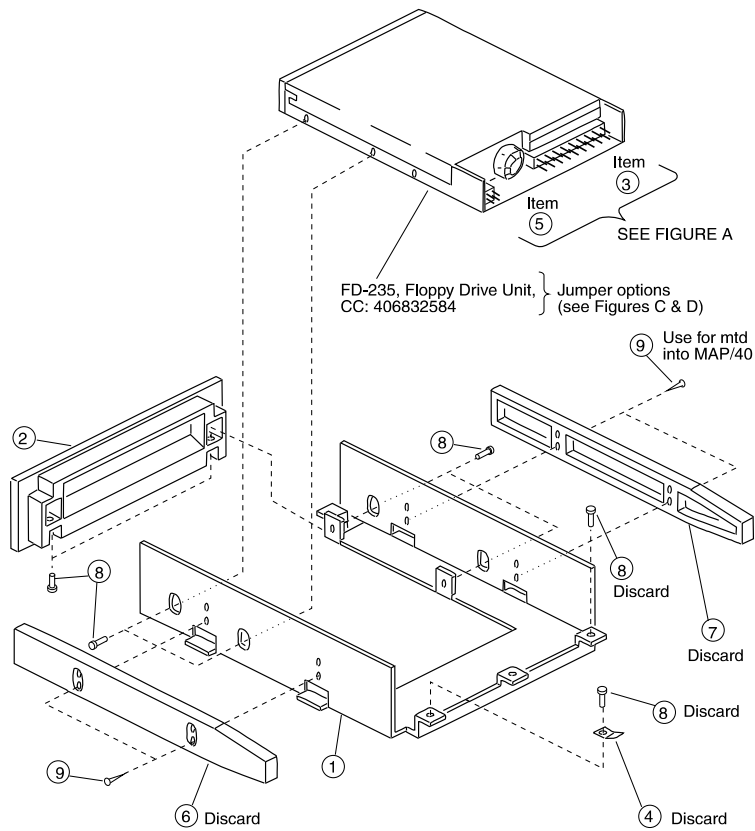


Figure C-9. Floppy Disk Drive Assembly

Installing a Floppy Disk Drive

1. Unpackage the new FDD unit (406832584) from its ESD protective wrapping. Keep the package and all ESD protective wrapping to return the defective unit. Re-use of the original replacement unit packaging is needed to meet the manufacturer's warranty.
2. Before assembling the new FDD unit, verify the jumper connection settings. The FDD unit assembly for the MAP platforms is produced in three versions:
 - FD-235-201
 - FD-235-3201
 - FD-235-4429

All three models are pre-set by the manufacturer. Verify the replacement FDD against Figure C-10 and Figure C-11 to determine that all of the jumper connections are properly made as shown by the diagrams.

3. Hold the new FDD by the metal sides and carefully re-assemble it into the 5.25" mounting hardware and bezel. Resecure the FDD using the four 3 millimeter Phillips head screws removed in Step 14 of "Removing The Floppy Disk Drive Unit". Re-assemble the PCBA adapter board, being careful to realign the tabs shown in Figure C-8.
4. Mount the new FDD unit into the MAP/40 peripheral bay. Ensure the front bezel is flush with the others of uniformity. Secure to the peripheral bay with the four 3 millimeter Phillips head screws removed in Step 11 of "Removing The Floppy Disk Drive Unit".
5. Reattach the FDD cable assembly to the PCBA adapter board, paying special attention that the red bus cable No. 1 conductor tracer indicator is towards the *bottom* of the peripheral bay. Both the PCBA board and the FDD cable assembly are keyed to prevent improper connection.
6. Reattach the mini power cable assembly that is provided with the system power supply wiring. When making the power cable connection, twist the cable three times in a *clockwise* fashion before plugging the connector into the FDD. This will neatly dress the cable toward the bottom of the MAP/40 chassis. Tuck all wiring neatly back into its original placement, paying special attention not to pinch sections of cable when reassembling the unit.
7. Replace the circuit card cage access panel when all connections and mountings are complete.
8. Replace the exterior dress cover and reconnect the keyboard, video, network circuits, and power.
9. Power up the unit.

You have completed this procedure.

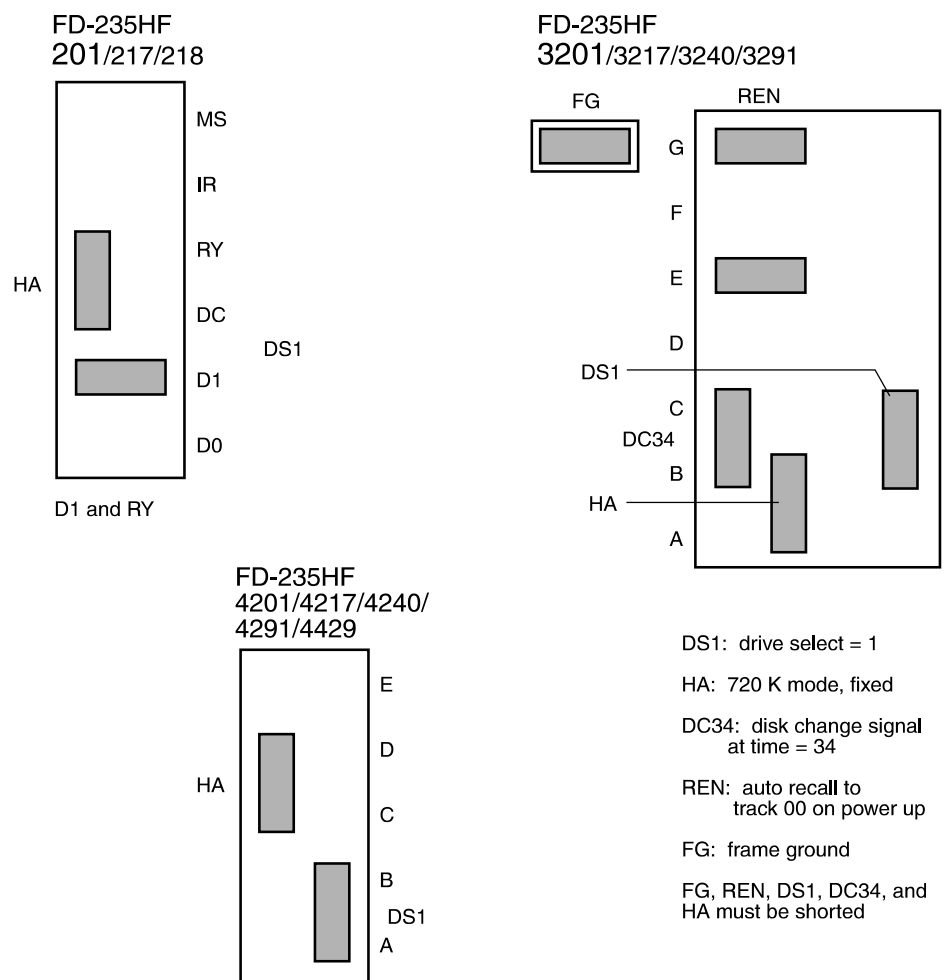


Figure C-10. Floppy Disk Drive Jumper Connections (201, 3201, 4429)

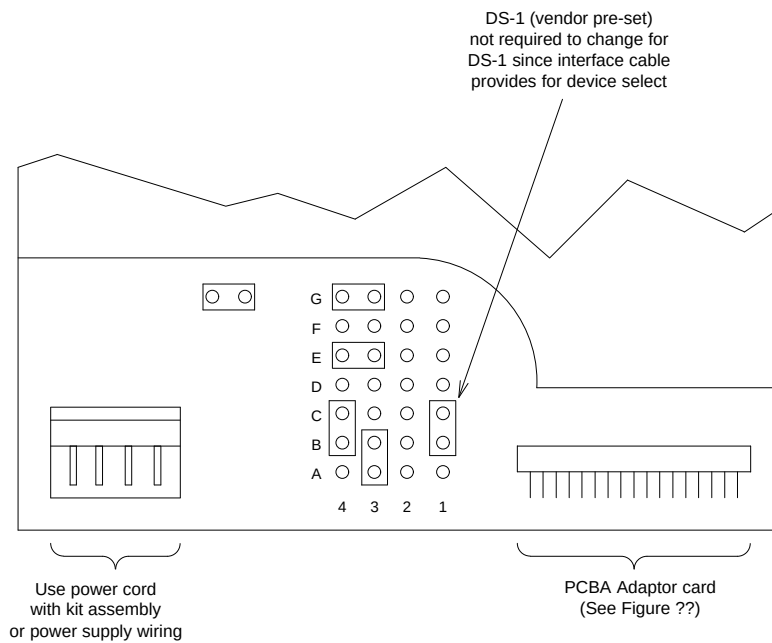


Figure C-11. Floppy Disk Drive Jumper Layout (3201, 4429)

Replacing the Power Supply

The 110/220 VAC power supply unit (406900027) is located in the upper right corner of the MAP/40 as shown in Figure C-2 and Figure C-12. The replacement power supply unit is provided with two cable adhesive mounts and six nylon cable ties. Before beginning these procedures, make certain that the replacement unit is on site and available for installation.

The power supply unit, along with all associated wiring and cable mounts, is depicted in Figure C-12 and Figure C-13.

Removing the Power Supply

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Perform "Shutting Down the Operating System", in Chapter 4, "Common Maintenance Procedures" in this book, if the MAP/40 has been operating as a fully loaded system.
3. The VIS MAP/40 Platform provides two different types of connection to the telephone company's Central Office (CO); analog and digital. If the MAP platform undergoing maintenance is connected to the CO over digital (T1/E1) lines, notify the telephone company that the system is being disconnected from the network. They will ask which extensions are affected.



WARNING:

If the system is shut down and removed from digital (T1/E1) connections on a continuing basis without notifying the telephone company, the company can permanently disconnect your system from the network.

4. Turn off the front panel power switch and remove the incoming AC power cord, keyboard, and video cord.
5. Tag the power cord plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.
Tag all network cables to ensure proper reconnection.
6. Remove the four Phillips head screws on the right and left side of the chassis and remove the external dress cover as shown at the beginning of this chapter. Be careful not to lose the screws which secure the dress cover.
7. Place the MAP/40 on its side on a work table with the support base over the table edge.
8. Remove the circuit card cage access panel, following the instructions shown at the beginning of this chapter.

9. Remove the circuit card retaining bracket.
10. Carefully unplug all power connectors and bus cable assemblies to the peripheral bay devices.

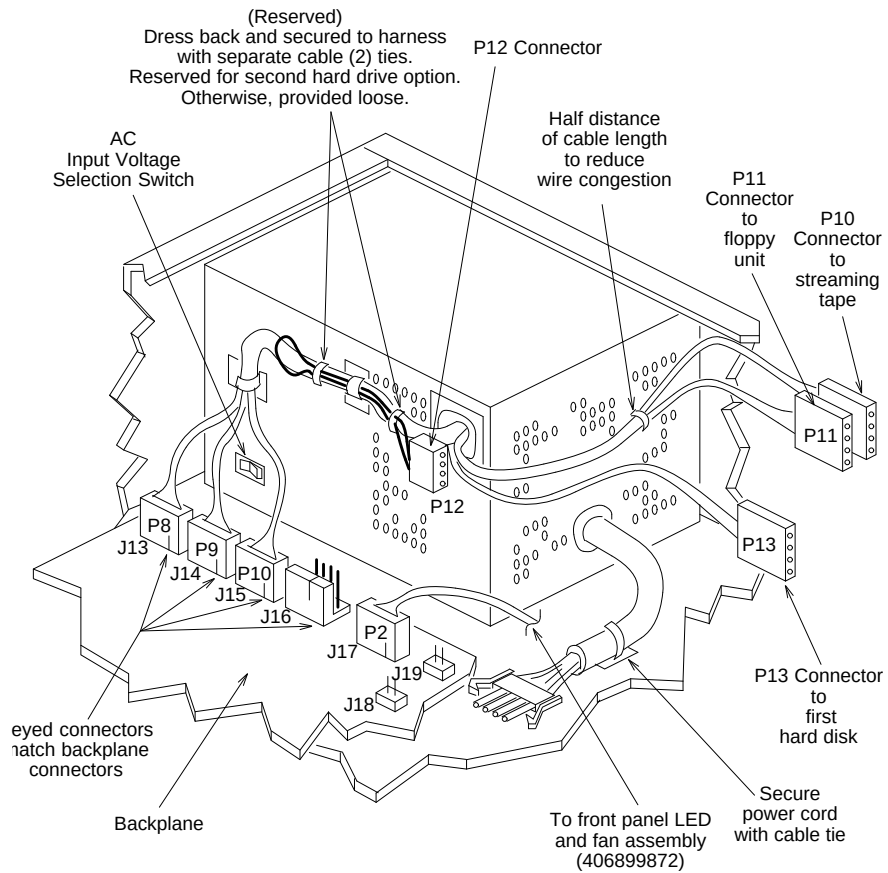


Figure C-12. MAP/40 Power Supply Unit (comcode 406900027)

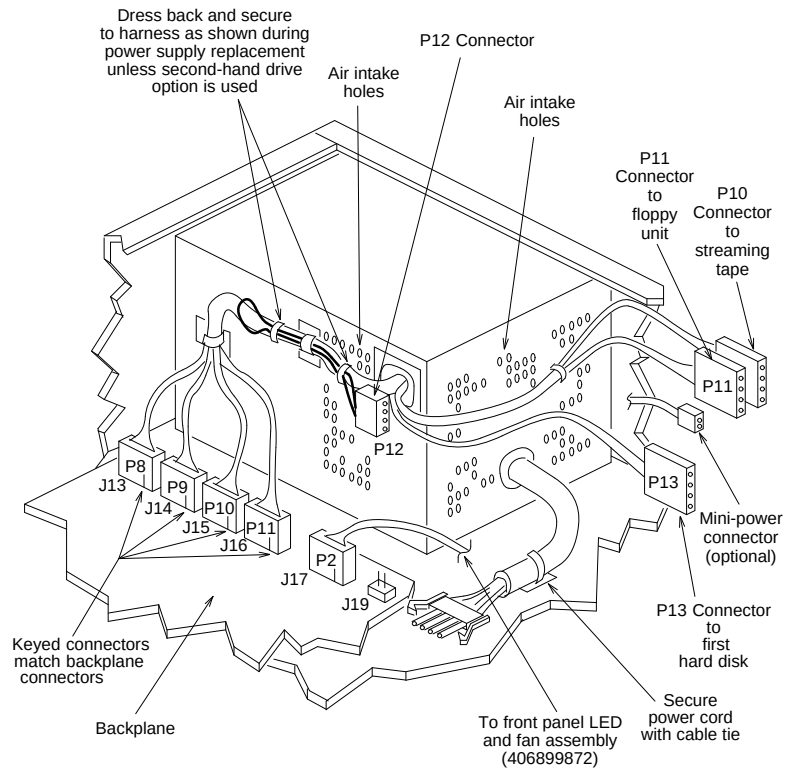


Figure C-13. MAP/40 Power Supply Unit (comcode 406962654)

11. Remove the circuit cards in slots 11 and 12, along with the bus cable assemblies to the peripheral devices, in order to provide adequate clearance to access the backplane power supply connectors P8, P9, and P10. The connectors are each keyed differently from the others and will simplify re-assembly.



NOTE:

Depending on the particular configuration of the MAP/40 being serviced, more bus assemblies may need to be removed. The assemblies described in Step 10 and Step 11 represent the minimum system configuration.

-
12. Using a small pair of wire snips, cut the cable tie that secures the power supply output cable, mounted behind the supply, to the chassis base. Disassemble the output power cord connector by squeezing the connector side latches and carefully sliding apart.
 13. Locate four Phillips head screws on the chassis rear area that secure the power supply unit. Slightly slide the unit forward towards the peripheral bay and tilt towards the backplane so that the power supply can be lifted and removed. Remove the spare power supply unit from the shipping carton. Retain this carton to ensure meeting the manufacturers warranty for returning the defective supply.

You have completed this procedure.

Installing the Power Supply

1. Before re-assembling the new power supply unit, the input AC voltage selection switch, located on the chassis side, close to the button edge, needs to be verified or set identical to the defective unit.

The switch is a slide type. Printed text on the surface, visible after selection, indicates the input voltage requirements, either 110 or 220 volts.
2. Before re-assembling the new power supply unit, if connector P12 is *not* required for the second Hard Disk, its lead should be routed back across the main power supply wiring leads that interface the backplane. This should help reduce cable congestion in the peripheral bay area.
3. Install the power supply unit back into the card cage, in the reverse mode as settings. The FDD unit assembly for the MAP platforms is produced in three Phillips head mounting screws originally removed in Step 13 of "Removing a Power Supply".
4. Attach the power supply DC output connectors P8, P9 and P10 to the backplane connectors. The backplane connectors (J13, J14 and J15) and power supply DC output lead connector have matching keyed connectors, providing an error free assembly.
5. Attach the remaining power supply DC output connector leads to the associated peripheral devices, as follows:
 - P10 Connector into the cartridge tape drive
 - P11 Connector into the floppy disk drive
 - P12 Connector into the second hard disk drive, if provided. If a second hard disk drive is not available, this lead should be dressed back out of the way to reduce cable congestion as previously outlined.
 - P13 Connector to the first hard disk drive.
6. Reconnect the power supply internal AC cord and secure with a nylon cable tie provided with the replacement unit.

-
7. Re-install the circuit cards into slots 11 and 12, along with the peripheral device bus cable assemblies. Re-install the circuit card faceplate retaining screw(s).

Reconnect the LED INT cable assembly located inside the chassis to the four pin header located on the IDE card, as shown in Figure C-14.

8. Reconnect the power cord and power up the unit.
9. Verify the replacement power supply unit is functioning properly by observing the backplane +5V, -5V +12V and -12V visual LED indicators are lit, and the internal fan is operating. If one or more of these voltage indicators are not lit, further diagnostics are required to determine the problem. If all LEDs are lit, also verify that the peripheral bay devices are functioning properly before proceeding to the next step.
10. If the system appears to be fully operational, perform a "soft" shutdown of the operating system and disconnect the keyboard, video, and power cord.
11. Replace the circuit card retaining bracket, circuit card cage access panel and dress cover.
12. Reconnect the keyboard, video, network circuits, and power.
13. Power up the unit.

You have completed this procedure.

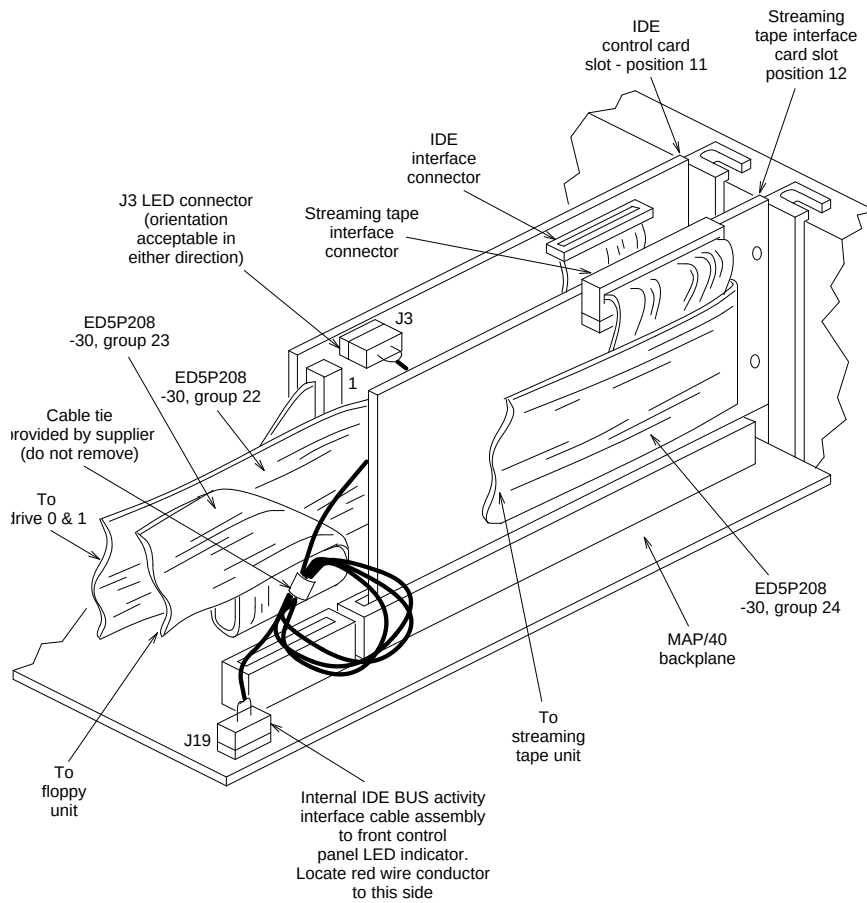


Figure C-14. MAP/40 Cable Assembly Placement

Replacing Components and Cables in the Front Control Panel Assembly

The front control panel assembly contains a number of items that may require service in the field. The main power switch (406901918), reset switch (406901926), reset/dual keyboard cable assembly (406899997), LED PCB/fan cable assembly (406899872), and power feed extension cable assembly (406932947) are connected to this unit. The text in this section will first give an overview of removing the entire front control panel assembly, with all cables and switches attached. It will then offer subsequent headings that give detailed instructions on how to replace individual components attached to the front control panel.

Removing the Front Control Panel Assembly

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Perform "Shutting Down the Operating System" in Chapter 4, "Common Maintenance Procedures" in this book, if the MAP/40 has been operating as a fully loaded system.
3. The MAP/40 Platform provides two different types of connection to the telephone company's Central Office (CO); analog and digital. If the MAP platform undergoing maintenance is connected to the CO over digital (T1/E1) lines, notify the telephone company that the system is being disconnected from the network. They will ask which extensions are affected.



CAUTION:

If the system is shut down and removed from digital (T1/E1) connections on a continuing basis without notifying the telephone company, the company can permanently disconnect your system from the network.

4. Turn *off* the front panel power switch and remove the incoming AC power cord, keyboard, and video cord.
5. Tag the power cord plugs and network circuits with a note indicating that nobody other than yourself should reconnect power to this equipment.
6. Remove the bottom front bezel that holds the card cage fan filter, and the top front bezel in front of the peripheral devices as illustrated in Figure C-15.

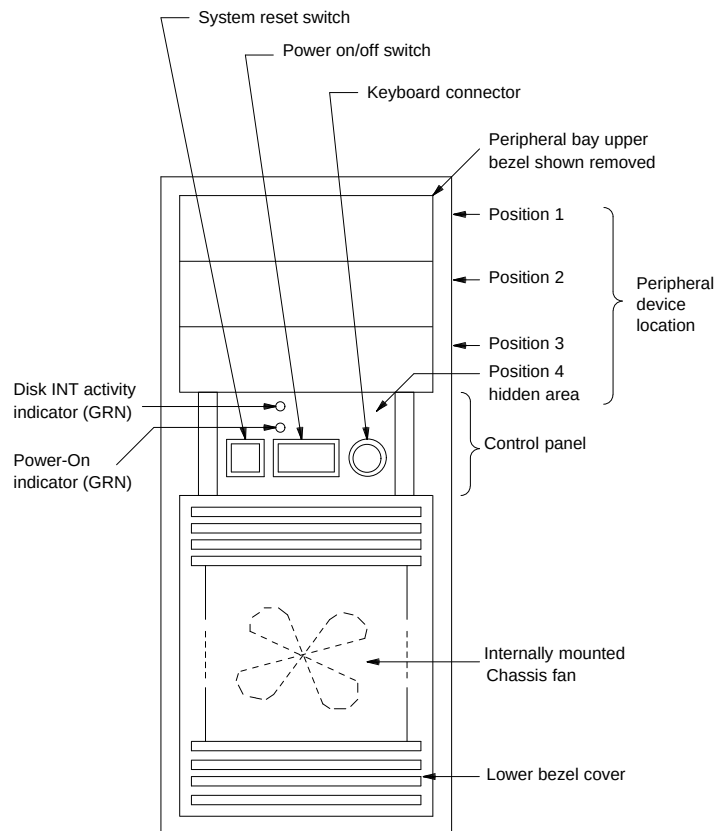


Figure C-15. MAP/40 Front Control Panel Assembly

7. The plastic trim bezel that surrounds the front of the MAP/40 is secured to the chassis with six spring clips, and can be easily removed by gently pulling on each corner of the trim bezel.
8. Remove the four Phillips head screws that secure the front control panel assembly, and pull the assembly from the chassis, exposing the internal cable connections to it.

You have completed this procedure.



NOTE:

The main power switch and the reset switch can be removed and replaced without removing the dress cover or circuit card cage access panel. All other components are assembled as part of the interface cables and require access within the MAP/40 chassis.

Refer to the following sections that describe in detail how to replace the following components:

- Main power switch
- Reset switch
- Keyboard connector cable assembly (front and rear)
- LED indicator PCB/fan/reset cable assembly
- Power feed extension cable assembly to the main power switch

Replacing the Main Power Switch

1. If the main power switch is to be removed, disconnect the four fast-on connectors to the switch, making special note of the connections by referring to Figure C-15.
2. The main power switch can be removed by squeezing the retaining tabs on the top and bottom of the switch and sliding the unit through the front of the front control panel.
3. Slide the replacement main power switch through the front of the front control panel making sure the spring tabs lock the switch securely onto the panel.
4. Reconnect the four fast-on power connections in the proper order as shown in Figure C-15.
5. Reattach the front control panel assembly to the MAP/40 chassis with four Phillips head screws removed in Step 8 of "Removing the Front Control Panel Assembly".
6. Connect power, video, and keyboard connections, and power up the unit. Immediately, the Power On LED on the front control panel assembly should light, and the system should begin initialization. In addition, verify that both the circuit card cage fan and the power supply internal cooling fan are working. If these indicators are *not* met, double-check all cable assembly connections. If this does not solve the problem, contact Tier technical support.
7. If all of the above are noted, and the unit appears operational, replace the plastic trim bezel that surrounds the front of the MAP/40 by gently popping all six spring clips into place. Gently snap the card cage fan cover into place.

You have completed this procedure.

Replacing the Reset Switch

1. Disconnect the two fast-on connectors to the reset switch, making special note of the *switch terminals* the two leads were connected to. The order of these two leads is not important, however, the proper switch contacts are. Refer to Figure C-15.
2. The reset switch can be removed by squeezing the retaining tabs on the top and bottom of the switch and sliding the unit through the front of the front control panel.
3. Slide the replacement reset switch through the front of the front control panel making sure the spring tabs lock the switch securely to the board.
4. Reconnect the two fast-on power connections in the proper order as shown in Figure C-15.
5. Reattach the front control panel assembly to the MAP/40 chassis with four Phillips head screws removed in Step 8 of "Removing the Front Control Panel Assembly".
6. Connect power, video, and keyboard connections, and power up the unit. Immediately, the Power On LED should light, and the system should begin initialization. When initialization is complete, pressing the reset switch and releasing it should reset the MAP/40 system and it will begin initialization again. If this does not happen, re-check the switch position contacts. If this does not solve the problem, escalate it to Tier technical support.
7. If the system appears to be fully operational, replace the plastic trim bezel that surrounds the front of the MAP/40 by gently popping all six spring clips into place. Gently snap the card cage fan cover into place.

You have completed this procedure.

Replacing the Keyboard Connector Cable Assembly (Front and Rear)

Once the front control panel assembly has been detached from the MAP/40 chassis, additional procedures need to be followed to remove the keyboard connector cable assembly. The keyboard connector cable assembly also includes the wiring used by the reset switch.

1. Place the MAP/40 in an upright, vertical position on the work table.
Remove the four Phillips head screws on the right and left side of the chassis and remove the external dress cover as shown at the beginning of this chapter. Be careful not to lose the screws which secure the dress cover.
2. Remove the circuit card cage access panel, following the instructions shown at the beginning of this chapter.
3. Remove the circuit card retaining bracket.
4. Locate the CPU circuit card within the card cage. Disconnect the keyboard connector cable assembly (P303) and the COM2 cable assembly (P302) from the CPU circuit card and move to the side.
5. With the cables disconnected, remove the CPU circuit card by removing the retaining screw from the card's face plate. Make special note of the backplane slot the circuit card is being pulled from in Table C-2 below. Make certain to re-install the card *in the exact position* from which it was pulled.

Check the box that corresponds to the Backplane slot of the CPU card being removed.

Table C-2. Circuit Card Replacement Record

Slot	Slot	Slot	Slot	Slot	Slot	Slot	Slot	Slot	Slot	Slot	Slot
1	2	3	4	5	6	7	8	9	10	11	12

6. Using wire cutters, cut the cable tie on the bottom of the chassis. This cable tie secures all of the front control panel assembly cables. Use care not to nick or cut wires within the cable group. With the cable tie cut, separate the keyboard connector cable assembly from the other cables in the group.
7. Remove the keyboard connector lock nuts that secure the keyboard connector shell to the front control panel using a wrench or long-nose pliers.

-
8. Remove the two fast-on connectors from the reset switch, making note of the *switch terminals* that the leads were connected to.
 9. Remove the rear keyboard connector by loosening and removing the two Phillips head screws and corresponding lock nuts on each side of the connector shell. Gently thread the front keyboard connector under the card cage fan assembly cable routing area, and remove the entire keyboard connector cable assembly from the chassis.
 10. Identify the rear keyboard connector on the new cable assembly, and secure it to the back of the MAP/40 chassis using the two Phillips head screws removed in Step 9.
 11. Route the new cable through the chassis, under the card cage fan assembly cable routing area and out of the front of the chassis. Make sure that the cable is installed in the proper direction (front keyboard connector and reset switch cables protruding from the front of the chassis). Bundle the new cable assembly with the other assemblies and secure them all to the bottom of the chassis with nylon cable tie.
 12. Re-install the CPU circuit card by sliding the card into the backplane slot from which it was removed, and securing it in place with the Phillips head retaining screw removed in Step 5.
 13. Reconnect the COM2 connector (P302) and keyboard connector (P303) to the CPU circuit card. Make sure that the ribbon cable pin 1 wire tracer is oriented in the same direction as the other CPU cables.
 14. Reattach the front keyboard cable assembly connector to the front control panel using the two lock nuts removed in Step 7. Also attach the reset switch leads to the proper switch terminals as shown in Figure C-15.
 15. Reattach the front control panel assembly to the MAP/40 chassis with four Phillips head screws removed in Step 8 of "Removing the Front Control Panel Assembly".
 16. Reconnect power, video, and front keyboard connections, and power up the unit. Once the system initializes, verify that the front keyboard works properly. If not, check all cable assembly and circuit card connections. If the problem cannot be solved, escalate it to Tier technical support. Disconnect the front keyboard and reconnect it the rear keyboard port, and verify that the second keyboard port is working properly.
 17. If the system appears to be fully operational, perform a "soft shutdown" of the operating system, disconnect power, video, and keyboard connections.
 18. Replace the circuit card retaining bracket, circuit card cage access panel, and dress cover.
 19. Replace the plastic trim bezel that surrounds the front of the MAP/40 by gently popping all six spring clips into place. Gently snap the card cage fan cover into place.
 20. Attach the power, video, keyboard and network circuits.

21. Power up the unit.

You have completed this procedure.

Replacing the LED Indicator PCB/Fan Cable Assembly

Once the front control panel assembly has been detached from the MAP/40 chassis, additional procedures need to be followed to remove the LED indicator PCB/fan cable assembly.

1. Place the MAP/40 in an upright, vertical position on the work table.
Remove the four Phillips head screws on the right and left side of the chassis and remove the external dress cover as shown at the beginning of this chapter. Be careful not to lose the screws which secure the dress cover.
2. Remove the circuit card cage access panel, following the instructions shown at the beginning of this chapter.
3. Remove the circuit card retaining bracket.
4. Locate circuit cards in slots 10, 11, and 12. If there are ribbon cables draped over top of the cards, disconnect them from their respective board or hardware unit and place to the side, making special notes as to the connectivity of each.
5. Remove the retaining screw from each card's face plate and save it. Make special note of the backplane slot that the card(s) are being pulled from in Table C-3 below. Make certain to re-install the cards *in the exact same positions* from which they were removed.

Table C-3. Circuit Card Replacement Record

Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt
1	2	3	4	5	6	7	8	9	10	11	12

6. Pull each circuit card from its backplane slot by gently pulling on each corner of the card and removing it from the chassis.
7. The IDE bus activity cable is secured to the LED indicator PCB cable assembly with a nylon wire tie. Cut this tie with wire cutters, being careful not to nick or damage the cables.
8. Cut the nylon wire tie on the bottom of the chassis, near the card cage fan assembly, being careful not to nick or damage cables in the group.

-
9. Disconnect the LED indicator PCB cable assembly from the backplane by removing connector J17.
 10. Remove two Phillips head screws that fasten the LED PCB to the front control panel. Gently pull the LED indicator PCB cable assembly through the front control panel opening, from under the card cage fan assembly cable routing area, and remove it from within the chassis.
 11. Thread connector J17 of the new LED indicator PCB/fan cable assembly through the front control panel opening in the chassis, under the card cage fan assembly cable routing area, and connect to the backplane.
 12. Secure the LED indicator PCB to the front control panel with the two Phillips head screws removed in Step 10.
 13. Bundle the new cable assembly with the other assemblies under the card cage fan assembly cable routing area, and secure them all to the bottom of the chassis with nylon cable tie.
 14. Re-install the circuit cards from slots 10, 11, and 12. Holding each circuit card by its upper corners, slide the card into the backplane connector slot position indicated by the Configurator Listing.
 15. Secure each circuit card faceplate into position by replacing the Phillips head retaining screw.
 16. Replace all ribbon cables that were unplugged to facilitate removal of the cards, including the IDE bus activity cable. Make sure all other cables are reattached to their proper terminations.
 17. Secure the IDE bus activity cable to the LED indicator PCB/fan cable assembly as it was when removed.
 18. Reattach the front control panel assembly to the MAP/40 chassis with four Phillips head screws removed in Step 8 of "Removing the Front Control Panel Assembly".
 19. Connect power, video, and keyboard connections, and power up the unit. Immediately, the "Power On" LED on the front control panel assembly should light. When the system begins initializing, the disk activity LED indicators on the front control panel will flicker, indicating that the cable and LED indicator PCB are functioning properly. If these LEDs do not light to indicate proper operation, double-check all cable assembly and circuit card connections. If the problem is not solved, escalate it to Tier technical support.
 20. If the system appears to be fully operational, perform a "soft shutdown" of the operating system and disconnect power, video, and keyboard connections.
 21. Replace the circuit card retaining bracket, circuit card cage access panel, and dress cover.
 22. Replace the plastic trim bezel that surrounds the front of the MAP/40 by gently popping all six spring clips into place. Gently snap the card cage fan cover into place.

23. Attach the power, video, keyboard and network circuits.

24. Power up the unit.

You have completed this procedure.

Replacing the Power Feed Extension Cable Assembly to the Main Power Switch

Once the front control panel assembly has been detached from the MAP/40 chassis, additional procedures need to be followed to remove the power feed extension cable assembly.

1. Place the MAP/40 in an upright, vertical position on the work table. Remove the four Phillips head screws on the right and left side of the chassis and remove the external dress cover as shown at the beginning of this chapter. Be careful not to lose the screws which secure the dress cover.
2. Remove the circuit card cage access panel and circuit card retaining bracket, following the instructions shown at the beginning of this chapter.
3. Locate the CPU circuit card within the card cage. Disconnect the keyboard connector cable assembly (P303) and the COM2 cable assembly (P302) from the CPU circuit card and move to the side.
4. With the cables disconnected, remove the CPU circuit card by removing the retaining screw from the card's face plate. Make special note of the backplane slot the circuit card is being pulled from in Table C-4. Make certain to re-install the card *in the exact position* from which it was pulled.

Table C-4. Circuit Card Replacement Record

Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt
1	2	3	4	5	6	7	8	9	10	11	12

5. Using wire cutters, cut the cable tie on the bottom of the chassis, that secure all of the front control panel assembly cables. Use care not to nick or cut wires within the group. With the cable tie cut, separate the power feed extension cable assembly from the other cables in the group.
6. Disconnect the power supply output connector (P1) from the power feed extension cable assembly by squeezing the sides of the connector and pulling apart.

-
7. Remove the four fast-on connectors to the main power switch, noting the connectivity of each. Gently pull the power feed extension cable assembly through card cage fan assembly cable routing area, and out of the chassis through the front control panel opening.
 8. Thread connector P1 of the new power feed extension cable through the front control panel opening, under the card cage fan assembly cable routing area, and connect it to the power supply output connector.
 9. Reconnect the four fast-on connectors to the main power switch, noting the connectivity of each in Figure C-15. Do not attach these leads in a different manner than shown, or damage to the MAP/40 could result.
 10. Bundle the new power feed extension cable assembly with the other cables under the card cage fan assembly, and secure them all to the bottom of the chassis with nylon cable tie.
 11. Re-install the CPU circuit card by sliding the card into the backplane slot from which it was removed, and securing it in place with the Phillips head retaining screw.
 12. Reconnect the COM2 connector (P302) and keyboard connector (P303) to the CPU circuit card.
 13. Reattach the front control panel assembly to the MAP/40 chassis with four Phillips head screws removed in Step 8 of "Removing the Front Control Panel Assembly".
 14. Connect power, video, and keyboard connections, and power up the unit. Immediately, the Power On LED on the front control panel assembly should light, and the system should begin initialization. In addition, verify that both the circuit card cage fan and the power supply internal cooling fan are working, as well as all four LED voltage indicators on the backplane are lit. If all of the indications are *not* met, double-check all cable assembly and circuit card connections. If this does not solve the problem, escalate it to Tier technical support.
 15. If the indicators appear to be functional, perform a "soft shutdown" of the system, and disconnect the power, video, and keyboard connections.
 16. Replace the circuit card retaining bracket, circuit card cage access panel, and dress cover.
 17. Replace the plastic trim bezel that surrounds the front of the MAP/40 by gently popping all six spring clips into place. Gently snap the card cage fan cover into place.
 18. Reconnect the keyboard, video, network circuits and power.
 19. Power up the unit.

You have completed this procedure.

Replacing the Hard Disk Drive

The following procedures detail removing and installing a Hard Disk Drive (HDD) in the MAP/40. There may be two hard disk drives, located in Position 3 and Position 4 of the peripheral bay. The HDD in Position 3 (Figure C-16) is named "Drive 1". The HDD in Position 4 is named "Drive 0" (Figure C-17). Procedures will vary depending upon which drive is in need of replacement.

Removing the Hard Disk Drive

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Perform "Shutting Down the Operating System", in Chapter 4, "Common Maintenance Procedures" in this book, if the MAP/40 has been operating as a fully loaded system.
3. The MAP/40 Platform provides two different types of connection to the telephone company's Central Office (CO); analog and digital. If the MAP platform undergoing maintenance is connected to the CO over digital (T1/E1) lines, notify the telephone company that the system is being disconnected from the network. They will ask which extensions are affected.



CAUTION:

If the system is shut down and removed from digital (T1/E1) connections on a continuing basis without notifying the telephone company, the company can permanently disconnect your system from the network.

4. Turn *off* the front panel power switch and remove the incoming AC power cord, keyboard, and video cord.
5. Tag the power cord plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.
6. Remove the four Phillips head screws on the right and left side of the chassis and remove the external dress cover as shown at the beginning of this chapter. Be careful not to lose the screws which secure the dress cover to the MAP/40.
7. Place the MAP/40 on its side to more easily work within the chassis. Use one of the following methods:
 - a. If at all possible, disconnect the incoming lines/trunks, and place the MAP/40 on its side on a work table with the support base over the table edge.
 - b. If you cannot disconnect incoming lines/trunks to the MAP/40, place the MAP/40 on its side and rest the end opposite the support base on large telephone books or similar objects.

-
8. Remove the circuit card cage access panel, following the instructions shown at the beginning of this chapter.
 9. Remove the top front bezel cover by pressing up on the center tab at the bottom of the bezel cover.
 10. Locate the power cord and bus cable (ED5P208-30 Group 22) assembly connections for the HDD in Position 3 (Drive 1). Gently remove the power cord connector and bus cable assembly connections, and move them carefully to the side. If the HDD in Position 4 (Drive 0) is to be replaced, remove the bus cable and power cord connections to that unit as well.
 11. Locate the two Phillips head screws on each side of the peripheral bay chassis that correspond to the location of the Position 3 hard disk drive. Holding the rear of the HDD unit, loosen and remove the HDD mounting screws.
 12. Slide the Position 3 HDD forward within the peripheral bay and remove the unit through the front opening of the MAP/40 chassis.



NOTE:

It is necessary to remove the Position 3 HDD (Drive 1) in order to replace the Position 4 HDD (Drive 0).

If the Position 4 HDD (Drive 0) is to be replaced, locate the two Phillips head screws on each side of the peripheral bay chassis that correspond to the location of the Position 4 hard disk drive. Holding the rear of the HDD unit, loosen and remove the HDD mounting screws. Slide the HDD backward approximately an inch. Tipping the unit slightly, it can be moved to the Position 3 slot, and removed through the front of the chassis.

13. Place the defective hard disk drive on an ESD protected work bench. Loosen and remove two Phillips head screws on each side of the HDD to release it from the mounting brackets. These screws are shown as Item(s) 8 in Figure C-16 (Position 3 HDD) or Figure C-17 (Position 4 HDD).
14. Place the HDD upside down with the circuit board facing up on an ESD-protected surface.

You have completed this procedure.

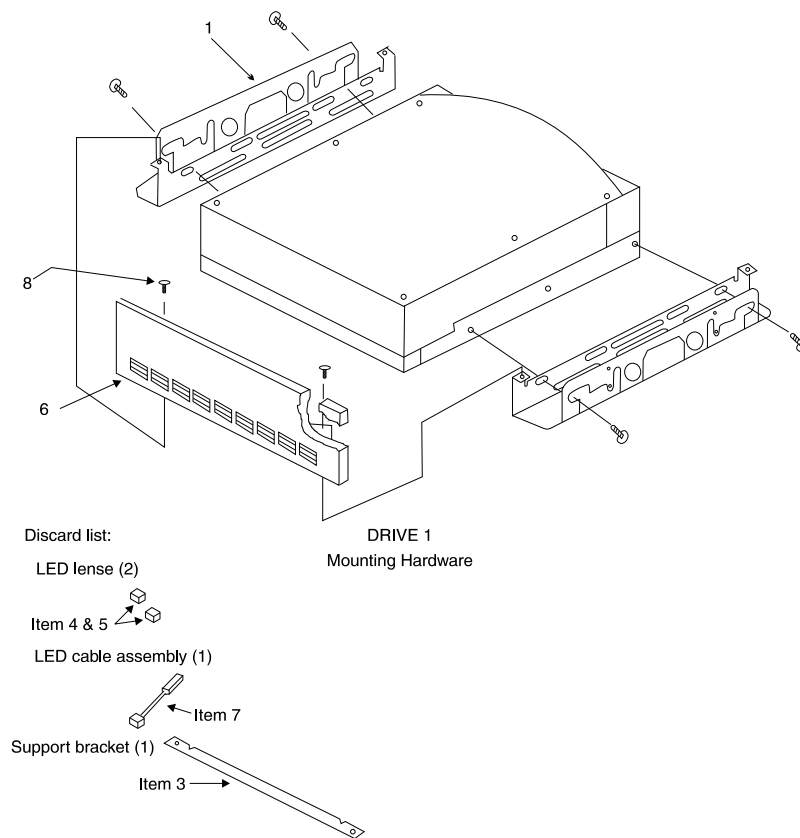


Figure C-16. Position 3 Hard Disk Drive Mounting Kit

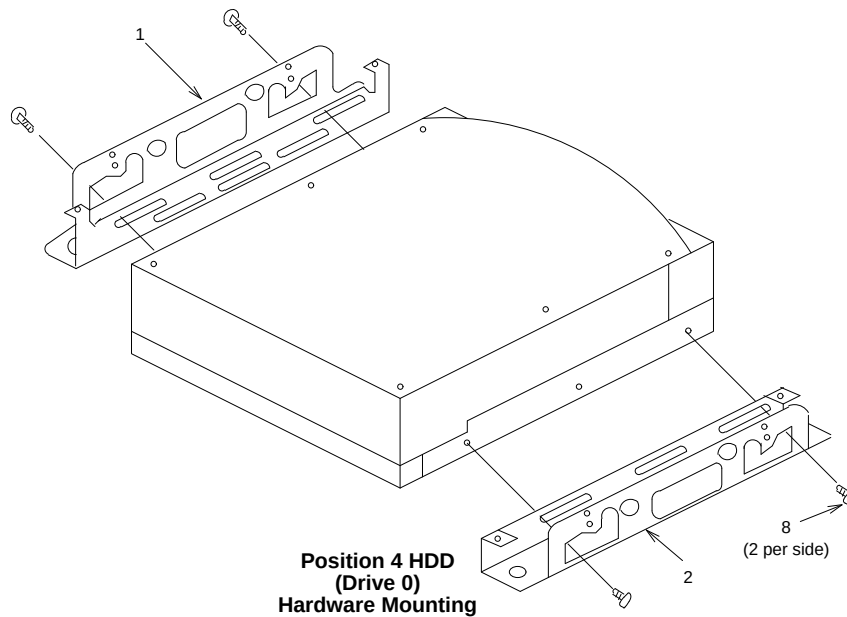


Figure C-17. Position 4 Hard Disk Drive Mounting Kit

Installing the SCSI Hard Disk Drive

Refer to Chapter 10, "Adding Additional Hardware," of *MAP/40 Voice Processing Hardware Installation*, 585-350-109, for information on installing the SCSI hard disk drive in the MAP/40 platform.

Installing the IDE Hard Disk Drive

1. Unpackage the new hard disk drive from its ESD protective wrapping. Keep the package and all ESD protective wrapping to return the defective unit in. Re-use of the original replacement unit packaging is needed to meet the manufacturer's warranty.
2. Verify that jumper J20 for Drive Select 0 (DS-0) (Position 4 HDD) as shown in Figure C-18, or jumper J19 for Drive Select 1 (DS-1) (Position 3 HDD) as shown in Figure C-19 is properly set.

3. Verify jumper J16, I/O Ready (IORDY) position for DS-0 and DS-1. The IDE controller card should already have the IORDY option pre-set by the manufacturer.
4. Verify that no jumpers other than those shown in Figure C-18 or Figure C-19 are used.

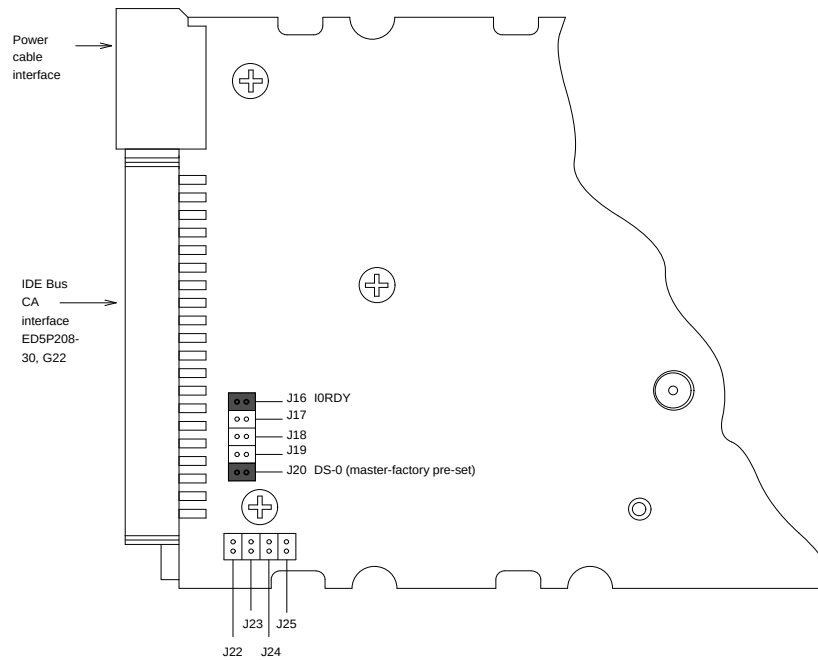


Figure C-18. Position 4 HDD Jumper Selection

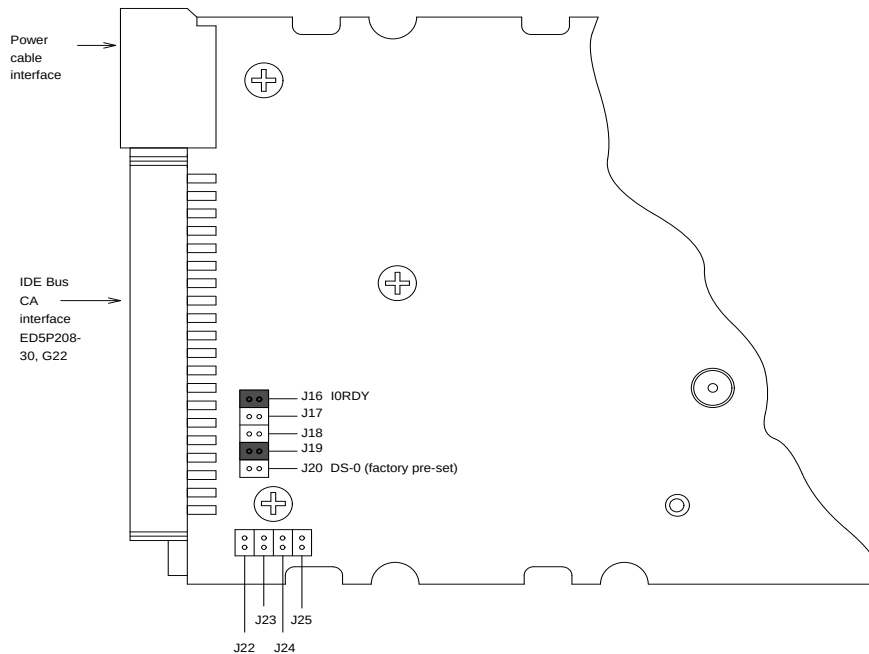


Figure C-19. Position 3 HDD Jumper Selection

5. Hold the new HDD by the metal sides and carefully re-assemble to the mounting brackets, as shown in Figure C-16 or Figure C-17. Re-secure the HDD using the four Phillips head screws removed in Step 13 of "Removing the Hard Disk Drive".

NOTE:

If the Position 4 (Drive 0) HDD was replaced, it must be installed first. Slide the drive through the Position 3 opening, printed circuit side *down*, and position the unit so that the mounting bracket screw holes line up with the bottom holes in the peripheral bay.

Re-secure the HDD in Position 4 of the peripheral bay using the four Phillips head screws removed in Step 12 of "Removing a Hard Disk Drive".

6. Reattach the HDD bus cable assembly (ED5P208-30 Group 22) making sure that the red bus cable No. 1 conductor tracer indicator is *up*. When making the power cable connection, twist the cable three times in a *clock-wise* fashion before plugging the connector into the HDD. This will neatly dress the cable toward the bottom of the chassis. Tuck all wiring neatly back into its original placement, paying special attention not to pinch sections of cable when reassembling.

-
7. Mount the new Position 3 HDD (or original Position 3 HDD, if Position 4 drive was replaced) by sliding the unit into Position 3 opening, printed circuit side *down*, and position the unit so that the mounting bracket screw holes line up with the appropriate holes in the peripheral bay.
 8. Re-secure the HDD in Position 3 of the peripheral bay using the four Phillips head screws removed in Step 11 of "Removing a Hard Disk Drive".
 9. Reattach the bus cable assembly (ED5P208-30 Group 22) making sure that the red bus cable No. 1 conductor tracer indicator is *up*. When making the power cable connection, twist the cable three times in a *clockwise* fashion before plugging the connector into the HDD. Neatly dress the cable towards the bottom of the MAP/40 chassis. Tuck all wiring neatly back into its original placement, paying special attention not to pinch sections of cable when reassembling.
 10. Replace the circuit card access panel when all connections and mountings are complete.
 11. Replace the exterior dress cover and reconnect the keyboard, video, network circuits, and power.
 12. Power up the unit.

You have completed this procedure.

Replacing the Cartridge Tape Drive

The Cartridge Tape Drive (CTD) (406668862) allows data to be loaded, backed-up, and restored using a tape cartridge instead of, or in addition to, floppy disks. It is located in Position 1 of the peripheral bay, as seen in Figure C-1. The following procedures detail removing and installing the cartridge tape drive in the MAP/40.

Removing the Cartridge Tape Drive

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Perform "Shutting Down the Operating System", in Chapter 4, "Common Maintenance Procedures", if the MAP/40 has been operating as a fully loaded system.
3. The MAP/40 Platform provides two different types of connection to the telephone company's Central Office (CO); analog and digital. If the MAP platform undergoing maintenance is connected to the CO over digital (T1/E1) lines, notify the telephone company that the system is being disconnected from the network. They will ask which extensions are affected.



WARNING:

If the system is shut down and removed from digital (T1/E1) connections on a continuing basis without notifying the telephone company, the company can permanently disconnect your system from the network.

4. Turn *off* the front panel power switch and remove the incoming AC power cord. Also disconnect keyboard and video cords.
5. Tag the power cord plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.
6. Remove the four Phillips head screws on the right and left side of the chassis and remove the external dress cover as shown at the beginning of this chapter. Be careful not to lose the screws which secure the dress cover.
7. Place the MAP/40 on its side to more easily work within the chassis. Use one of the following methods:
 - a. If at all possible, disconnect the incoming lines/trunks, and place the MAP/40 on its side on a work table with the support base over the table edge.
 - b. If you cannot disconnect incoming lines/trunks to the MAP/40, place the MAP/40 on its side and rest the end opposite the support base on large telephone books or similar objects.

-
8. Remove the circuit card cage access panel, following the instructions shown at the beginning of this chapter.
 9. Remove the top front bezel cover by pressing up on the center tab at the bottom of the bezel cover.
 10. Locate the cartridge tape drive power lead and bus cable assembly connections, gently removing the power cord connector and bus cable assembly connections. Move them carefully to the side.
 11. Locate the two Phillips head screws on each side of the peripheral bay chassis that secure the CTD in Position 1 of the peripheral bay. Holding the rear of the CTD unit, begin to loosen and remove the CTD mounting screws.
 12. Slide the CTD forward within the peripheral bay and remove through the front opening of the chassis. The CTD fits very tightly in the peripheral bay, and care must be taken not to scrape wiring or components on the underside of the CTD against the Position 2 floppy disk drive plastic faceplate.

You have completed this procedure.

Installing the Cartridge Tape Drive

1. Unpackage the new cartridge tape unit from its ESD protective wrapping. Keep the package and all ESD protective wrapping to return the defective unit in. Re-use of the original replacement unit packaging is needed to meet the manufacturer's warranty.
2. Mount the new CTD into the peripheral bay by sliding the unit into the Position 1 opening, printed circuit board side *down*, and position the unit so that the mounting bracket screw holes line up with the appropriate holes in the peripheral bay.
3. Resecure the CTD in the peripheral bay using the four Phillips head screws removed in Step 11 of "Removing a Cartridge Tape Drive".
4. Re-attach the bus cable assembly, (ED5P208-30 Group 24) making sure that the red bus cable tracer line is *up*. When making the power cable connection, twist the cable three times in a *clockwise* fashion before plugging the connector into the CTD. Neatly dress the cable towards the bottom of the chassis. Tuck all wiring neatly back into its original placement, paying special attention not to pinch sections of cable when reassembling.
5. Replace the circuit card cage access panel when all connections and mountings are complete.
6. Replace the exterior dress cover and reconnect the keyboard, video, network circuits, and power.
7. Power up the unit.

You have completed this procedure.

Replacing the 12-Slot Backplane

The following procedures detail removing and installing the 12-slot backplane (406900084), which all of the circuit cards and peripheral device connections are made to. The backplane is located in the bottom of the MAP/40 card cage area, as shown in Figure C-20.

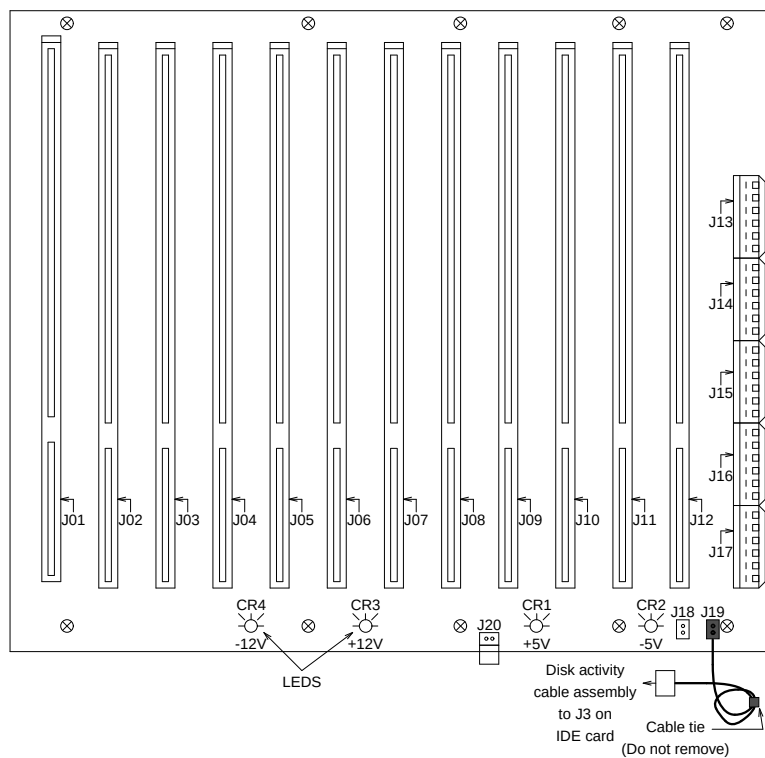


Figure C-20. MAP/40 12-Slot Backplane LED Indicators And Cabling

Removing the 12-Slot Backplane

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. Perform "Shutting Down the Operating System", in Chapter 4, "Common Maintenance Procedures", if the MAP/40 has been operating as a fully loaded system.
3. The MAP/40 Platform provides two different types of connection to the telephone company's Central Office (CO); analog and digital. If the MAP platform undergoing maintenance is connected to the CO over digital (T1/E1) lines, notify the telephone company that the system is being disconnected from the network. They will ask which extensions are affected.



WARNING:

If the system is shut down and removed from digital (T1/E1) connections on a continuing basis without notifying the telephone company, the company can permanently disconnect your system from the network.

4. Turn off the front panel power switch and remove the incoming AC power cord, keyboard, and video cord.
5. Tag the power cord plugs with a note indicating that nobody other than yourself should reconnect power to this equipment.
6. Remove the four Phillips head screws on the right and left side of the chassis and remove the external dress cover as shown at the beginning of this chapter. Be careful not to lose the screws which secure the dress cover.
7. Place the MAP/40 on its side to more easily work within the chassis. Use one of the following methods:
 - a. If at all possible, disconnect the incoming lines/trunks, and place the MAP/40 on its side on a work table with the support base over the table edge.
 - b. If you cannot disconnect incoming lines/trunks to the MAP/40, place the MAP/40 on its side and rest the end opposite the support base on large telephone books or similar objects.
8. Remove the circuit card access panel, following the instructions shown at the beginning of this chapter.
9. Remove the card cage retaining bracket.

-
10. Following the procedures for "Removing a Circuit Card", remove all circuit cards that are connected to the backplane within the MAP/40, paying close attention to the backplane connector slots that each circuit card is removed from. Refer to the Configurator listing for this system to confirm the circuit card/slot assignments.

If the system is already powered down, and the configurator program output can not be used, use the table below to note each card that is being removed, and make certain to re-install each card *in the exact same slot!*

Record the specific circuit card being removed from each Backplane slot in Table C-5 below.

Table C-5. Circuit Card Replacement Record

Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt	Slt
1	2	3	4	5	6	7	8	9	10	11	12

11. Unplug all power lead connectors (J13 to J16) along the power supply side of the backplane and move the cables off to the side. The connectors can be removed by pushing towards the circuit card area and pulling up at the same time. Each connector has a self locking, keyed tab to maintain connection, and prevent improper installation.
12. Unplug the disk activity cable assembly (406899856) from J19 pin header on the backplane as shown in Figure C-2, Figure C-3, Figure C-14, and Figure C-20.
13. When all circuit cards and connectors are removed from the backplane, remove the ten Phillips head screws that secure the backplane to the bottom of the MAP/40 chassis, and lift the backplane from the unit.

You have completed this procedure.

Installing the 12-Slot Backplane

1. Unpackage the new backplane from its ESD protective wrapping. Keep the package and all ESD protective wrapping to return the defective unit in. Re-use of the original replacement unit packaging is needed to meet the manufacturer's warranty.
2. Visually inspect the backplane to verify that the J20 jumper shown in Figure C-20 is present. If this jumper is not provided, remove the jumper from the defective backplane and assemble to the replacement. Make a note on the trouble report and attach to the defective backplane.
3. Mount the new backplane to the MAP/40 chassis using the ten Phillips head screws previously removed.
4. Reconnect all power cable harnesses that were removed from the power supply side of the backplane. Each power supply connector is individually keyed to prevent improper connection.
5. Re-seat the CPU card, the video controller card, the IDE controller card, and the cartridge tape drive card as instructed under previous heading, "Installing a Circuit Card". Be sure to mount these cards in their correct backplane slot, as indicated in the Configurator Listing, or as recorded in Table C-2.
6. With the MAP/40 still disassembled, reconnect the COM2 interface and keyboard to the appropriate termination adapter(s) on the CPU board.
7. Reconnect the video monitor cord to the video monitor interface plug termination on the video controller board. Also connect the disk activity LED cable assembly to J19, and front panel LED cable assembly to connector J17 on the backplane.
8. Reconnect the bus cable assemblies for both hard disk drives (if equipped) and the floppy disk drive to the correct connections on the IDE controller card.
9. Reconnect the bus cable assemblies for the cartridge tape drive to the cartridge tape drive card.
10. Make a final, visual inspection to ensure that all cables and harnesses have been reconnected to their appropriate backplane and circuit card terminations. Figure C-2, Figure C-3, Figure C-14, and Figure C-20 should be used for reference during the connection of all cable assemblies.
11. Reconnect the keyboard, video, and power, and power up the unit. Check for the following visual signs that indicate the system is properly connected:
 - The card cage fan begins operating
 - The front control panel "Power On" indicator is lit.
 - The power supply internal fan is operating.

-
- The four backplane LEDs, (CR1 through CR4) shown in Figure C-19, are all lit to show that the appropriate voltages are being applied to the backplane.
 - The video monitor will show indications that the MAP/40 is attempting to boot. A self-check of memory will be displayed on the terminal.
 - The floppy disk drive LED will temporarily light, indicating floppy disk drive bus activity and proper cable connection.



NOTE:

Depending upon the particular configuration of the MAP/40 being serviced, error messages may be displayed on the screen indicating that certain circuit cards are not in their proper slots. This will not affect the MAP/40's attempt to boot, and the error messages should subside when the system is fully operational with the four circuit cards.

If the system is assembled properly, the machine will finish its boot process in approximately 2 minutes and remain in an idle state, waiting for system login.

If the system configuration indicates a LAN card is used, this circuit card must be installed for the system to complete the full re-boot operation. If not, excessive system error messages will indicate the external LAN connections cannot be made.

12. If all of the indications listed previously are met, and the MAP/40 seems to be operational, a "soft shutdown" of the system should be performed. The power can then be disconnected, and the remaining cards be installed into their respective backplane slots.
13. Reconnect all remaining bus cable assemblies such as TDM bus, CMP/SP bus, etc. to the last boards installed.
14. Review the Configurator Listing and visually inspect the MAP/40 to ensure that no other cables or boards have been improperly installed, or forgotten to be reconnected.
15. Replace the circuit card retaining bracket.
16. Replace the circuit card cage access panel when all connections and mountings are complete.
17. Replace the exterior dress cover and reconnect the power.
18. Power up the unit.

You have completed this procedure.

What's in This Appendix

This appendix describes assignment of circuit card switch settings for the Intuity CONVERSANT Voice Information System (VIS) circuit cards listed below. For additional information about circuit card settings, refer to the MAP hardware installation book for your platform.

- 386 CPU Circuit Card
- 486 CPU Circuit Card
 - Revision 1
 - Revision 2
- Video Display Controller Cards
 - WDXLR833124
 - WDXLR831124
 - WDXLR83160
 - VDC600U
- SCSI Host Adapter Controller Circuit Card
- ESDI Hard Disk Controller Circuit Card
- IDE Hard Disk Controller Circuit Card
- ESDI Tape Controller Circuit Card
- Remote Maintenance Circuit Card
- Asynchronous Host Cards
 - Eight-port IPC-900 or Gemini-1000 Asynchronous Circuit Card

-
- Synchronous Host Cards
 - PC/XL Synchronous Card
 - FAX Circuit Card
 - Internet LAN Circuit Card
 - StarLAN Circuit Card
 - PC/ISDN (IPCI) Circuit Card
 - PC/PBX Interface Circuit Card (DCP Card)
 - Tip/Ring (T/R) Circuit Cards:
 - IVP6 (AYC28)
 - IVP6 (AYC5 and/or AYC5B)
 - IVP6-IU (AYC16)
 - IVP6-IA (AYC26)
 - IVP6-ID (AYC27)
 - IVP4 (AYC6 and/or AYC6B)
 - VRS6 (AYC1)
 - T1 Circuit Cards:
 - T1 (AYC3B)
 - T1 (AYC11)
 - E1 (AYC21) Circuit Card
 - Signal Processor (SP) Circuit Cards:
 - AYC2B
 - AYC2C
 - AYC9
 - Companion (AYC7) Circuit Card
 - External Alarms Interface Relay Circuit Card

Before You Replace Any Circuit Cards



CAUTION:

Make sure that you have established proper ESD grounding before beginning work with any circuit cards. Refer to Chapter 1, "Preparing the Site," of the hardware installation book for your platform for specific information about ESD grounding.

Whenever a new card is added to the system, the card's default state is MANOOS (manual-out-of-service). New cards should be diagnosed and then must be placed in the INSERTV (in service) state.

Although all options for switch settings are shown in this appendix, the card setup in the system must match the configurator output. See Chapter 4, "Running the Configuration Program," in the appropriate hardware installation book for additional information.

Storing and Handling Cards

- Always place cards on a ESD-protected surface.
- Always place CMP cards with the component side down.
- Never stack circuit cards.
- If a card or component is dropped, we recommend that the card/component should be replaced because it could cause a short or cracked capacitors.

Circuit Card Terminating Resistors

The SP, T/R, T1 and E1 circuit cards may be shipped with TDM bus terminator single in-line packages (SIPs) in place on the card. These may also be known as *terminating resistors*.

If the circuit card is the last card connected to either end of the TDM bus, you must ensure that the TDM bus terminator SIPs are in place on the card. If the card is not the last card on the bus, you must remove the SIPs.

"Last card connected" means that there are no other cards between the T/R card and the end of the bus. There may, however, be empty connectors.

Refer to the figures in this chapter to determine the location of the SIPs for each card.



NOTE:

For IVP T/R cards *not connected* to a TDM bus, you must leave the SIPs on at all times.

Replacing a Terminator SIP

If you must replace a terminator SIP, ensure that it is oriented as shown in Figure D-1. Then align it with the key marking (this will be a dot, a square, or the number 1, depending on which version of the card you are installing) on the terminating resistor to the left (when you are looking at the card with the gold fingers pointing down) and insert it.

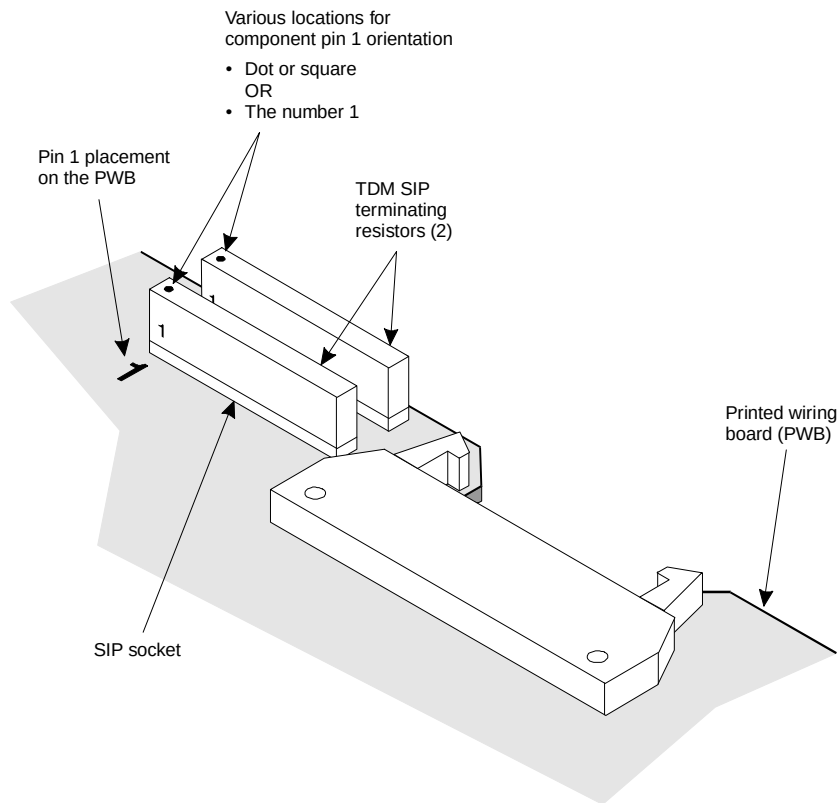


Figure D-1. Replacing Terminator SIPs on the TDM Bus

386 CPU Circuit Card

The 386 CPU circuit card contains seven jumper blocks, as shown in Figure D-2. Locate the jumper on the right two pins of JP21, pins 2 and 3.

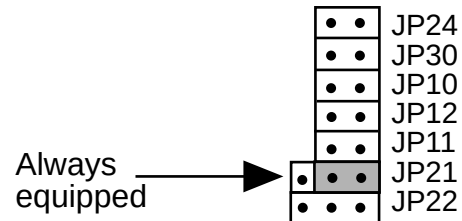


Figure D-2. Jumper on the CPU Circuit Card

Jumpers JP24, JP30, and JP22 are never equipped with any jumpers in the MAP/100. Jumper JP21 always has a jumper on pins 2 and 3, as shown. JP11, JP10, and JP12 are used to physically connect interrupts 4, 3, and 7 respectively to the PC/AT Bus.

When these jumpers are installed, you *MUST* disable COM1 and COM2 in the SETUP table. See section, "Accessing the Setup Screen," in Chapter 3, "Connecting Peripherals and Powering Up" of the hardware installation book for your platform for more information on using SETUP.

Most applications will have all of these ports enabled and NO jumpers will be equipped. However, applications which use adapter cards that require interrupts 4, 3, and 7 should configure these jumpers by following Table D-1.

Table D-1. Jumper Settings on the CPU Circuit Card

Port	Jumper	Jumper In/Out	IRQ	Disposition
COM1	JP11	In	4	COM1 must be disabled in SETUP, IRQ4 available for other use.
COM2	JP10	In	3	COM2 must be disabled in SETUP, IRQ3 available for other use.
Parallel Port	JP12	In	7	Parallel Port cannot be used, IRQ7 available for other use.

486 CPU Circuit Card

The manufacturer packages the central processing unit (CPU) on a single PC/AT compatible circuit card that plugs into the passive backplane. The 486 CPU circuit card supports up to four 16-Mbyte single in-line memory modules (SIMMS) for a total of 64 Mbytes of memory. There are two revisions of this card, revision 1 (Figure D-1) and revision 2 (Figure D-2).

486 CPU Circuit Card, Revision 1

Figure D-3 shows revision 1 of the 486 CPU circuit card.

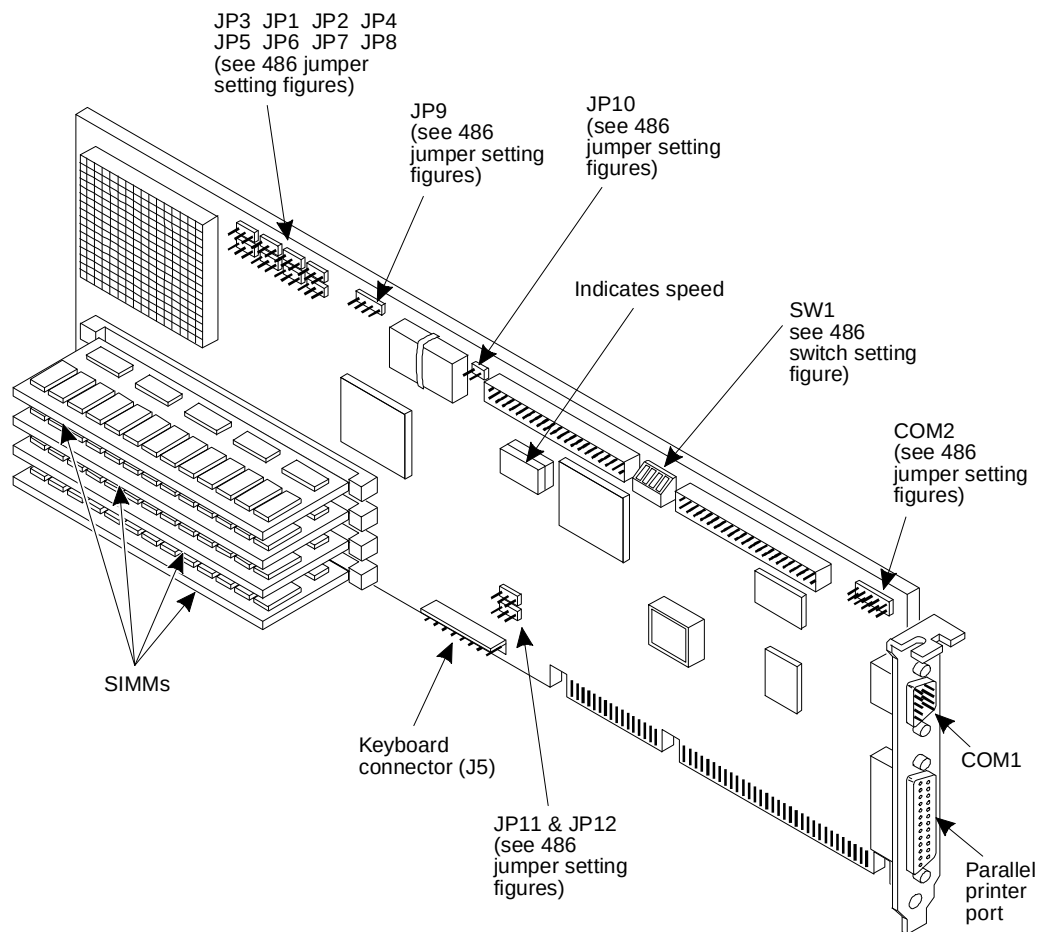


Figure D-3. 486 CPU Circuit Card, Revision 1

Switches on the 486 CPU

Figure D-3 shows the location of the rocker switch (SW1) on revision 1 of the 486 CPU circuit card. Verify that it is set as shown in Figure D-4.

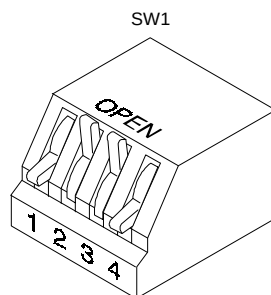


Figure D-4. Switch Settings for the 486 CPU Circuit Card, Revision 1

Jumpers on the 486 CPU

Figure D-3 shows the location of the jumpers (JP1 through JP12) on revision 1 of the 486 CPU circuit card. Verify that they are set as shown in Figure D-5 for the 25-MHz version and in Figure D-6 for the 50-MHz version.

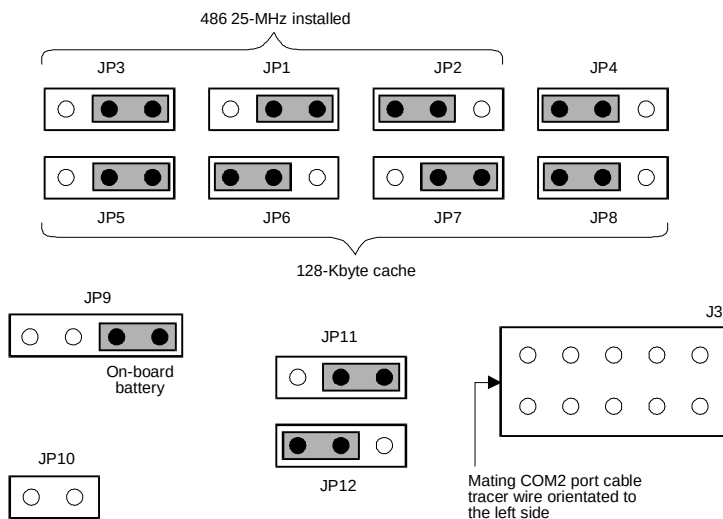


Figure D-5. Jumper Settings for the 25-MHz 486 CPU Circuit Card, Revision 1

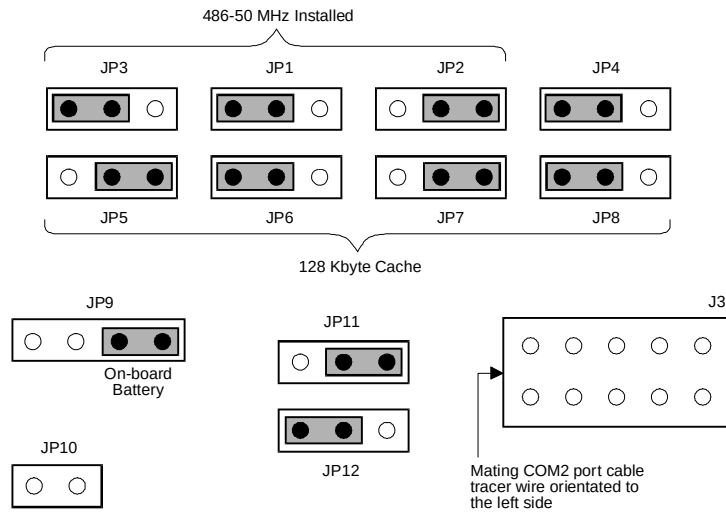


Figure D-6. Jumper Settings for the 50-MHz 486 CPU Circuit Card, Revision 1

486 CPU Circuit Card, Revision 2

Figure D-7 shows revision 2 of the 486 CPU circuit card.

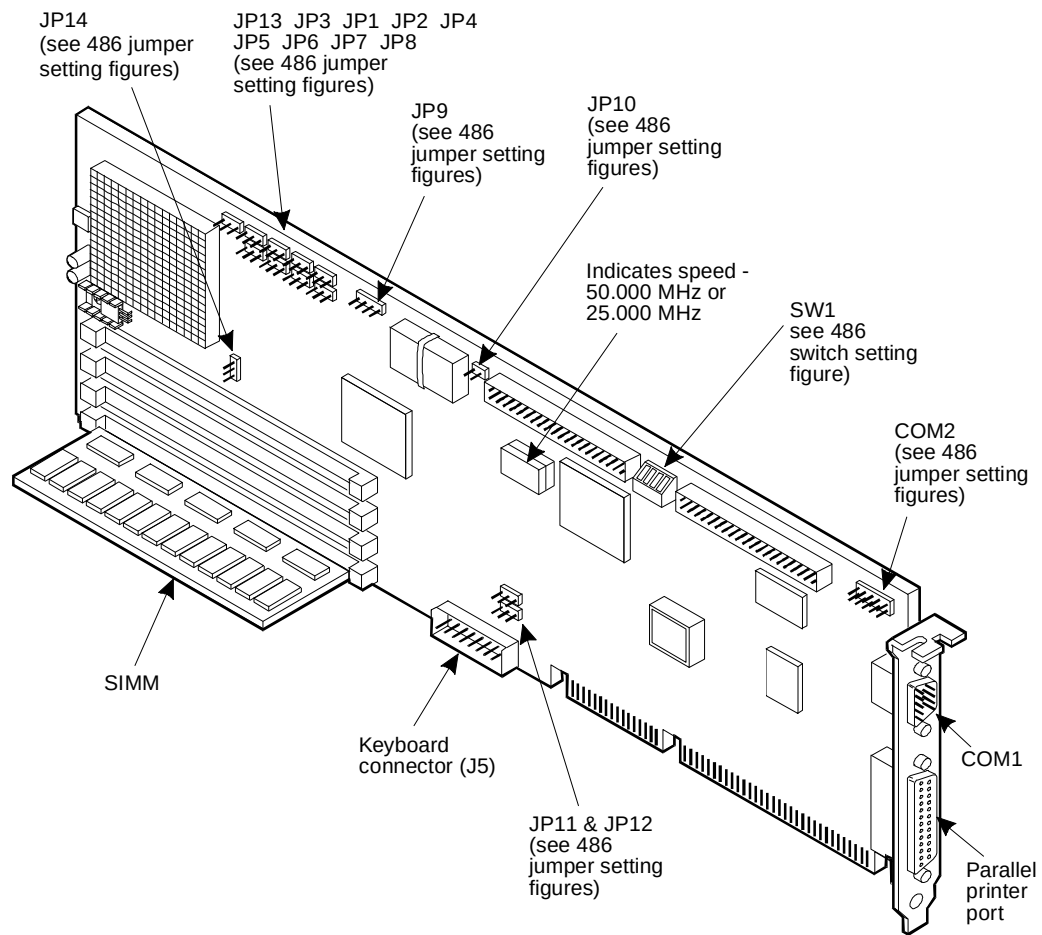


Figure D-7. 486 CPU Circuit Card, Revision 2

Switches on the 486 CPU

Figure D-7 shows the location of the rocker switch (SW1) on revision 2 of the 486 CPU circuit card. Verify that it is set as shown in Figure D-8.

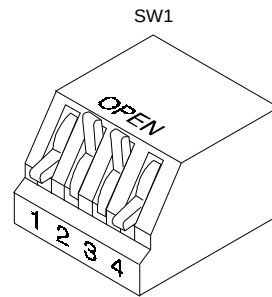


Figure D-8. Switch Settings for the 486 CPU Circuit Card, Revision 2

Jumpers on the 486 CPU

Figure D-7 shows the location of the jumpers (JP1 through JP14) on revision 2 of the 486 CPU circuit card. Verify that they are set as shown in Figure D-9 for the 25-MHz version and in Figure D-10 for the 50-MHz version.

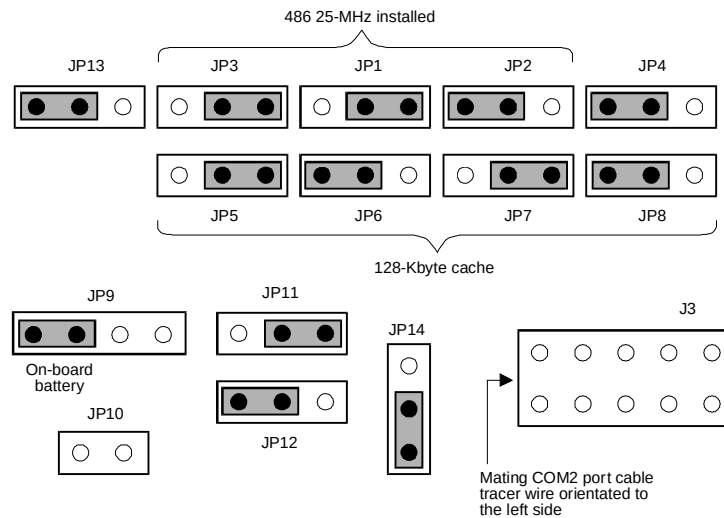


Figure D-9. Jumper Settings for the 25-MHz 486 CPU Card, Revision 2

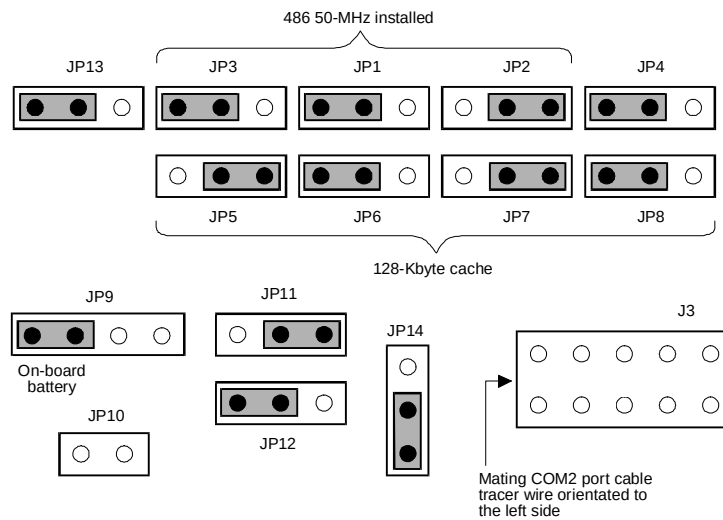


Figure D-10. Jumper Settings for the 50-MHz 486 CPU Card, Revision 2

Video Display Controller Cards

The video controller card may be one of 4 supported versions:

- Model WDXLR833124 (comcode 407356955)
- Model WDXLR831124 (comcode 407095835)
- Model WDXLR83160 (comcode 406901884)
- Model VDC600U (comcode 406365809)

Model numbers WDXLR833124, WDXLR83160, and WDXLR831124 can be used with the Graphical Speech Editor.



CAUTION:

Verify that the installation information you are using is correct for the version you are installing.

Setting the Resource Options

Use the following sections — one for each type of video card — to set the switches and jumpers on the video controller card.

Model WDXLR833124

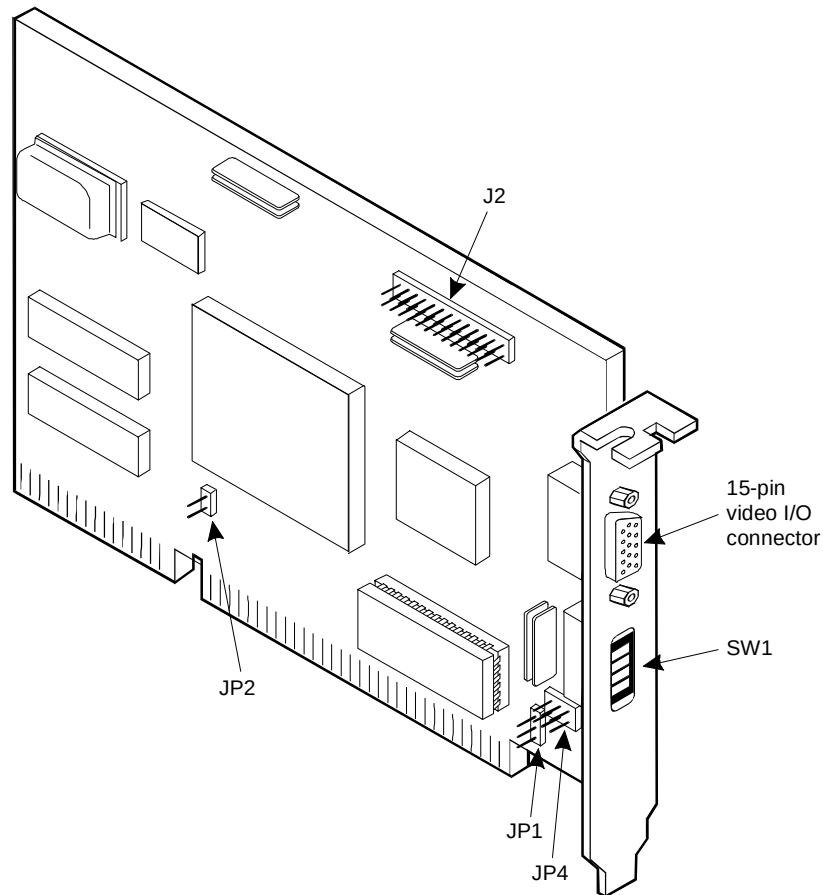


Figure D-11. Video Controller Card — Model WDXLR833124 (comcode 407356955)

SW1 Dip Switches — Model WDXLR833124

Position the card in front of you with the gold fingers pointing down. See Figure D-11 for proper orientation.

SW1 — Set all dip switches to the off position (all switches pointed upward). Use the point of a pen or similar instrument to set the switches. Do not use a lead pencil. The graphite can damage the card.

These switches control the monitor's mode and vertical and horizontal retrace/scan rate. See Figure D-11 for the location of the switch on video controller card.



NOTE:

Switch position 2 controls the horizontal retrace rate. This switch may be set to on or off on your current video card. For new video cards being installed, set this switch according to Figure D-12.

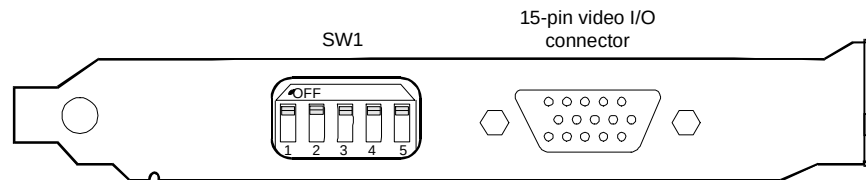


Figure D-12. Switch Settings on Model WDXLR833124

Jumpers — Model WDLRX833124

Jumper JP1 – Factory Use: Do not change the settings on this jumper.

Jumper JP2 – Zero Wait State: The manufacturer sets this jumper. Remove the jumper block from JP2. This block must be removed for the Graphical Speech Editor to function properly.

Jumper JP4 – Monitor Resolution Mode: Verify that a jumper block is installed on pins 1 and 2 of JP4. Note that pin 1 is on the left side of the jumper (see Figure D-13 for proper orientation).

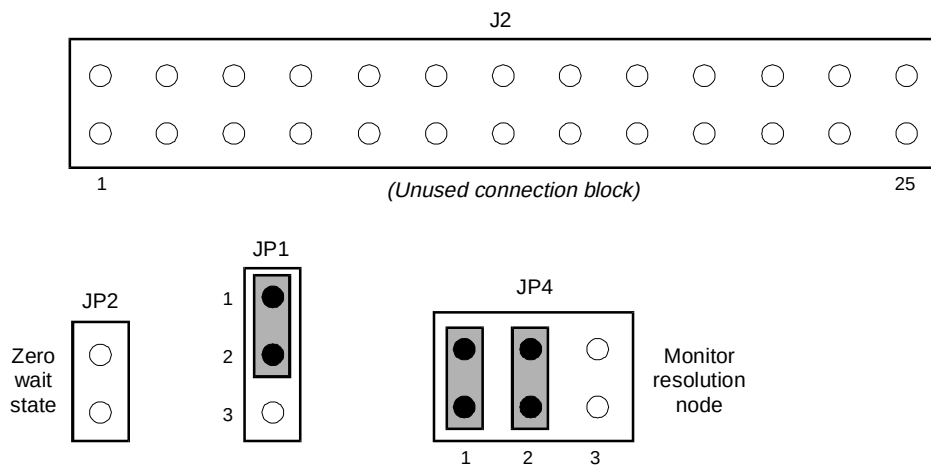


Figure D-13. Jumper Settings on Model WDXLR833124

Model WDXLR831124

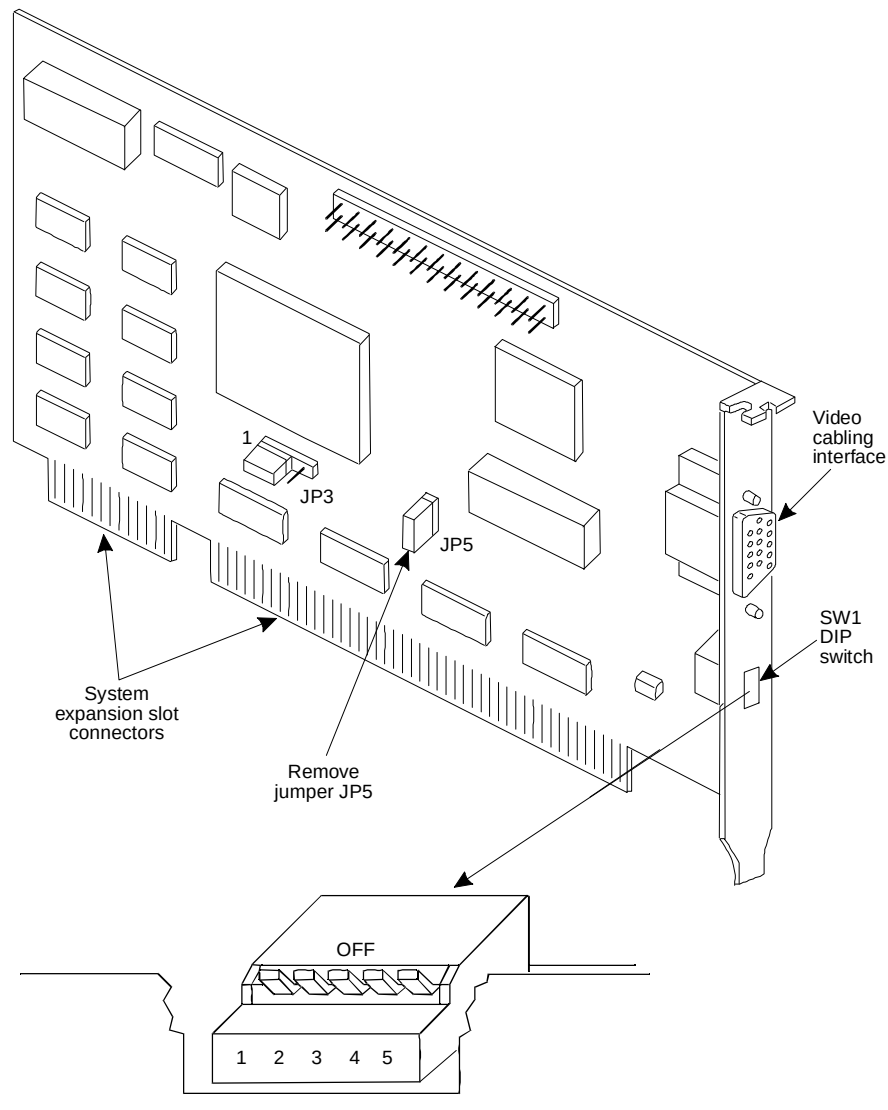


Figure D-14. Video Controller Card — Model WDXLR831124 (comcode 407095835)

SW1 Dip Switches — Model WDXLR831124

Position the card in front of you with the gold fingers pointing down. See Figure D-14 for proper orientation.

SW1 — Set all dip switches to the off position (all switches pointed upward). Use the point of a pen or similar instrument to set the switches. Do not use a lead pencil. The graphite can damage the card.

These switches control the monitor's mode and vertical and horizontal retrace/scan rate. See Figure D-14 for the location of the switch on video controller card.



NOTE:

Switch position 2 controls the horizontal retrace rate. This switch may be set to on or off on your current video card. For new video cards being installed, set this switch according to Figure D-14.

Jumpers — Model WDLRX831124

Jumper JP5 — Zero Wait State: The manufacturer sets this jumper. Remove the jumper block from JP5. This block must be removed for the Graphical Speech Editor to function properly.

Jumper JP3 — Address Latch Enable: The manufacture sets this jumper. JP3 enables the address latch. Install the jumper block on pins 1 and 2 of JP3. Note that pin 1 is on the left side of the jumper (see Figure D-14 for proper orientation).

Model WDXLR83160

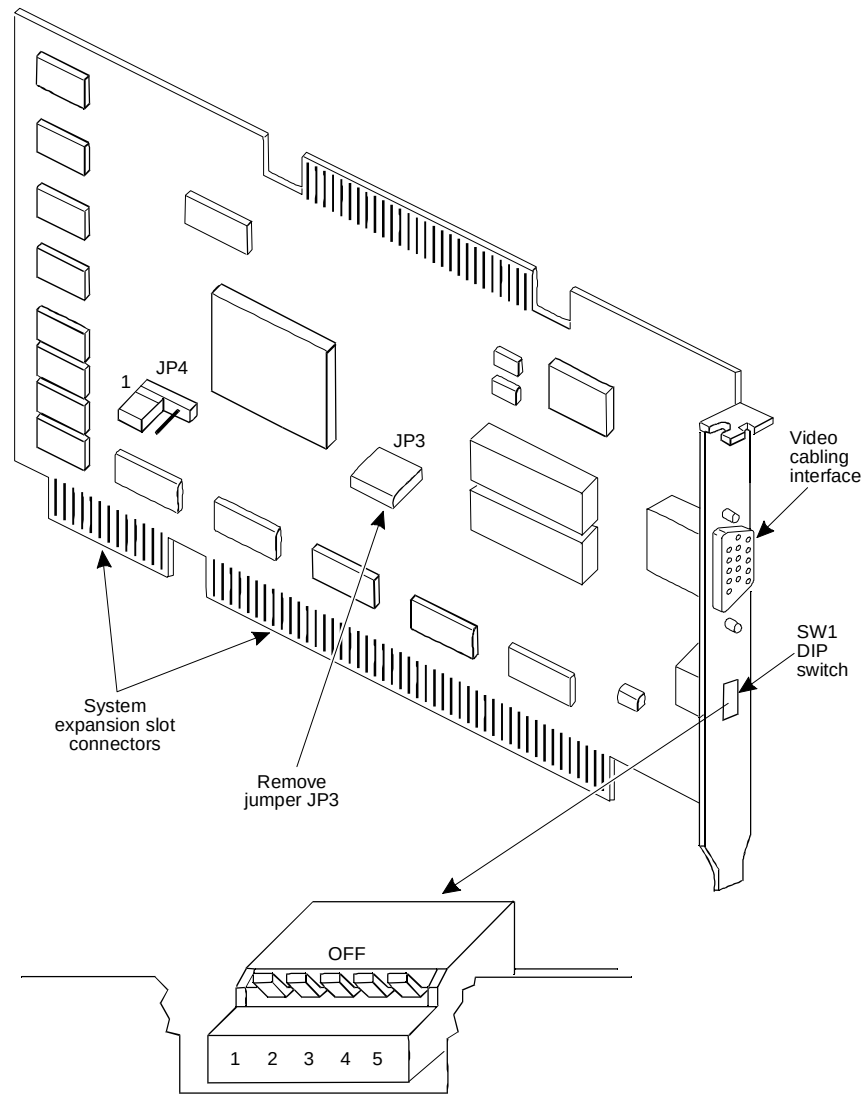


Figure D-15. Video Controller Card — Model WDXLR83160 (comcode 406901884)

SW1 Dip Switches — Model WDXLR83160

Position the card in front of you with the gold fingers pointing down. See Figure D-15 for proper orientation.

SW1 — Set all dip switches to the off position (all switches pointed upward). Use the point of a pen or similar instrument to set the switches. Do not use a lead pencil. The graphite can damage the card.

These switches control the monitor's mode and vertical and horizontal retrace/scan rate. See Figure D-15 for the location of the switch on video controller card.



NOTE:

Switch position 2 controls the horizontal retrace rate. This switch may be set to on or off on your current video card. For new video cards being installed, set this switch according to Figure D-15.

Jumpers — Model WDLRX83160

Jumper JP3: The manufacturer sets this jumper. Remove the jumper block from JP3. This block must be removed for the Graphical Speech Editor to function properly.

Jumper JP4 – Address Latch Enable: The manufacture sets this jumper. JP4 enables the address latch. Install the jumper block on pins 1 and 2 of JP4. Note that pin 1 is on the left side of the jumper (see Figure D-15 for proper orientation).

Model VDC600U

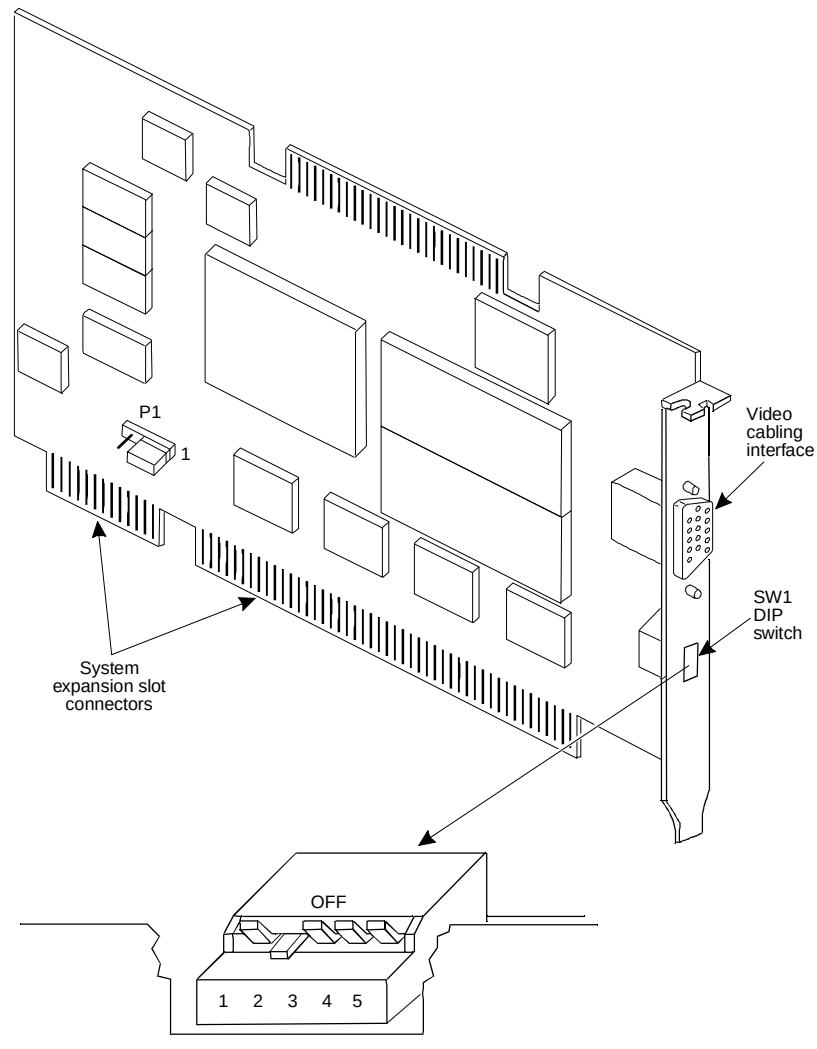


Figure D-16. Video Controller Card — Model VDC600U (comcode 406365809)

⇒ NOTE:

The VDC600U model *cannot* be used with the Graphical Speech Editor.

SW1 Dip Switches — Model VDC600U

Position the card in front of you with the gold fingers pointing down. See Figure D-16 for proper orientation.

SW1 — Set the dip switches using the following table. Use the point of a pen or similar instrument to set the switches. Do not use a lead pencil. The graphite can damage the card. These switches control the monitor's mode and vertical and horizontal retrace/scan rate. See Figure D-16 for the location of the switch on video controller card.

Jumpers — Model VDC600U

Jumper P1 — Install the jumper block on pins 1 and 2 of P1. Note that pin 1 is on the right side of the jumper (see Figure D-16 for proper orientation).

SCSI Host Adapter Controller Card

Figure D-17 shows the location of jumpers and switches on the SCSI host adapter controller card.

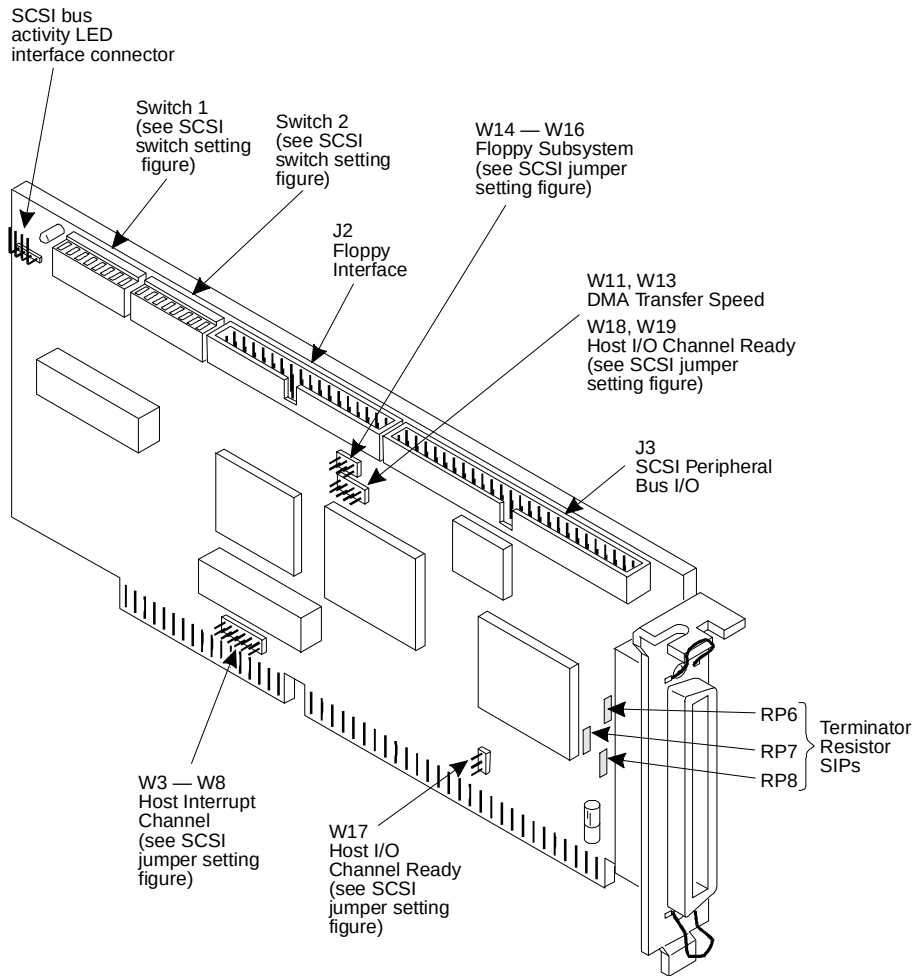


Figure D-17. SCSI Host Adapter Controller Card

Jumper Settings on the SCSI Host Adapter Controller Card

Figure D-17 shows the locations of the jumpers on the SCSI controller circuit card. Figure D-18 shows the correct settings for these jumpers. Table D-2 provides a summary of the jumper settings (the recommended settings are shown in bold).

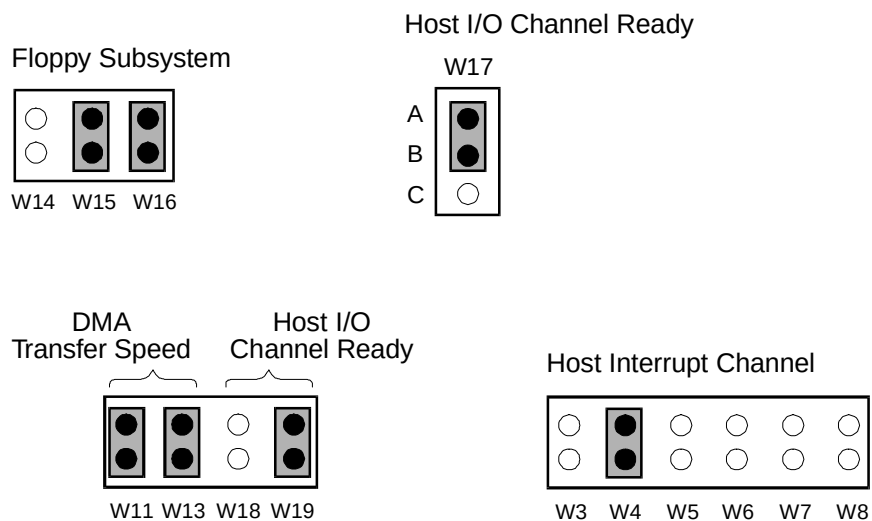


Figure D-18. SCSI Controller Card Jumper Settings

Table D-2. Summary of the Jumper Settings for the SCSI Controller Circuit Card

Function	Jumper Number	Jumper Setting	Output Result
Host interrupt channel	W3	Installed	15
	W4	Installed	14
	W5	Installed	12
	W6	Installed	11, default
	W7	Installed	10
	W8	Installed	9
DMA transfer speed	W11 W13	Not installed Not installed	5.0 Mbyte/sec
	W11 W13	Not installed Installed	5.7 Mbyte/sec
	W11 W13	Installed, Not installed	6.7 Mbyte/sec
	W11 W13	Installed Installed	3.3 Mbyte/sec
Floppy subsystem	W14	Not installed	Primary (3FX)
	W14	Installed	Secondary (37X)
	W15 W16	Not installed Not installed	Disable
	W15 W16	Installed Installed	Enable, default
Host I/O channel ready	W17	A-B installed	Enable, default
	W17	B-C installed	Disable
	W18	Not installed	Reserved for spare
	W19	Installed	Reserved for factory testing

Switch Settings on the SCSI Host Adapter Controller Card

Figure D-19 shows the switch settings for the SCSI controller card. Table D-3 and Table D-4 provide a summary of the switch settings (the recommended settings are shown in bold type).

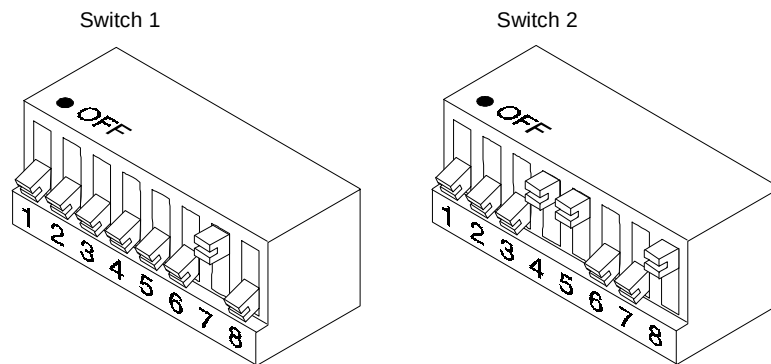


Figure D-19. SCSI Controller Card Switch Settings

Table D-3. Summary of Switch Settings for Switch Bay 1 on the SCSI Controller Circuit Card

Function	Switch Number	Switch Setting	Output Result
Host adapter SCSI ID	1,2,3	OFF, OFF, OFF	0
	1,2,3	ON, OFF, OFF	1
	1,2,3	OFF, ON, OFF	2
	1,2,3	ON, ON, OFF	3
	1,2,3	OFF, OFF, ON	4
	1,2,3	ON, OFF, ON	5
	1,2,3	OFF, ON, ON	6
	1,2,3	ON, ON, ON	7, default
SCSI parity	4	OFF	Disable
	4	ON	Enable, default
Disk > 1 Gbyte (not SCO UNIX)	5	OFF	Enable
	5	ON	Disable, default
Adapter initiate synchronous negotiation	6	OFF	Enable
	6	ON	Disable, default
Host DMA channel	7,8	OFF, OFF	Disable
	7,8	ON, OFF	7
	7,8	OFF, ON	6
	7,8	ON, ON	5, default

Table D-4. Summary of Switch Settings for Switch Bay 2 on the SCSI Controller Circuit Card

Function	Switch Number	Switch Setting	Output Result
Host I/O port address	1,2,3	ON, OFF, OFF	134H-137H
	1,2,3	OFF, ON, OFF	234H-237H
	1,2,3	OFF, OFF, OFF	Reserved
	1,2,3	ON, ON, OFF	334H-337H
	1,2,3	OFF, OFF, ON	Reserved
	1,2,3	ON, OFF, ON	130H-133H
	1,2,3	OFF, ON, ON	230H-233H
	1,2,3	ON, ON, ON	330H-333H, default
Host BIOS (16-Kbyte address)	4,5	OFF, OFF	0C8000H
	4,5	ON, OFF	Disable
	4,5	OFF, ON	0D8000H
	4,5	ON, ON	0DC000H, default
Host interrupt	6,7,8	OFF, OFF, OFF	Reserved
	6,7,8	ON, OFF, OFF	Reserved
	6,7,8	OFF, ON, OFF	15
	6,7,8	ON, ON, OFF	14
	6,7,8	OFF, OFF, ON	12
	6,7,8	ON, OFF, ON	9
	6,7,8	OFF, ON, ON	10
	6,7,8	ON, ON, ON	11, default

ESDI Hard Disk Controller Card

The ESDI hard disk controller card with its proper jumper settings is shown in Figure D-20.

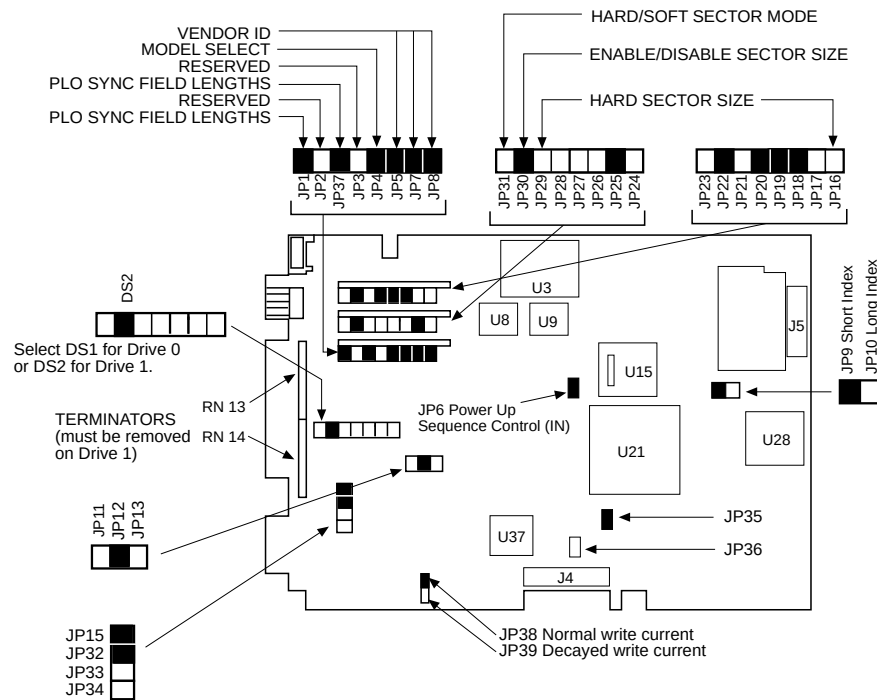


Figure D-20. ESDI Hard Disk Controller Card Jumper Settings

IDE Hard Disk Controller Card

The IDE controller card is supported in the MAP/40 *only*. The card requires jumper settings to be configured as shown in Figure D-21. Figure D-21 illustrates the interrupt control jumper, I/O channel ready jumper, and floppy diskette control enable jumper. Verify all jumper settings.

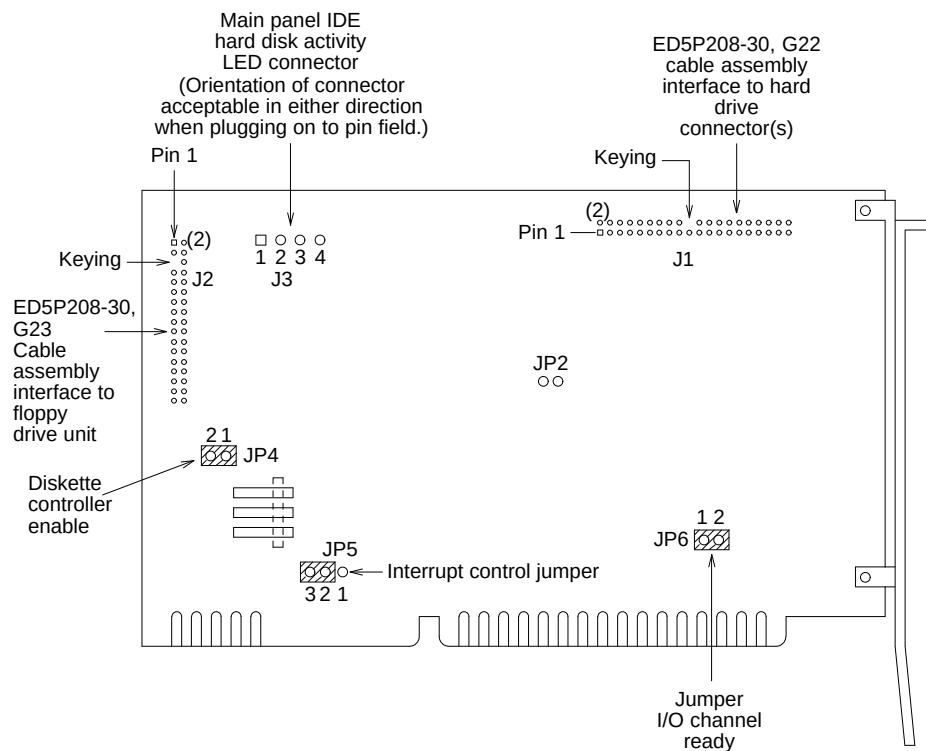


Figure D-21. IDE Hard Disk Drive Controller Card

Interrupt Control Jumper

This jumper determines how the IRQ14 interrupt is handled by the interface. The correct configuration on the MAP/40 is to jumper pins 2-3 as illustrated.

I/O Channel Ready Signal Jumper

Use this jumper to connect the bus ready signal between the hard drive and the controller card. If installing a new or repaired card, select the "reserve" jumper block provided in the middle of the circuit card and relocate over the I/O channel ready pins 1 & 2 as illustrated in Figure D-21.

Floppy Drive Enable Jumper

Use this jumper to configure the card for the floppy diskette drive. The manufacturer installs this jumper.

ESDI Cartridge Tape Controller Card

The ESDI tape controller card controls the ESDI cartridge (or streaming) tape drive.

Set the switches and jumpers as indicated in the Figure D-22 and Figure D-23.

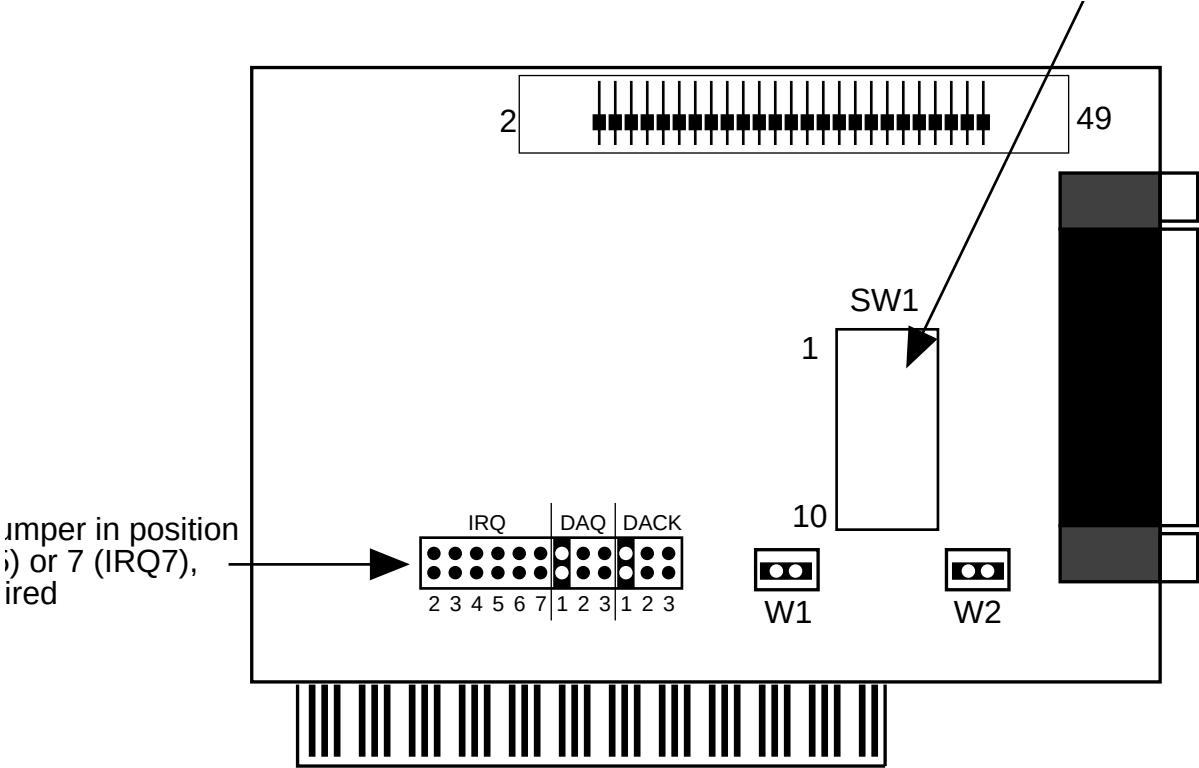


Figure D-22. Cartridge Tape Controller Card

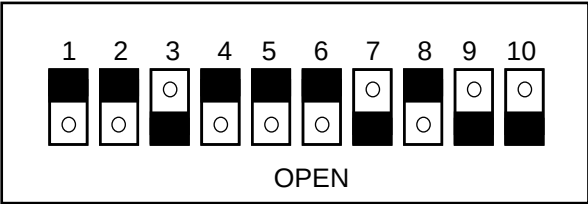


Figure D-23. Cartridge Tape Controller Card Switch Settings

Remote Maintenance Circuit Card

The Remote Maintenance circuit card (Figure D-24) allows remote diagnostics of basic hardware components.



NOTE:

Other AT&T documentation may refer to this card as the Remote Maintenance Board (RMB).

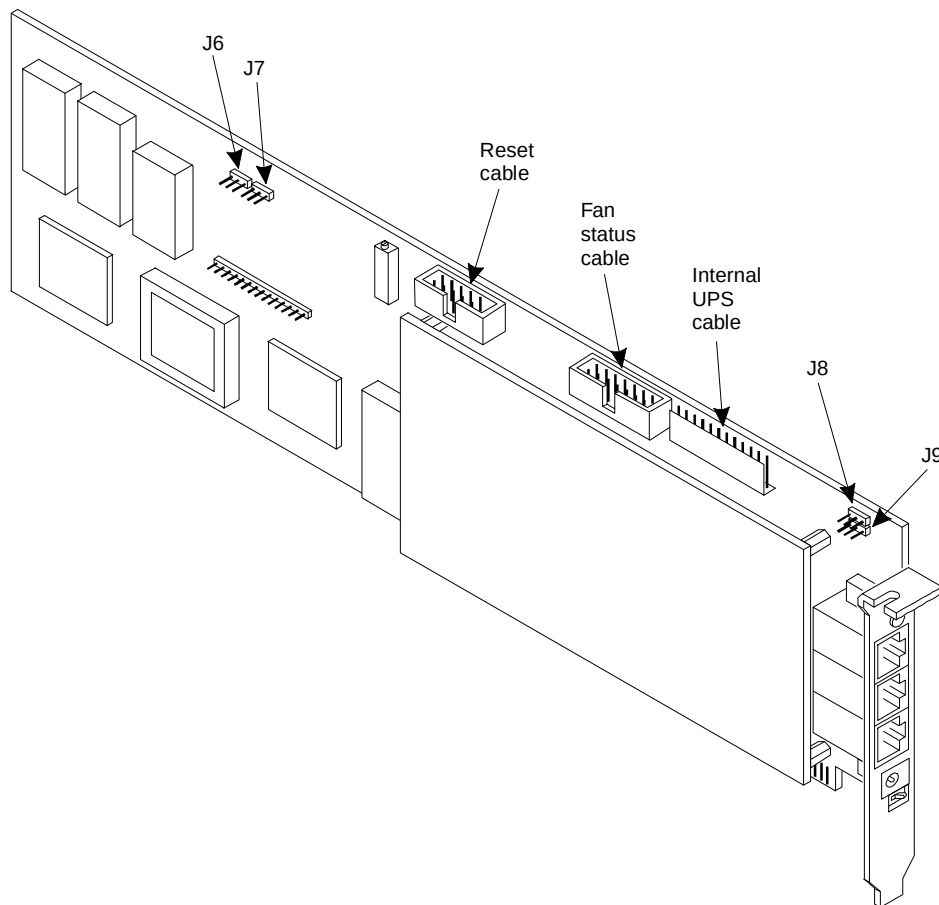


Figure D-24. Remote Maintenance Circuit Card

Jumper Settings on the Remote Maintenance Circuit Card

Figure D-25 shows the location of the four jumpers on the Remote Maintenance circuit card, J6, J7, J8, and J9. Ensure that a jumper is installed on pins 1 and 2 of each one as shown in Figure D-25.

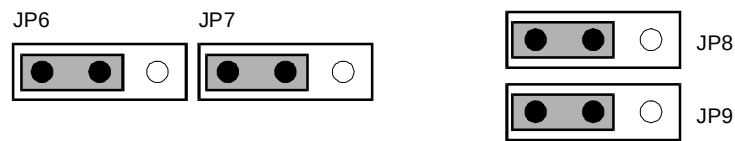


Figure D-25. Jumper Settings for the Remote Maintenance Circuit Card

Switch Settings on the Remote Maintenance Circuit Card

Figure D-26 shows the faceplate of the Remote Maintenance circuit card and an enlarged view of the BIOS Extension EPROM (BEE) enable switch. Ensure that this switch is set to the ON (default) position as shown.

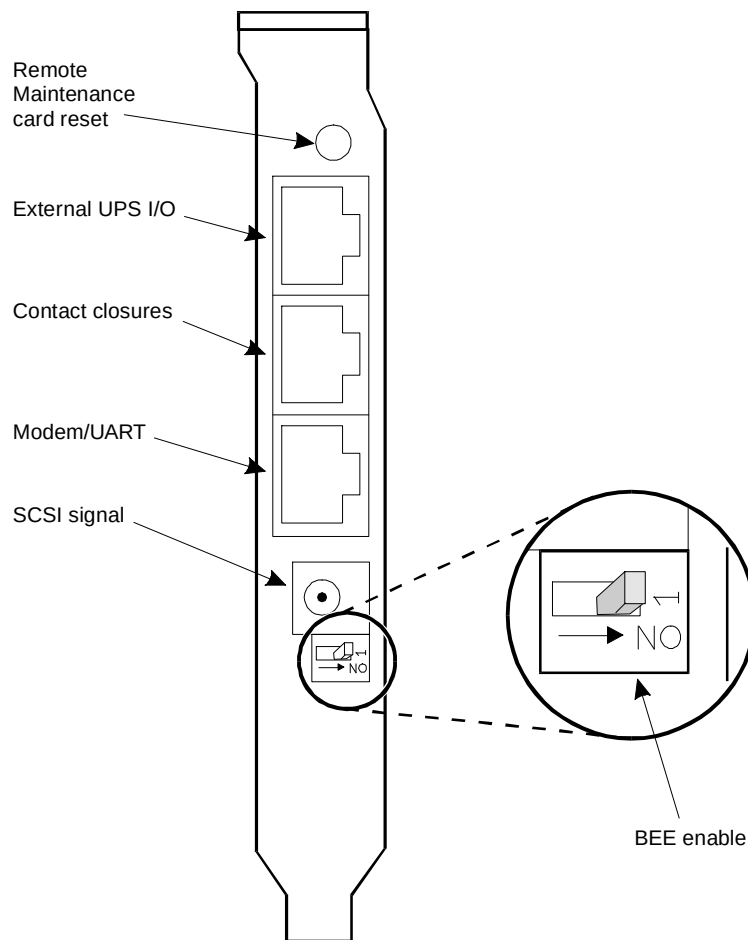


Figure D-26. Faceplate of the Remote Maintenance Circuit Card Showing the BEE Enable Switch

Pinouts for Remote Maintenance Circuit Card Connectors

The following tables show the pinouts for the various connectors on the Remote Maintenance circuit card. Figure D-24 and Figure D-26 show the locations of these connectors.

Table D-5. External and Internal UPS Status Signals

External UPS I/O	Internal UPS I/O	Signal Direction	Label	Description
1	9	Input	UPSchrgngB-P	UPS Fast Charging Battery - positive input
2	1	Input	UPSONB-P	UPS on Battery - positive input
3	2	Input	UPSONB-N	UPS on Battery - negative input
4	3	Input	UPSLwB-P	UPS has a Low Battery - positive input
5	4	Input	UPSLwB-N	UPS has a Low Battery - negative input
6	5	Input	UPSFI-P	UPS malfunction or overload - positive input
7	6	Input	UPSFI-N	UPS malfunction or overload - negative input
8	7	Output	UPSEPO-P	UPS Emergency Power Off - positive output. For UPS models with this feature, the UPS will shut off power to the platform.
9	8	Output	UPSEPO-N	UPS Emergency Power Off - negative output. For UPS models with this feature, the UPS will shut off power to the platform.
10	10	Input	UPSchrgngB-n	UPS Fast Charging Battery - negative input
N/A	11	Input	UPSchrgF-P	UPS Charge Fault- positive input
N/A	12	Input	UPSchrgF-N	UPS Charge Fault - negative input

Table D-6. Fan Status Signals

Pin	Label	Notes
1	Not Connected	
2	Not Connected	
3	Front Fan 4	Normal = -2.1V, Fault +0.77V
4	Not Connected	
5	Front Fan 2	Normal = -2.1V, Fault +0.77V
6	Front Fan 3	Normal = -2.1V, Fault +0.77V
7	Exhaust Fan	Normal = -2.1V, Fault +0.77V
8	Front Fan 1	Normal = -2.1V, Fault +0.77V
9	Power Fail	Not Connected to the Remote Maintenance circuit card
10	Power Supply Fan	Normal = -2.1V, Fault +0.77V
11	Ground	Not Connected to the Remote Maintenance circuit card
12	Ground	Not Connected to the Remote Maintenance circuit card
13	+12V	Not Connected to the Remote Maintenance circuit card
14	+5V	Not Connected to the Remote Maintenance circuit card

Table D-7. CPU Reset Signals

Pin	Label	Pin	Label
1	KBD Clk	2	Ground
3	KBD Clk	4	Not Connected
5	KBD Inhibit	6	Not Connected
7	+5V PWR	8	Not Connected
9	Reset	10	Ground

Table D-8. Contact Closures (Local Alarms)

RJ-68 Pin	Signal Direction	Description/Label
1	Output	Warning/Critical NPN Collector/Closure
2	Output	Major NPN Collector/Closure
3	Output	Major NPN Emiitter/Closure
4	Output	Minor NPN Collector/Closure
5	Output	Minor NPN Emitter/Closure
6	Output	Pulldown
7	Output	Pullup
8	Input	Remote Reset Positive
9	Input	Remote Reset Negative
10	Output	Warning/Critical NPN Emitter/Closure

IPC-900 or Gemini-1000 Asynchronous Card

Figure shows the IPC-900 or Gemini-1000 asynchronous serial card with its switches and jumper locations. Check and set the IRQ settings, I/O switches, and memory switches on the asynchronous card before installing it.

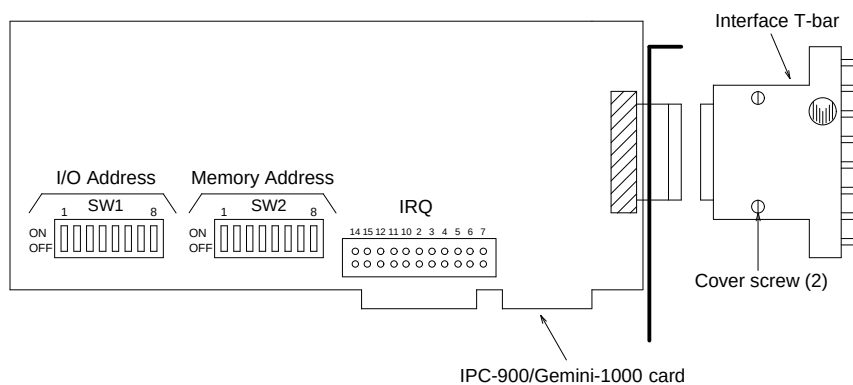


Figure D-27. IPC-900 or Gemini-1000 Asynchronous Card

Jumper Settings on the 8-Port IPC-900 or Gemini-1000 Asynchronous Serial Card

Figure D-28 shows the jumper settings on the 8-Port IPC-900 or Gemini-1000 asynchronous serial card.

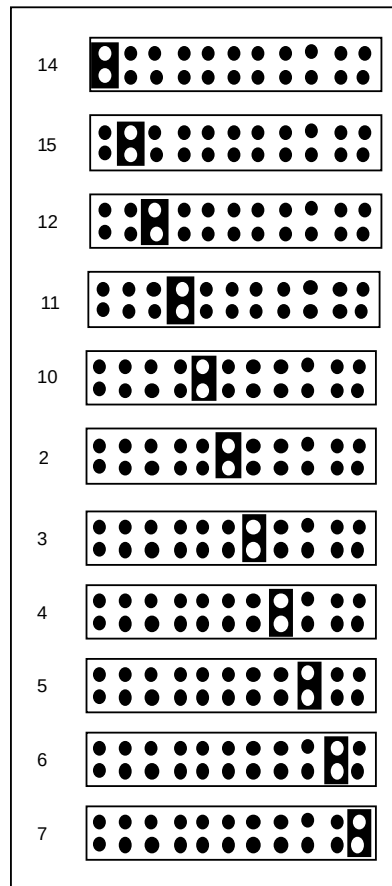


Figure D-28. Interrupt Jumper Settings for IPC-900 or Gemini-1000 Asynchronous Card

Switch Settings on the 8-Port IPC-900 or Gemini-1000 Asynchronous Serial Card

Figure D-29 and Figure D-30 show the switch settings on the 8-Port IPC-900 or Gemini-1000 asynchronous serial card.

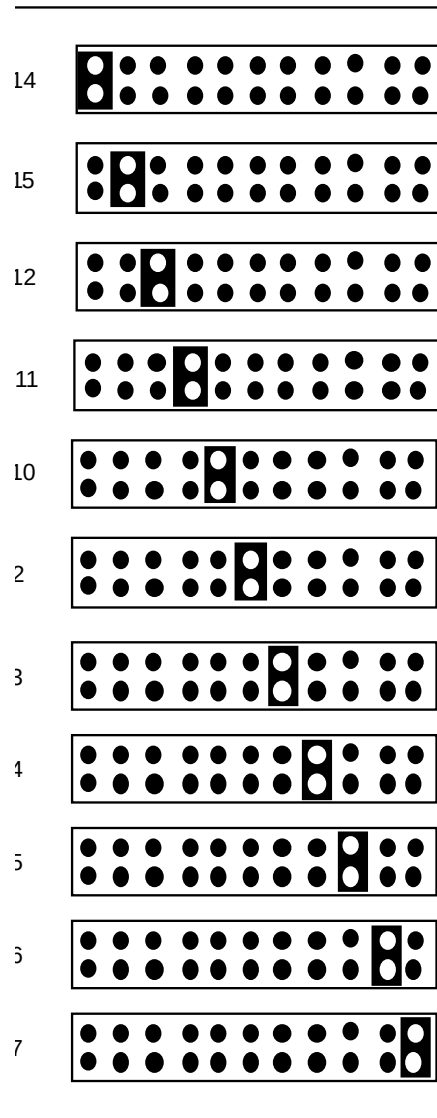


Figure D-29. Base I/O Address Settings for the IPC-900 or Gemini-1000 Asynchronous Card

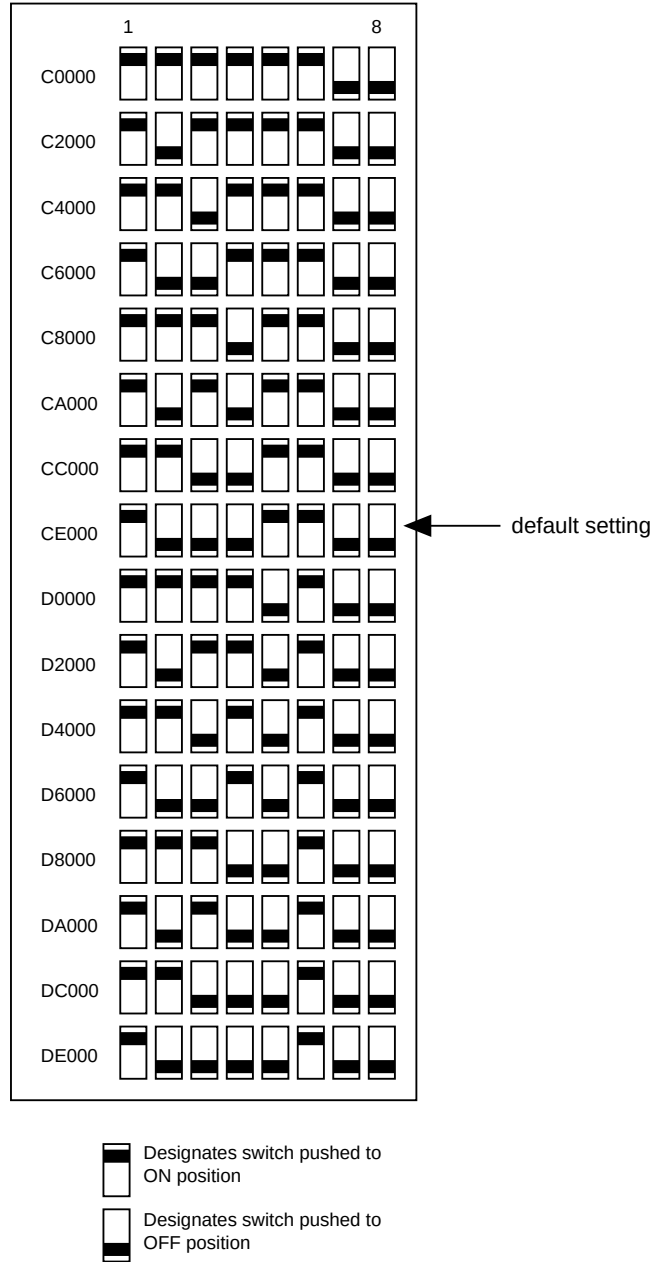


Figure D-30. Memory Address Settings for the IPC-900 or Gemini-1000 Asynchronous Card

PC/XL Synchronous I/O Card

Up to two PC/XL synchronous cards are supported in Version 4.0. The PC/XL communications card is shown in Figure D-31. The location of the switches and interrupt jumpers are identified.

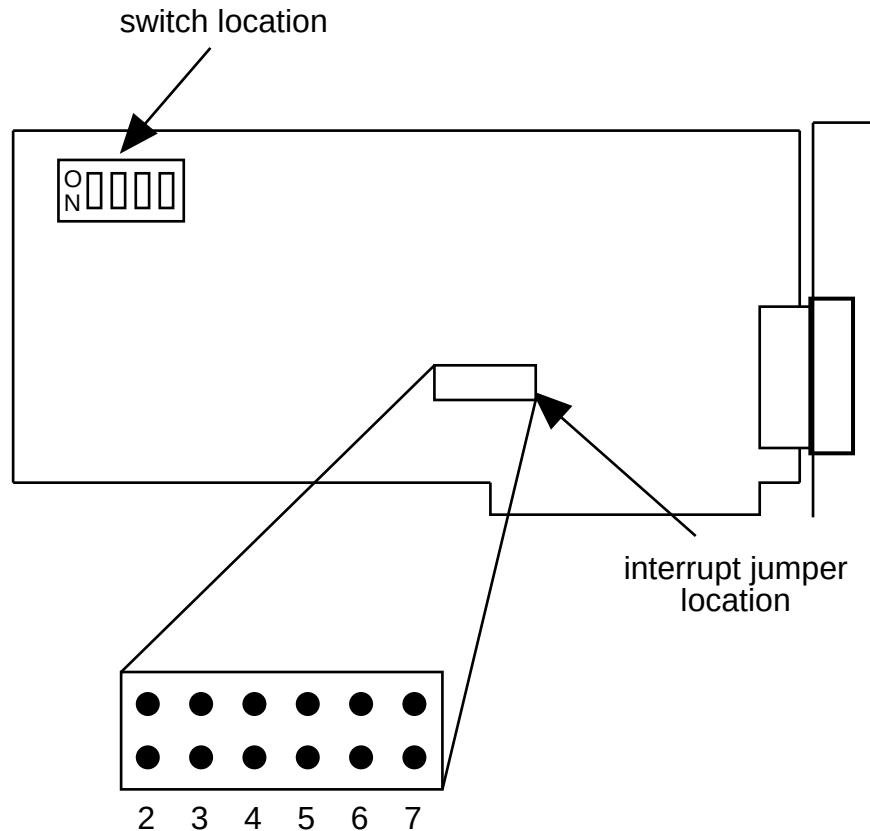


Figure D-31. PC/XL Synchronous I/O Card

Jumper and Switch Settings on the PC/XL Card

The interrupt request (IRQ) line enables the PC/XL to request service from the processor.

- Set the IRQ jumper to 5. This is the default setting.
- Make sure that no other device in the system uses the same interrupt line.

- If you are installing multiple PC/XL cards, set both of them to the same IRQ.

The input/output (I/O) address is the door through which the PC/XL accesses the PC data paths. Figure D-32 illustrates the I/O address settings.

- Set the I/O address dip switches (switches 1–3) to the default I/O address 200H.

NOTE:
Switch 4 is not used.

I/O address			
	1		4
0x200			
0x2A0			
0x2B0			
0x3A0			
0x3E0			

 Designates switch pushed to ON position

 Designates switch pushed to OFF position

Figure D-32. Base I/O Address Settings for PC/XL Card

The PC/XL card allows a portion of its on-card memory (RAM) to be accessed (both read and write) by the CPU. All transactions with the PC/XL card take place through this shared memory window (SMW).

The location of the SMW is set during 3270 software installation. Refer to the procedure “Installing the 3270 Software” in Chapter 4, “Installing Software For Optional Features,” of *Intuity CONVERSANT VIS V4.0 Software Installation*, 585-

350-111. The SMW is 16 Kbyte in size and may reside at any available 16 Kbyte boundary below 1 Mbyte. The location is controlled by software, so there are *no* jumpers to adjust for this aspect.

FAX Attendant Circuit Card

Figure D-33 shows the switch and jumper location on the FAX circuit card. The jumpers are in two locations: top center and bottom right. Neither J5 at the top center nor J11 in the middle of the bottom group is used.

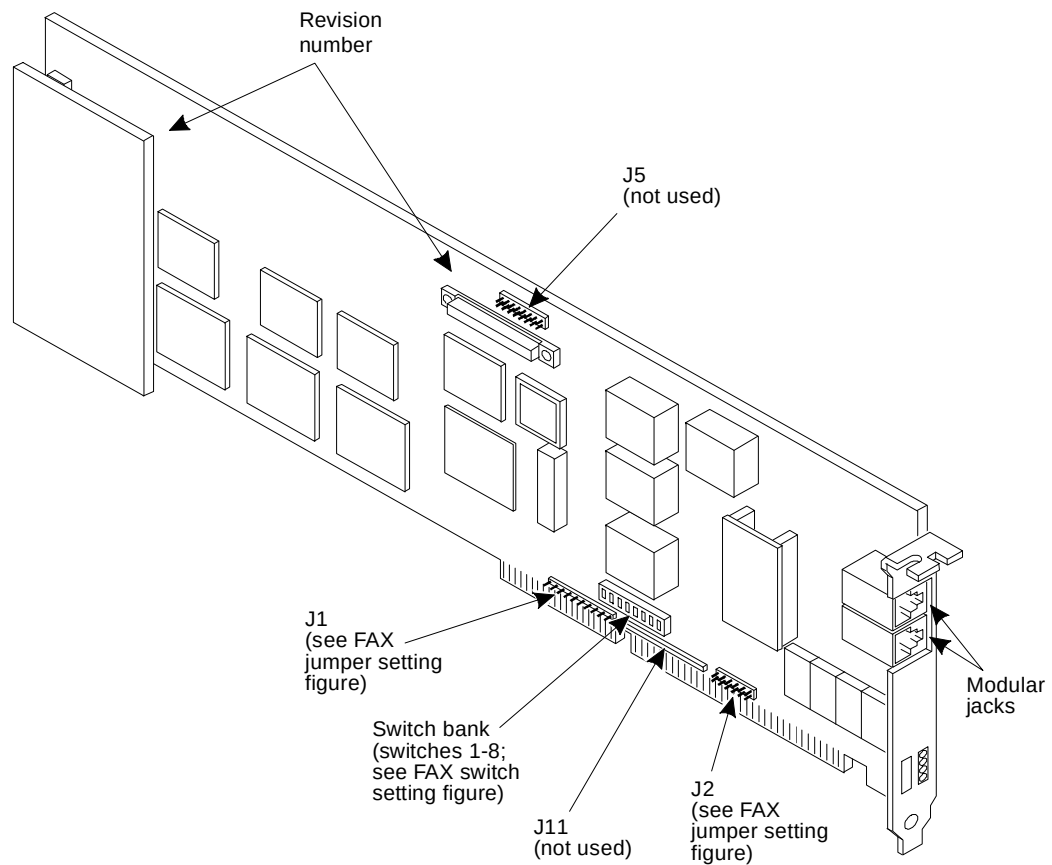


Figure D-33. FAX Circuit Card

Switches on the FAX Circuit Card

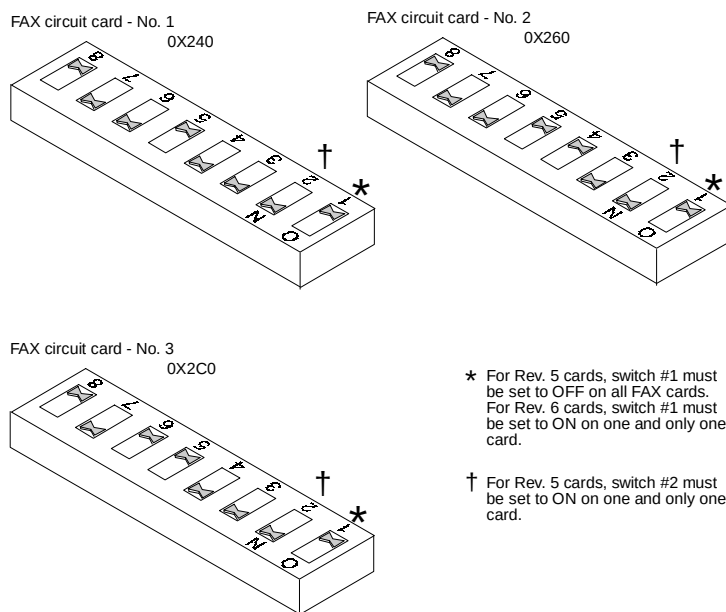
There are multiple versions of the FAX circuit card: revision 5, revision 6, and higher. The revision number is indicated on the card at one of the two locations shown in Figure D-33. Set the switches for all versions as shown in Figure D-34 unless otherwise instructed for those cards beyond revision 6, and observe the following:

- For revision 5 cards, switch #1 does not affect the I/O address and must be OFF on all FAX circuit cards. Switch #2 does not affect the base I/O address and must be ON *on one and only one* FAX circuit card.
- For revision 6 cards, switch #1 does not affect the base I/O address. It is used to pull up the TR114 interrupt line and must be ON *on one and only one* FAX circuit card in the system.



NOTE:

In Figure D-34, the first switch indicates settings for the first card installed, the second switch for the second card installed, and the third switch for the third card installed.



* For Rev. 5 cards, switch #1 must be set to OFF on all FAX cards. For Rev. 6 cards, switch #1 must be set to ON on one and only one card.

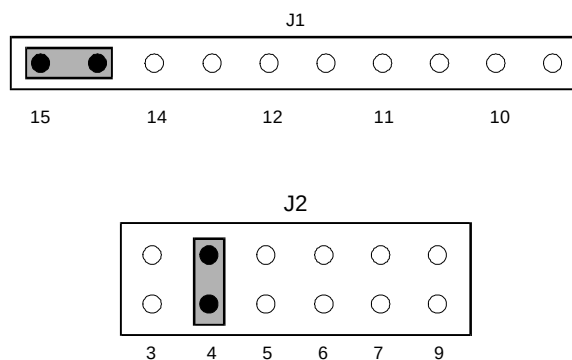
† For Rev. 5 cards, switch #2 must be set to ON on one and only one card.

Figure D-34. Switch Settings for the FAX Circuit Card

Jumpers on the FAX Circuit Card

Jumpers on the FAX circuit card are in two locations: top center and bottom right (Figure D-33). Neither J5 at the top center nor J11 in the middle of the bottom group is used.

Figure D-35 shows diagrams of J1 and J2. Interrupt numbers are indicated beneath the jumper blocks. In this example, J1 is set to 15 and J2 is set to 4. You must set the jumpers according to the output of the Configuration Program for the system you are installing.



Set jumpers according to the output of the configuration program for your system. This example shows interrupts set to 15 (J1) and 4 (J2).

Figure D-35. Sample Jumper Settings and Interrupt Numbers for the FAX Circuit Card

Local Area Network Cards

You can have at most one (1) networking card in a Version 4.0 configuration. It can be either an Ethernet or StarLAN card. The following sections detail the option settings for the Ethernet and the StarLAN cards.

Ethernet LAN Circuit Card

The ethernet card is shown in Figure D-36 and Figure D-38. Figure D-36 illustrates model BD-NP622A (comcode 406230573) along with the location and settings for all but the interrupt jumpers. Figure D-37 shows the settings for the interrupt jumpers for this model ethernet card.

Figure D-38 illustrates model BD-NP622A-XL (comcode 406972646). Switch and jumper settings are illustrated in Figure D-39 and Figure D-40.

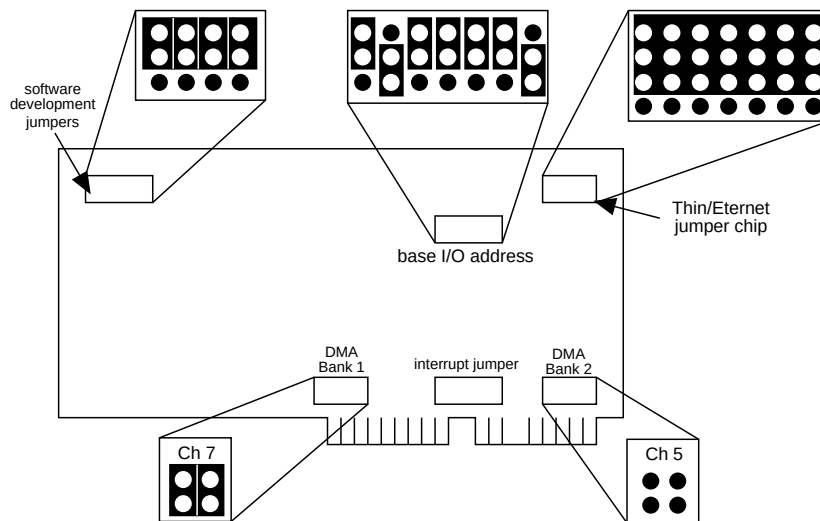


Figure D-36. Ethernet Card Jumper Locations - Model BD-NP622A (comcode 406230573)

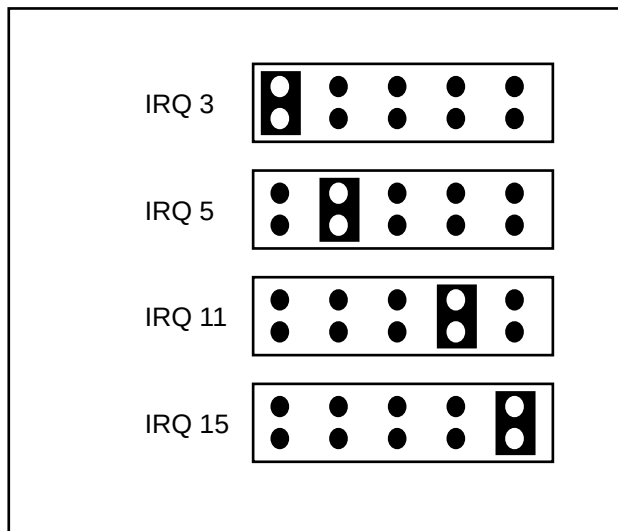


Figure D-37. Interrupt Option (IRQ) Settings on the Ethernet Card - Model BD-NP622A

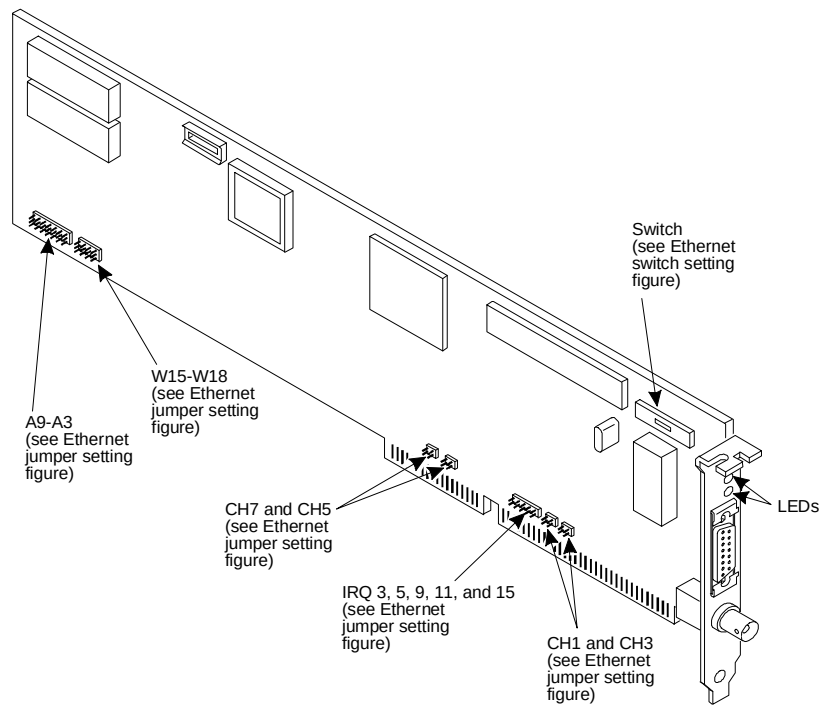


**Figure D-38. Ethernet Card and Jumper Locations - Model BD-NP622A-XL
(comcode 406972646)**

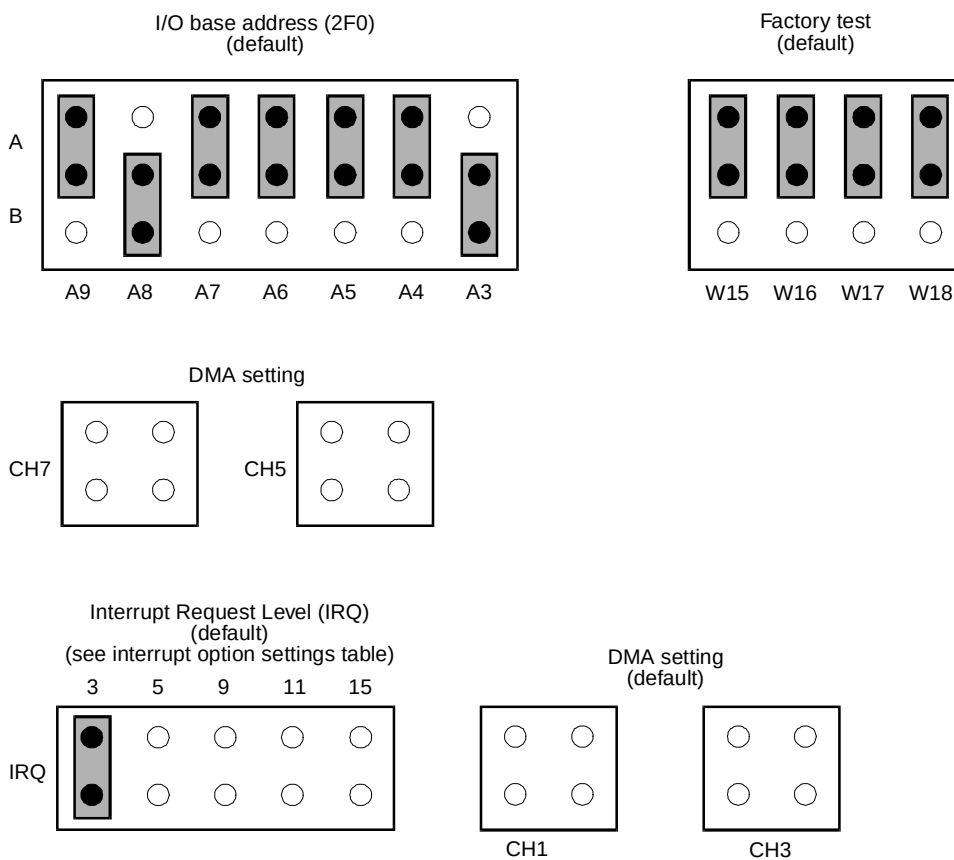


**Figure D-39. Jumper Settings for Ethernet Card - Model BD-NP622A-XL
(comcode 406972646)**

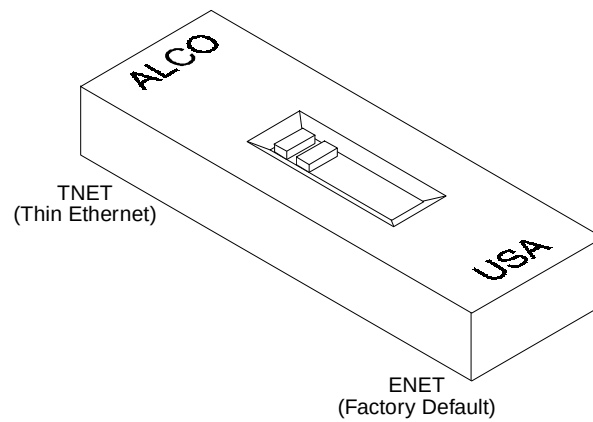


Figure D-40. Switch Setting for Ethernet Card - Model BD-NP622A-XL (comcode 406972646)

StarLAN Card Option Settings

The StarLAN card is shown in Figure D-41. Figure D-41 also illustrates the location of the jumpers. Figure D-42 shows the settings for the I/O address jumpers. Figure D-43 shows the settings for the interrupt jumpers. Figure D-44 shows the settings for the memory address jumpers.

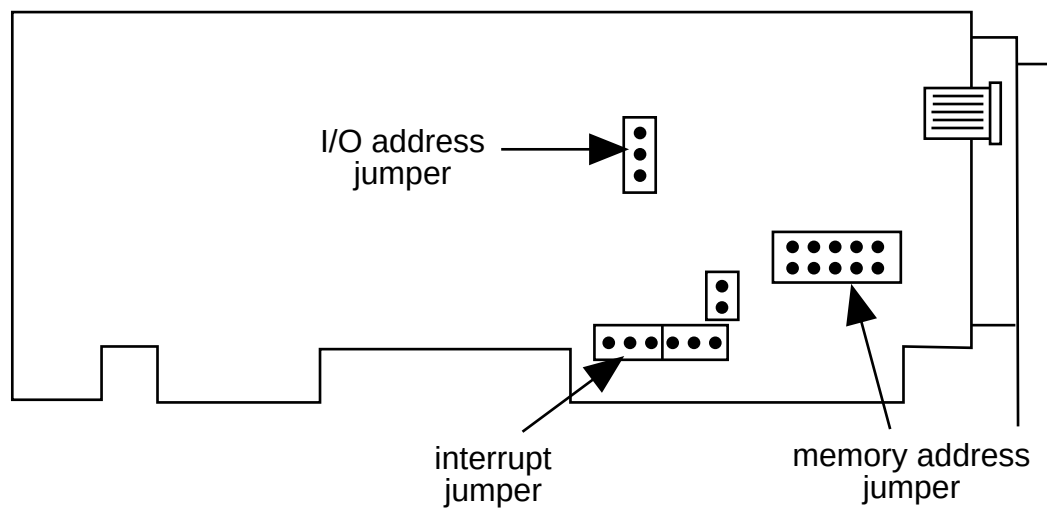


Figure D-41. StarLAN Card Jumper Locations

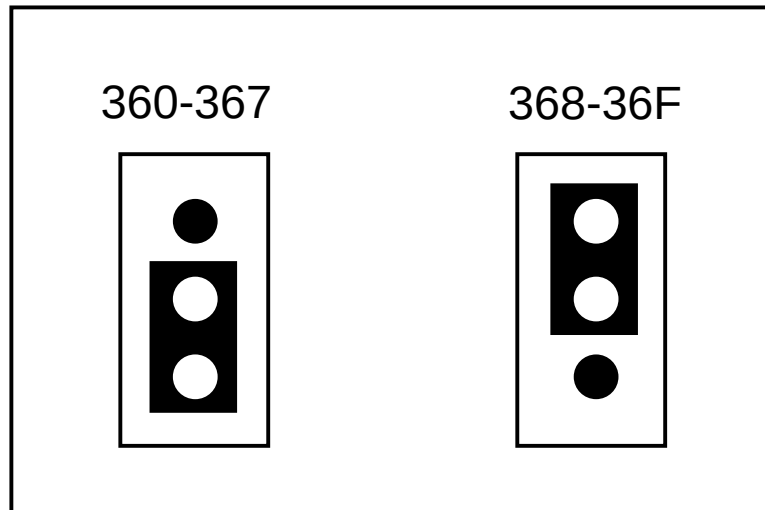


Figure D-42. Base I/O Address Jumper Settings for a StarLAN Card

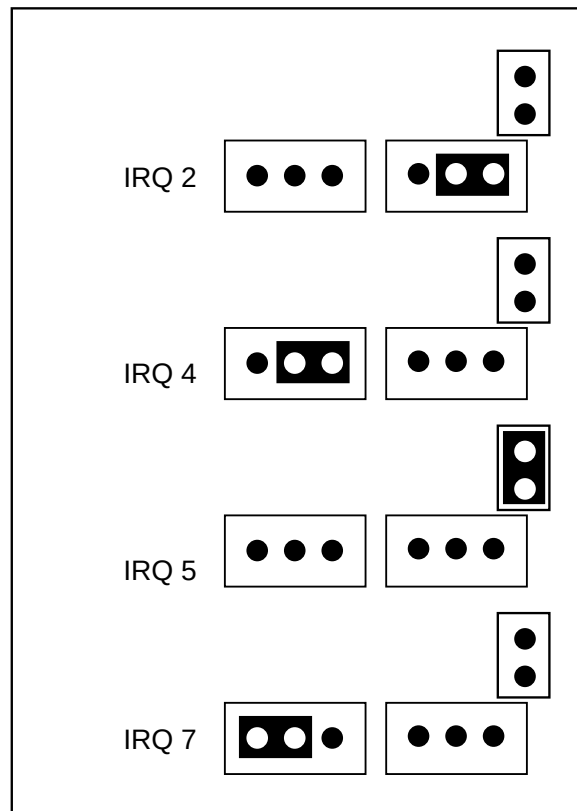


Figure D-43. Interrupt Jumper Settings for a StarLAN Card

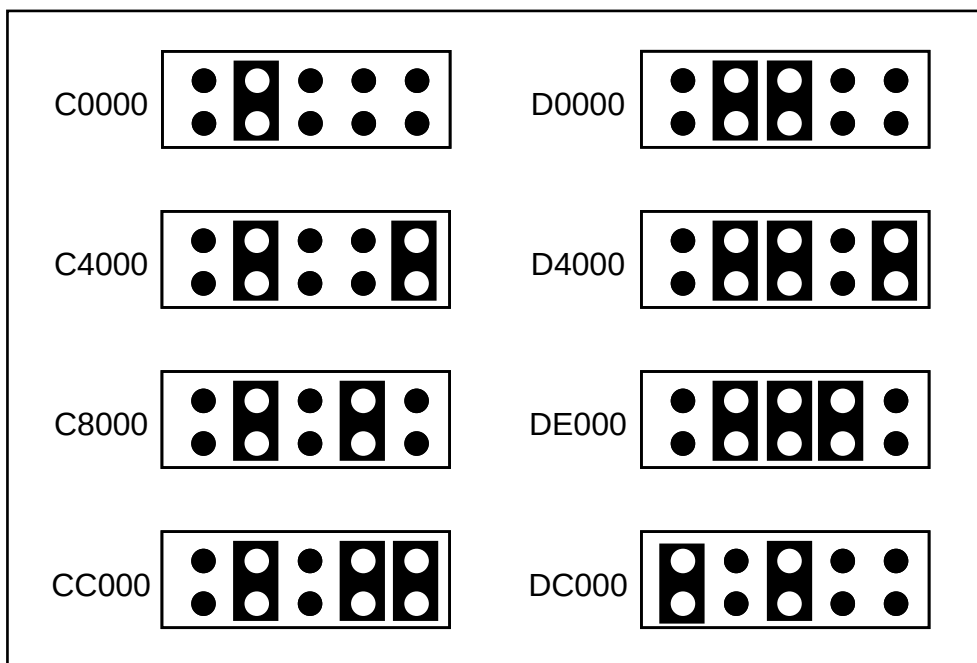


Figure D-44. Memory Address Jumper Settings for a StarLAN Card

PC/ISDN (IPCI) Circuit Card

The PC/ISDN circuit card supports the Adjunct/Switch Application Interface (ASAI).

➡ NOTE:

Other AT&T documentation may refer to this card as the IPCI card.

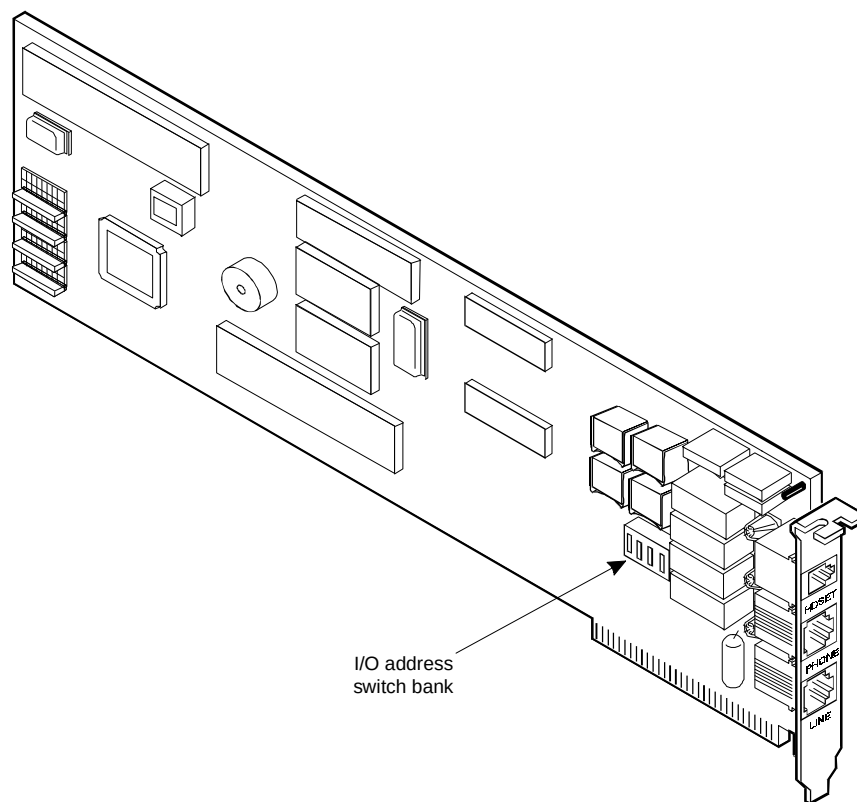


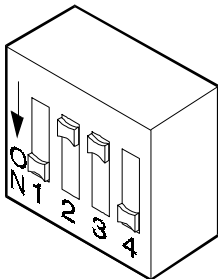
Figure D-45. PC/ISDN Circuit Card

Resource Settings on the PC/ISDN Circuit Card

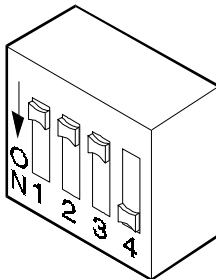
Figure D-45 shows the PC/ISDN circuit card with the location of its switches. Figure D-46 shows the switch settings.

There are no jumpers to set on the PC/ISDN circuit card.

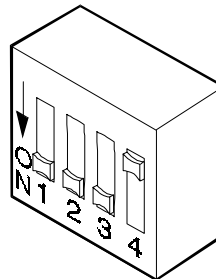
Base I/O address = 0c8000h



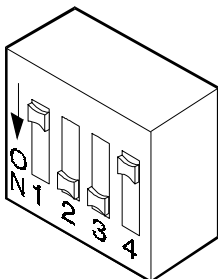
Base I/O address = 0cc000h



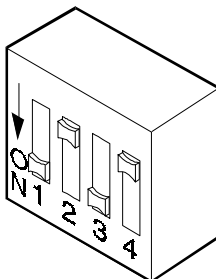
Base I/O address = 0d0000h



Base I/O address = 0d4000h



Base I/O address = 0d80000h



Base I/O address = 0dc000h

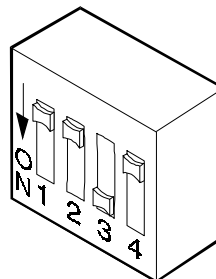


Figure D-46. PC/ISDN Circuit Card Address Settings

PC/PBX Interface Circuit Card

If your system is coresident with AUDIX Voice Power and directly interfaces with System 75 or DEFINITY G1/G2, you must install a PC/PBX interface circuit card.



NOTE:

Other AT&T documentation may refer to this card as the PC/PBX Platform or Expansion or Digital Communications Protocol (DCP) card.

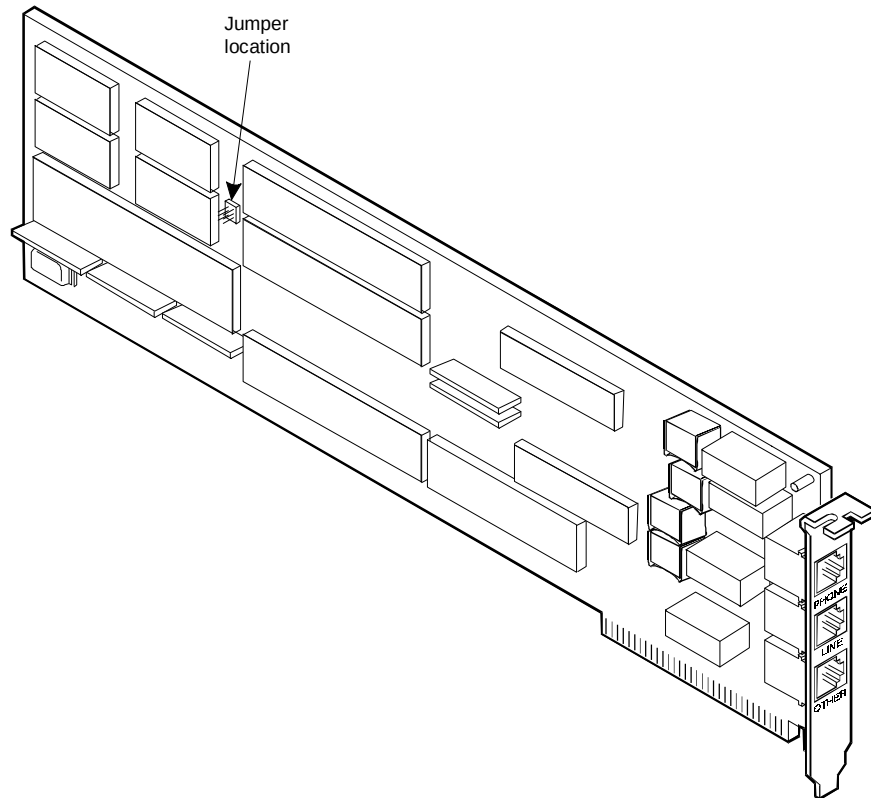


Figure D-47. PC/PBX Interface Circuit Card

Jumper Settings on the PC/PBX Interface Circuit Card

Jumpers on the PC/PBX Interface circuit card are preset at the factory. However, before you install these cards, ensure that the jumpers are set as shown in Figure D-48.

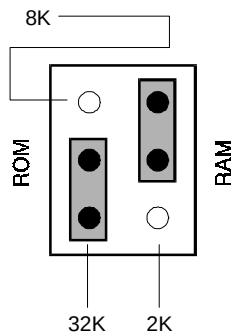


Figure D-48. Jumper Settings on the PC/PBX Interface Circuit Card

Switch Settings on the PC/PBX Interface Circuit Card

There are no switches to set on the PC/PBX Interface circuit card. Normally the IRQ is set to 2 and the I/O address is always 380. However, if you are using this card with the FAX Attendant feature, you must disable serial port 2 and select IRQ 3.

Tip/Ring Circuit Cards

This section lists the type of T/R circuit card you will install and describes how to set the resource options and place it in the backplane.

The T/R can be any of the following types:

- IVP6 (AYC28)
- IVP6 (AYC5 and/or AYC5B)
- IVP6-IU (AYC16)
- IVP6-IA (AYC26)
- IVP6-ID (AYC27)
- IVP4 (AYC6 and/or AYC6B)
- VRS6 (AYC1)

The following section covers the resource option settings each type of T/R card. Many of the figures referenced illustrate settings for more than one type of T/R card.

Setting the Resource Options

Switches

You must set *two* switch banks, A and B, for the following T/R circuit cards:

- VRS6 (AYC1) — see Figure D-49
- IVP6 (AYC5) — see Figure D-50
- IVP4 (AYC6) — see Figure D-51

You must set only *one* switch bank, B, for the following T/R circuit cards (see Figure D-52 and Figure D-53):

- IVP6 (AYC5B and/or AYC28)
- IVP4 (AYC6B)
- IVP6-IU (AYC16)
- IVP6-IA (AYC26)
- IVP6-ID (AYC27)

Jumpers

Jumpers on the IVP6 (AYC5) and IVP4 (AYC6) circuit cards are preset at the factory. However, before you install these cards, ensure that those settings are as shown in Figure D-50 and Figure D-51.

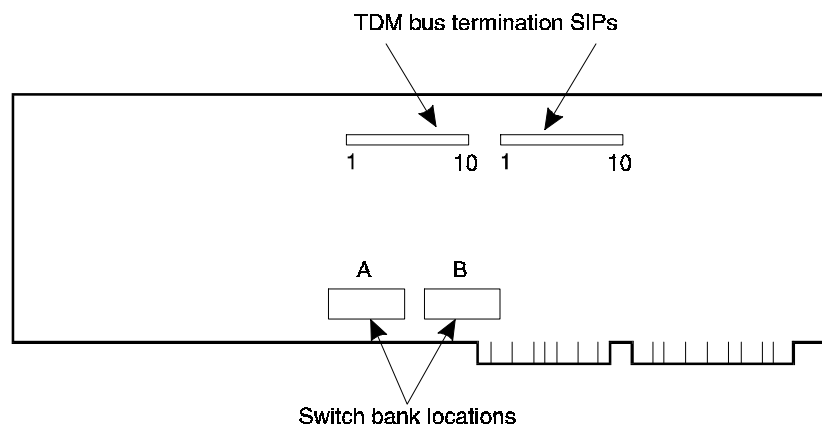


Figure D-49. Location of Switch Banks A and B on the VRS6 (AYC1) T/R Circuit Card

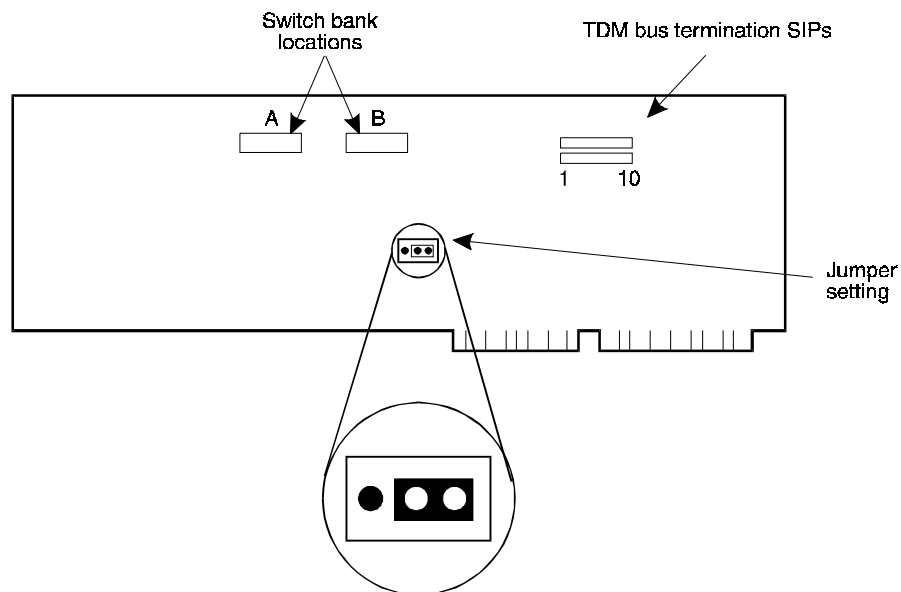


Figure D-50. Location of Switch Banks A and B and Jumpers on the IVP6 (AYC5) T/R Circuit Card

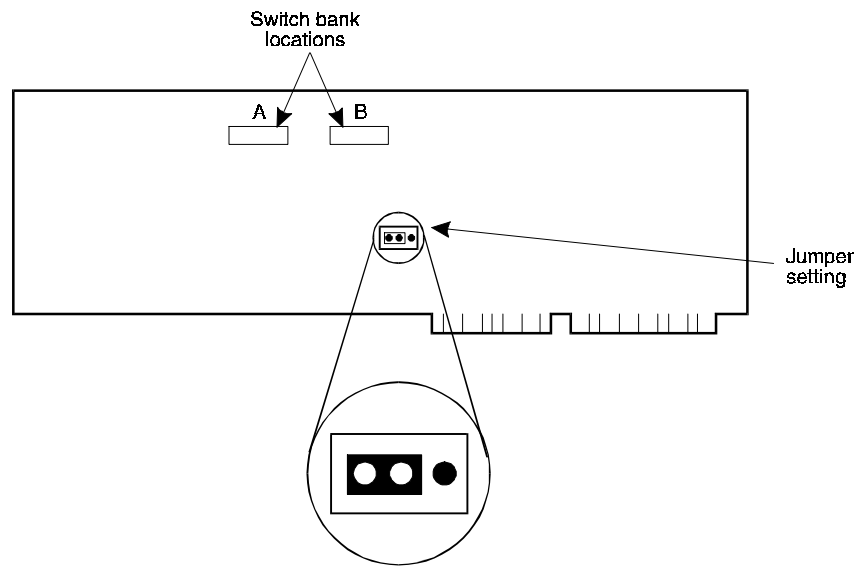


Figure D-51. Location of Switch Banks A and B and Jumpers on the IVP4 (AYC6) T/R Circuit Card

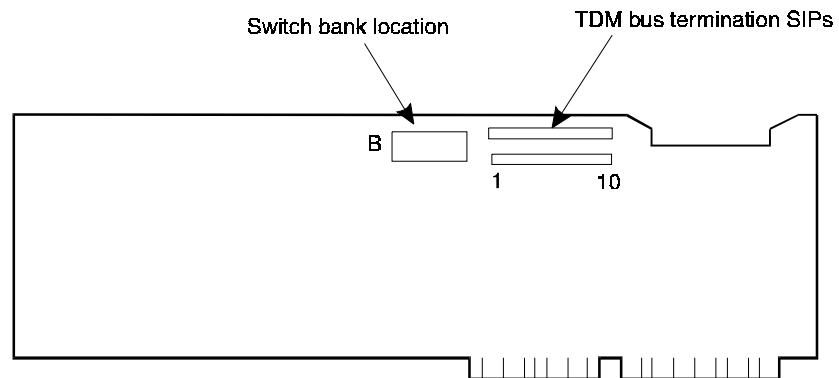


Figure D-52. Location of Switch Bank B on the IVP6 (AYC5B and AYC28), IVP4 (AYC6B), IVP6-IU (AYC16), IVP6-IA (AYC26), and IVP6-ID (AYC27) T/R Circuit Cards

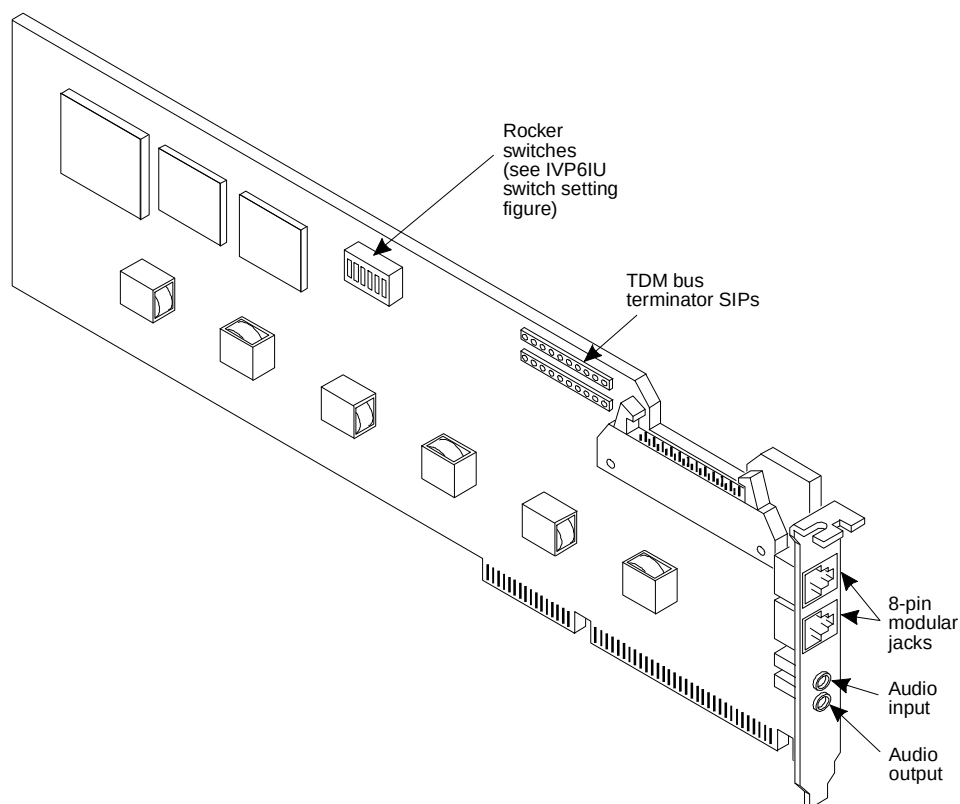


Figure D-53. Layout of the IVP6-IU (AYC16), IVP6-IA (AYC26), IVP6-ID (AYC27), and IVP6 (AYC28) T/R Circuit Cards

Setting Switch Bank A for Network Impedance Matching



NOTE:

This section applies to the following T/R card *only*.

- VRS6 (AYC1)
- IVP4 (AYC6)
- IVP6 (AYC5)

For the remaining types of T/R cards, network impedance matching is accomplished by software instructions. See *CONVERSANT VIS Version 4.0 Operations*, 585-350-703, for further information.

The six switches on Switch Bank A adjust the termination impedance that each T/R interface presents to the network. This adjustment is sometimes necessary

to ensure an adequate impedance match between the network and the telephone hybrid on the T/R card.

Switches one (1) through six (6) on Switch Bank A correspond to channels 0-5, respectively, on each T/R card.

Figure D-54 shows the correct setting for the VRS6 (AYC1) circuit card, that is equipped with rocker switches. Figure D-55 shows the correct setting for the IVP6 (AYC5) and IVP4 (AYC6) circuit cards, that are equipped with slide switches.

In general, you should leave all switches on Switch Bank A in the factory default "OPEN" position. If the system shows problems such as not recognizing touch tones, touch-tone simulation by outgoing speech (speech abruptly stops during playback), or unreliable detection of touch tones during playback (playback does not stop when a touch tone is entered), moving the switch that corresponds to the channel exhibiting the conditions to the "CLOSED" position may solve the problem.

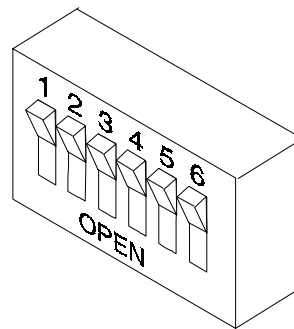


Figure D-54. Setting for Switch Bank A on the VRS6 (AYC1) T/R Circuit Card

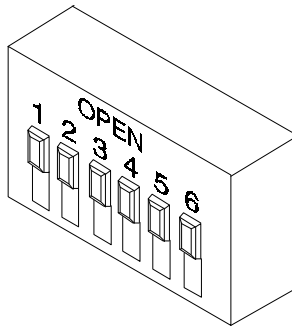


Figure D-55. Setting for Switch Bank A on the IVP6 (AYC5) and the IVP4 (AYC6) T/R Circuit Card

Setting Switch Bank B for Circuit Card Allocation

Each T/R card in the system must have a unique address. To set these addresses, set switch Bank B as shown in Figure D-56 and Figure D-57, where "T/R 0" denotes the first T/R circuit card you are installing, "T/R 1" denotes the second card, and so on.

Figure D-56 shows the correct setting for the following T/R card types that are equipped with rocker switches:

- VRS6 (AYC1)
- IVP6 (AYC5B and AYC28)
- IVP4 (AYC6B)
- IVP6-IU (AYC16)
- IVP6-IA (AYC26)
- IVP6-ID (AYC27)

Figure D-57 shows the correct setting for the IVP6 (AYC5) and IVP4 (AYC6) circuit cards, that are equipped with slide switches.

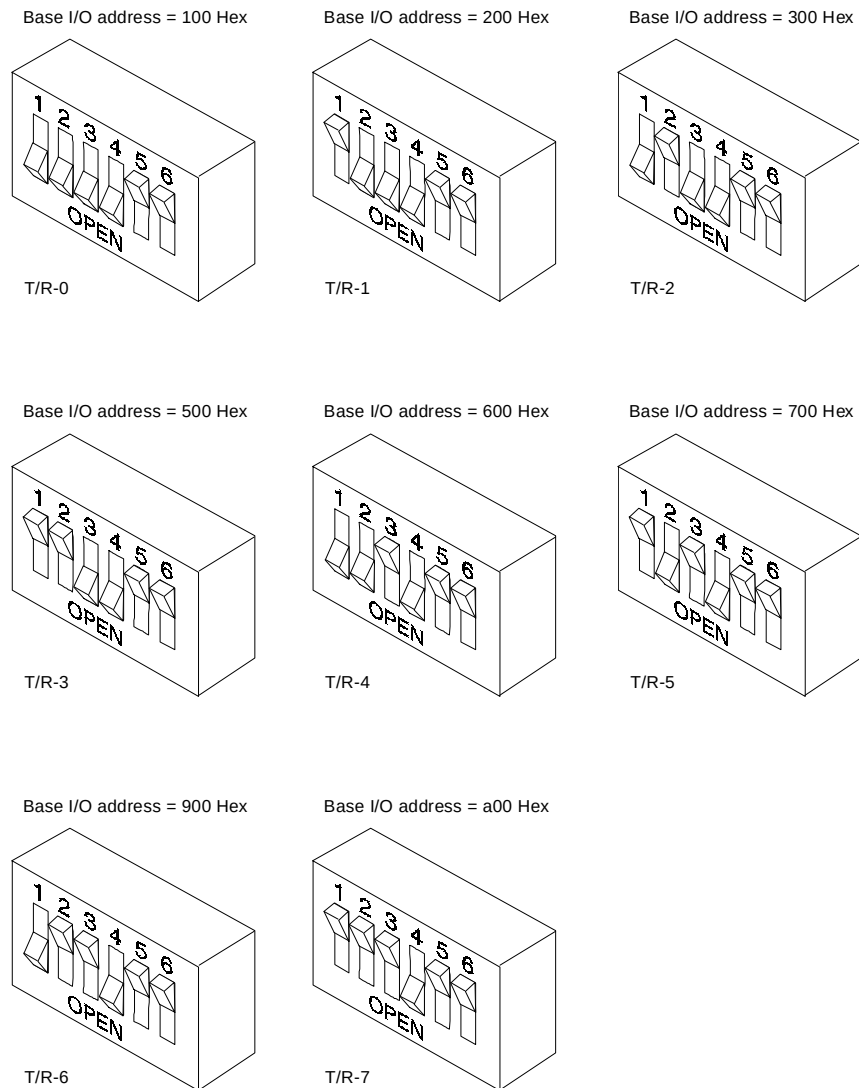
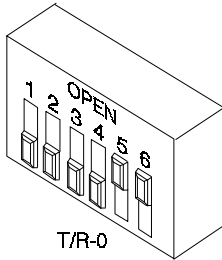
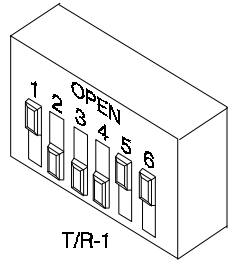


Figure D-56. Settings for Switch Bank B on the IVP4 (AYC6B), IVP6 (AYC5B and AYC28), IVP6-IU (AYC16), IVP6-1A (AYC26), IVP6-ID (AYC27), and VRS6 T/R Circuit Cards T/R-0 through T/R-7

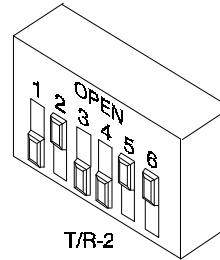
Base I/O address = 100 Hex



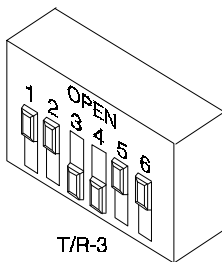
Base I/O address = 200 Hex



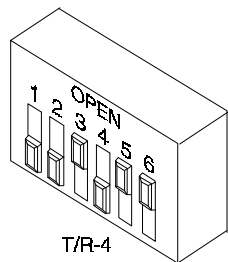
Base I/O address = 300 Hex



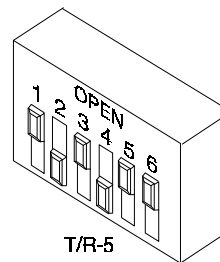
Base I/O address = 500 Hex



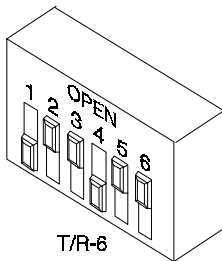
Base I/O address = 600 Hex



Base I/O address = 700 Hex



Base I/O address = 900 Hex



Base I/O address = a00 Hex

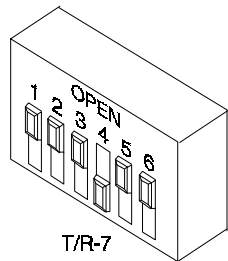


Figure D-57. Settings for Switch Bank B on the IVP4 (AYC6) and the IVP6 (AYC5) T/R Circuit Cards T/R-0 through T/R-7

T1 Circuit Card

The AYC3B version of the T1 card is shown in Figure D-58. The AYC11 version of the T1 card is shown in Figure D-59.

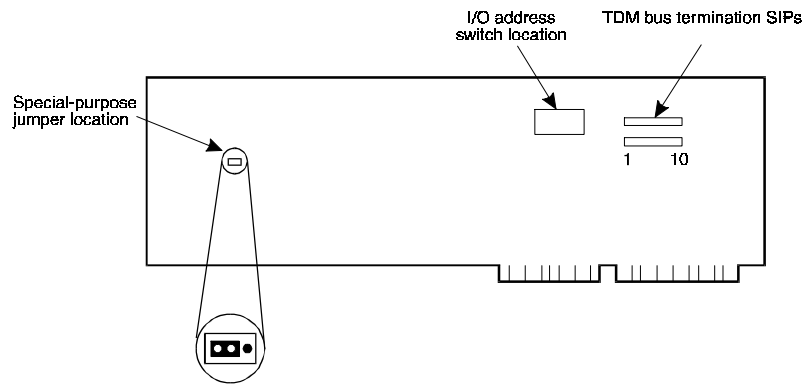


Figure D-58. AYC3B T1 Card

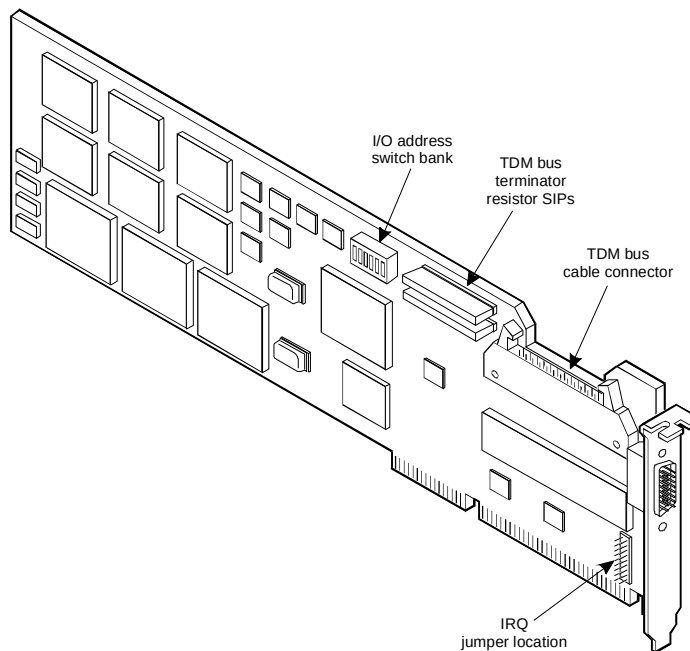


Figure D-59. T1 AYC11 Card

Jumper and Switch Settings on the T1 Circuit Card

Set the switch and jumper settings (resource options) prior to installing the card using the figures on the following pages. There is one jumper and one set of switches that must be set on the T1 circuit cards. Figure D-60 shows the location and correct setting of the jumpers. Figure D-61 shows the only **valid** switch settings for T1-0 through T1-4.

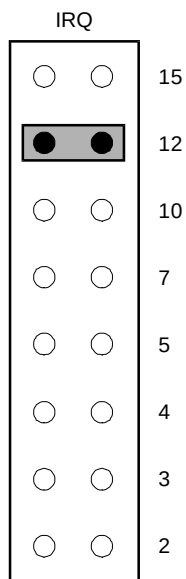
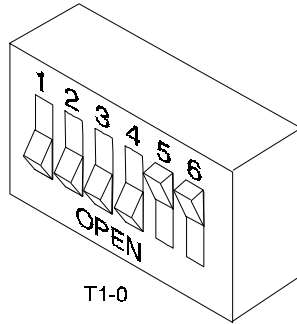


Figure D-60. Jumper Settings

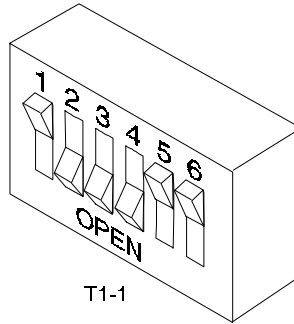
Base I/O address = 220 Hex

OS-Index = 0



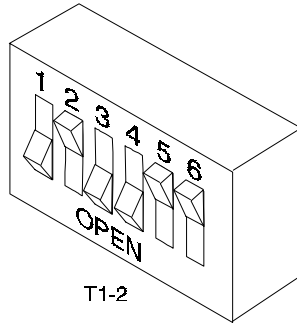
Base I/O address = 222 Hex

OS-Index = 1



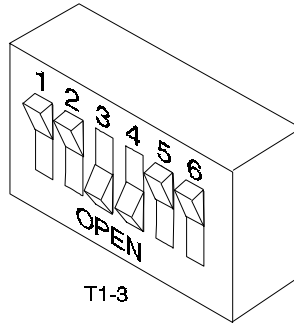
Base I/O address = 224 Hex

OS-Index = 2



Base I/O address = 226 Hex

OS-Index = 3



Base I/O address = 228 Hex

OS-Index = 4

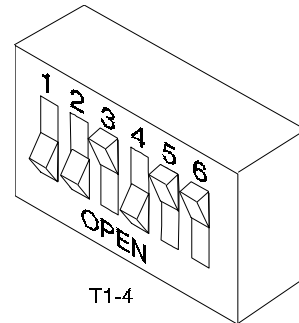


Figure D-61. T1-0 through T1-4 Switch Settings

E1 Circuit Card

The AYC21 version of the E1 card is shown in Figure D-62.

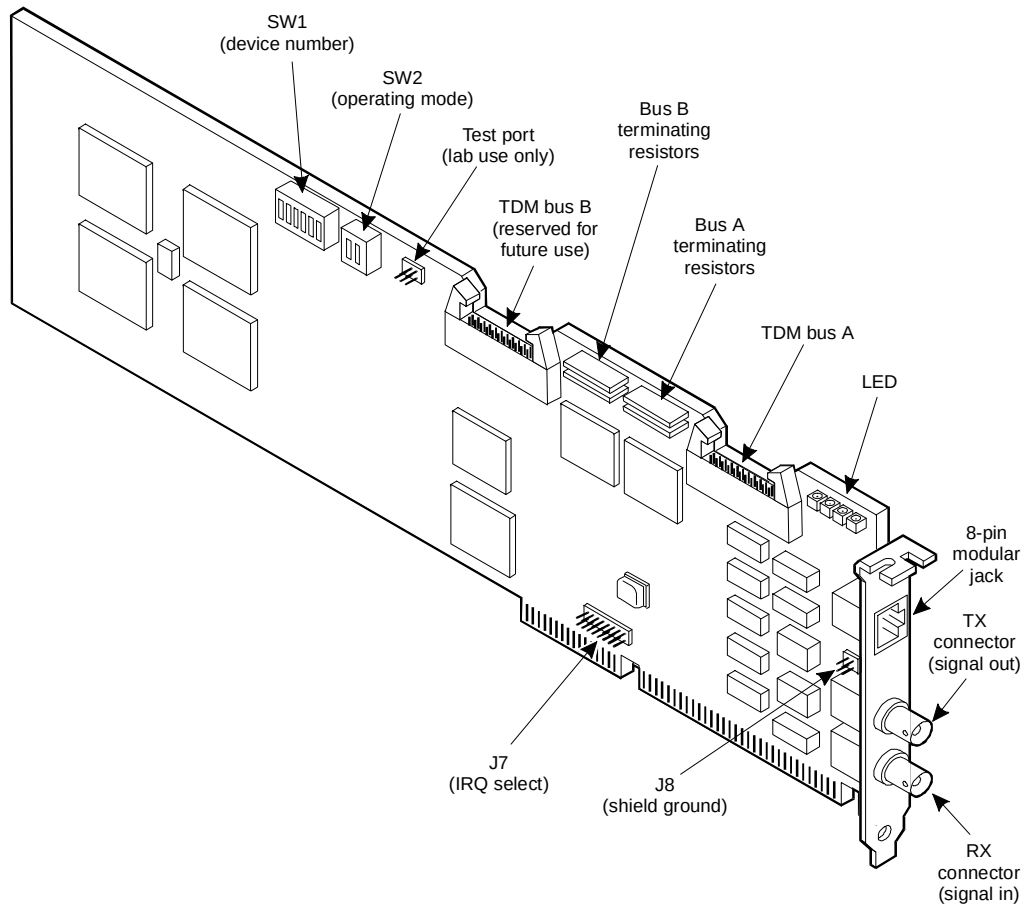


Figure D-62. E1 AYC21 Card

Jumper and Switch Settings on the E1 Circuit Card

Set the switch and jumper settings (resource options) prior to installing the card using the figures on the following pages. There is one jumper and one set of switches that must be set on the E1 circuit cards. Figure D-63 shows the location and correct setting of the jumpers. Figure D-64 and Figure D-65 show the correct switch settings.

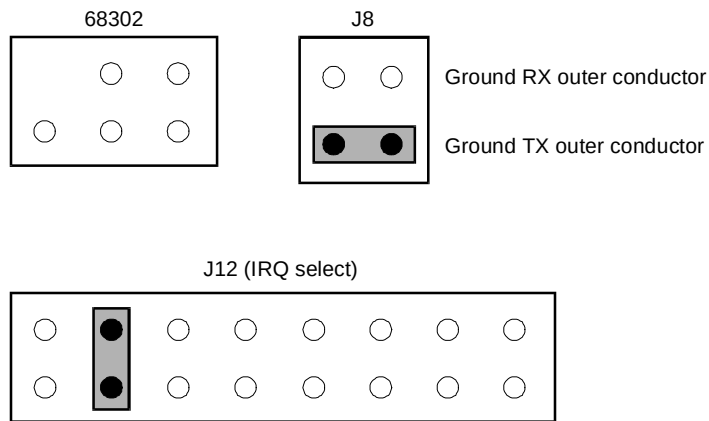


Figure D-63. AYC21 Jumper Settings

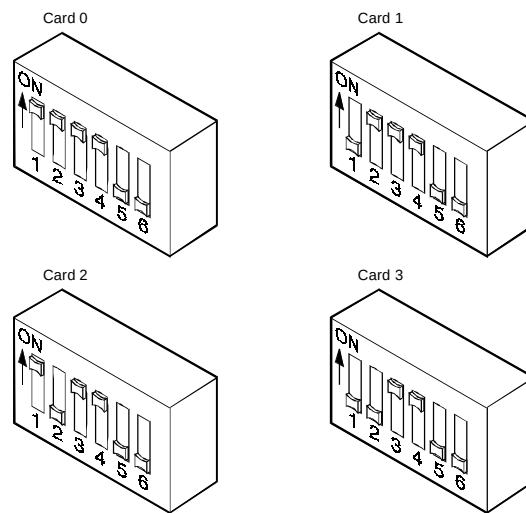


Figure D-64. AYC21 Device Number Switch Settings

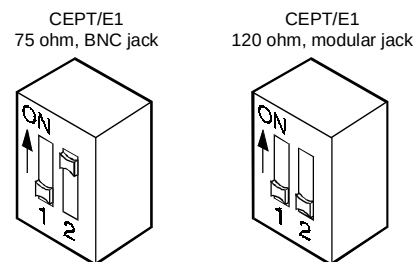


Figure D-65. AYC21 Operating Mode Switch Settings

Signal Processor Circuit Card

The SP circuit cards can be any of the following types:

- AYC2B
- AYC2C
- AYC9

Switches

You must set one bank of switches on the SP circuit card. Locate the switch bank on the SP card:

- AYC2B — see Figure D-66
- AYC2C and AYC9 — see Figure D-67

Set the switches as shown in Figure D-68 for the correct I/O address switch settings for cards SP-0 through SP-7.

Notice in Figure D-68 that the switches are numbered one (1) through six (6). Switch 1 is a no-option switch. This means its setting is not important. The figure shows this switch as open, but it does not matter if it is open or closed. Switch 2 must be closed. Switch 3 must be open. Figure D-68 also displays the OS index number for the corresponding switch settings. CONVERSANT uses this index to identify each SP card.

Jumpers

The two jumpers on the AY2B SP circuit card are preset at the factory. However, before you install these cards, ensure that the jumpers are set as shown in Figure D-66.

There are no jumpers on the AYC2C and AYC9 SP circuit cards.

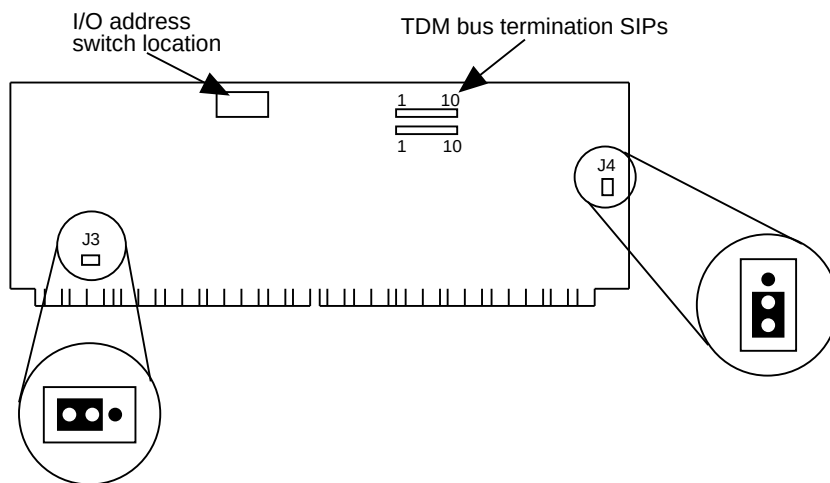


Figure D-66. Location of Jumpers and Switches on the Signal Processor Circuit Card (ACY2B only)

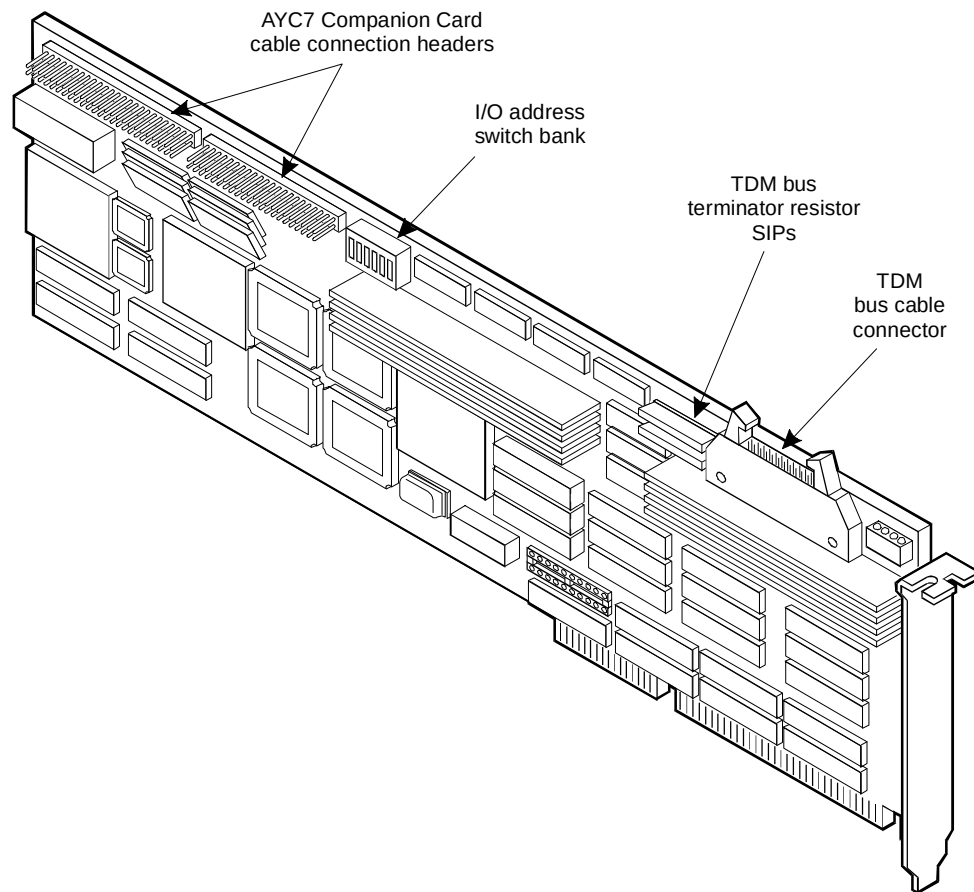
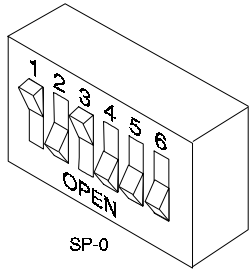
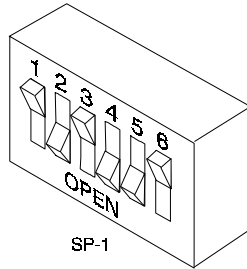


Figure D-67. Signal Processor (AYC2C or AYC9) Circuit Card

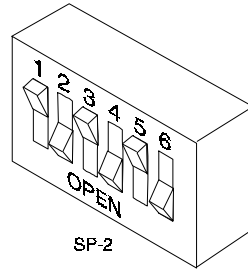
Base I/O address = 120 Hex
Base Physical RAM Address = C00000 Hex
OS-Index = 0



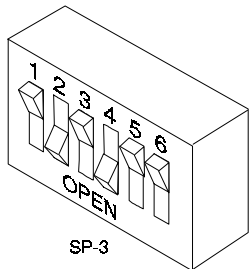
Base I/O address = 124 Hex
Base Physical RAM Address = C80000 Hex
OS-Index = 1



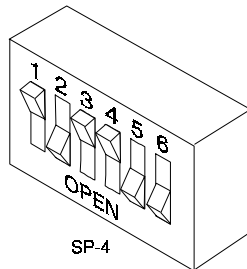
Base I/O address = 128 Hex
Base Physical RAM Address = D00000 Hex
OS-Index = 2



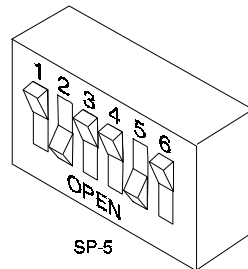
Base I/O address = 12C Hex
Base Physical RAM Address = D80000 Hex
OS-Index = 3



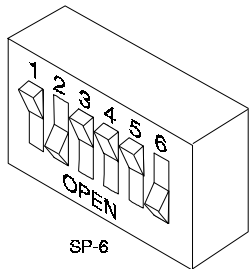
Base I/O address = 130 Hex
Base Physical RAM Address = E00000 Hex
OS-Index = 4



Base I/O address = 134 Hex
Base Physical RAM Address = E80000 Hex
OS-Index = 5



Base I/O address = 138 Hex
Base Physical RAM Address = F00000 Hex
OS-Index = 6



Base I/O address = 13C Hex
Base Physical RAM Address = F80000 Hex
OS-Index = 7

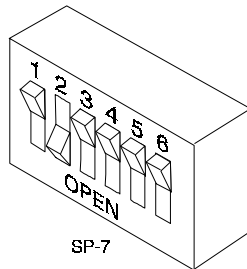


Figure D-68. Switch Settings for Signal Processor Circuit Cards (AYC2B, AYC2C, and AYC9) SP-0 through SP-7

Companion Circuit Card

The Companion (CMP) circuit card is an extension of the Signal Processor and is connected by its own special bus. The Companion card gets only power from the backplane. All the signal interfaces come from the SP card. If only one Companion card is attached to an SP, it must be located in the slot next to the SP. There cannot be an empty slot between the SP and the CMP. Up to eight (8) CMP cards are supported.

NOTE:

An SP may be configured to support at most two (2) CMP cards. The CMP(s) connected to the SP(s) always must start addressing with card 0. For example, if there are four SPs, each with one CMP, each CMP will be addressed as card 0.

The CMP card is used only in speech recognition applications. Refer to *CONVERSANT VIS Whole Word Speech Recognition*, 585-350-813, and *CONVERSANT VIS Flex Word Speech Recognition*, 585-350-814.

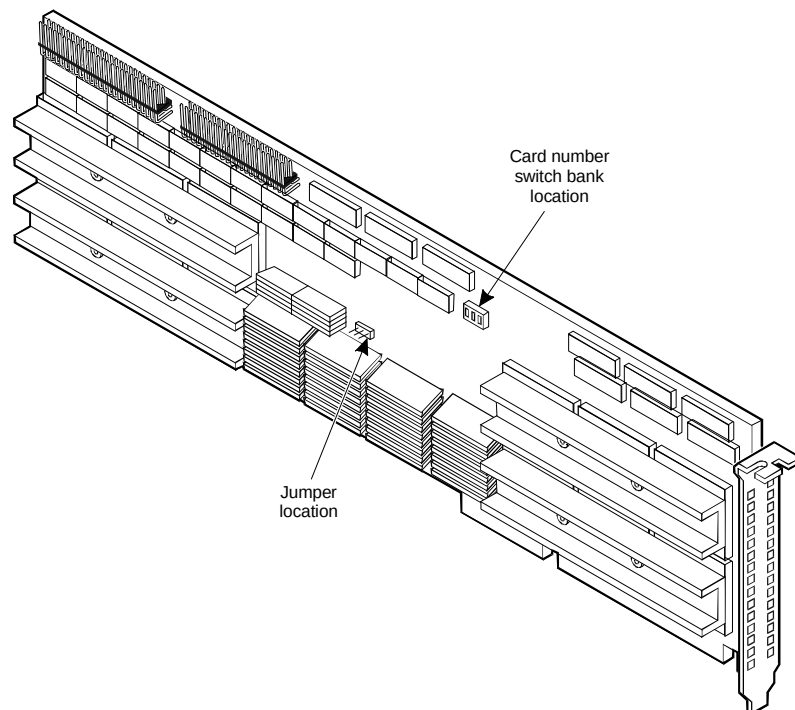


Figure D-69. Companion Card Jumper and Switch Locations

Jumper Settings on the Companion Circuit Card



Figure D-70. Companion Card Jumper Setting

Switch Settings on the Companion Circuit Card

The companion card is shown in Figure D-69 with the location of its jumper and switches. The required switch settings are shown in Figure D-71.

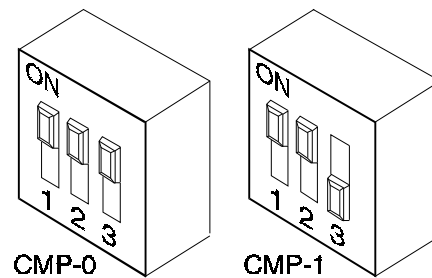


Figure D-71. Companion Card 0 and 1 Switch Settings

External Alarms Interface Relay Circuit Card

The MAP/100C accommodates an External Alarms Interface Relay circuit card (Figure D-72) for support of the External Alarms Interface feature.

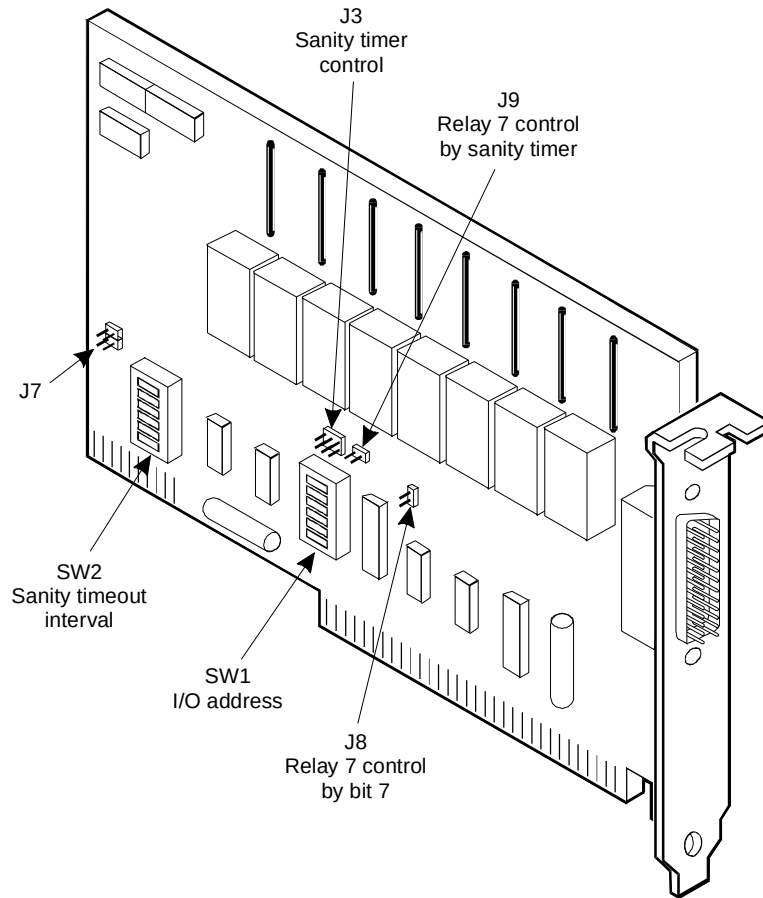


Figure D-72. External Alarms Relay Interface Circuit Card

Setting the Resource Options

Switch and jumper settings are shown below.

Switches

Figure D-72 shows the location of switches S1 and S2 on the External Alarms Relay Interface circuit card.

Setting S1

S1 sets the I/O address; that is, the means by which the CPU accesses the External Alarms Relay Interface card. Figure D-73 shows the setting for S1.

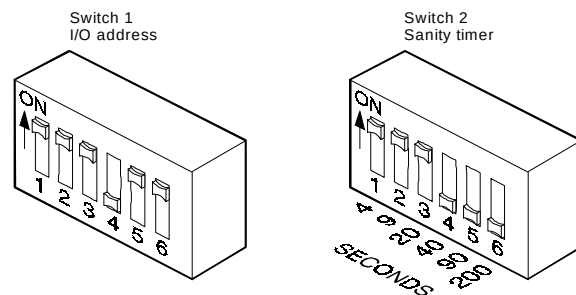


Figure D-73. External Alarms Relay Interface Circuit Card Switch Settings

Setting S2

S2 sets the sanity timer for the External Alarms Relay Interface card. The sanity time-out interval is the sum of all the S2 switches that are set to ON. As shown in Figure D-73, you must set switches 1, 2, and 3 to ON to create a time-out interval of 33 seconds (that is, the sum $4 + 9 + 20$ seconds).

Jumpers

Figure D-72 shows the location of the four jumpers on the External Alarms Relay Interface circuit card, J3, J7, J8, and J9.

Setting J3

J3 controls the time-out behavior for the sanity timer. When the jumper is in position

- A, the sanity timer is disabled
- B (the default), the output relay is controlled by the latched time-out signal (the sanity alarm remains active until the system problem is corrected)
- C, the output relay is controlled by the pulsed time-out signal, the duration of which is half the time-out period

Set J3 to the default position for normal use, that is, if you want the output relay to be controlled by the latched time-out signal. Figure D-74 shows this position.

Setting J7

The J7 jumper block is an external connect jumper and is not used for the External Alarms Interface feature. Ensure that *J7 is not set* on the card.

Setting J8 and J9

Ensure that jumper locations 8 and 9 are set to the default position, that is, with a jumper on J9 and no jumper on J8, as shown in Figure D-74. In this default position, Relay 7 is controlled by the sanity timer.

NOTE:

Relay 7 can be controlled by bit 7 by installing the jumper on J8 instead of J9. This position provides you with another alarm contact (set 6).

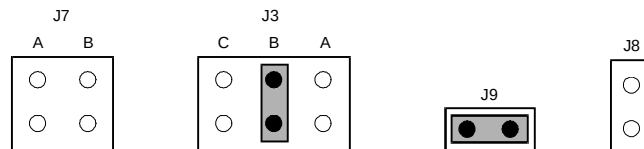


Figure D-74. External Alarms Relay Interface Circuit Card Jumper Settings

Connector Pin and Relay Assignments

The External Alarms Relay Interface circuit card has eight relay contact closures and eight LED indicators. Relays 1 through 8 control LED indicators 1 through 8, respectively. Figure D-75 shows the external connectors for the card (the view is facing the male DB-25 connector on the card). Table D-9 contains information on the default connector pin and relay assignments for the card.

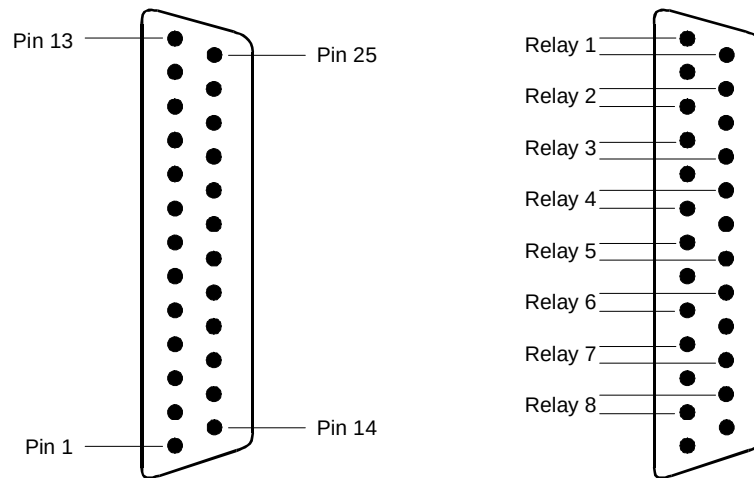


Figure D-75. External Connectors for the External Alarms Relay Interface Circuit Card

Table D-9. External Alarms Connector Configuration

Relay Number	Load Pin Number	DC Positive Pin Number	Alarm Contact Set
1	J1-25	J1-13	Power fail indicator
2	J1-11	J1-24	Software controlled
3	J1-22	J1-10	Software controlled
4	J1-8	J1-21	Software controlled
5	J1-19	J1-7	Software controlled
6	J1-5	J1-18	Software controlled
7	J1-16	J1-4	Sanity timer
8	J1-2	J1-15	Sanity timer

**Placing the External Alarms Relay
Interface Circuit Card in the MAP/100C**

After you set the resource options, follow the "General Procedure for Circuit Card Installation" in Chapter 6, "Installing Circuit Cards—Introduction and Types," of *MAP/100C Voice Processing Hardware Installation*, 585-350-108, to place the card in the MAP/100C.

SCSI Error Messages

E

What's in This Appendix

This appendix contains descriptions of the error messages that are displayed if a problem occurs with a SCSI device and the action to take (if any).

Normally there are several parts, or fields, to an error message. The first field is always the severity class. There are three severity classes: NOTICE, WARNING, and PANIC.

An error message prefaced by NOTICE provides system status information. These messages can help you take preventive measures before a problem occurs.

An error message prefaced by WARNING indicates that the operating system may stop functioning if corrective action is not taken. This class of message usually requires some immediate corrective action.

A PANIC error message indicates a problem so severe that the UNIX operating system must stop. The cause is usually a system hardware problem or a problem in the kernel software. Any programs running when a PANIC occurs are lost and some file systems may become corrupt. The UNIX system checks for file system damage when the system is restarted.

The field following the severity class identifies the SCSI peripheral that caused the error message. One of the following identifiers will appear in this field:

SD01 — SCSI Disk Target Driver error messages

ST01 — SCSI Cartridge Tape Driver error messages

SCSI — Host Adapter error messages

Other fields will contain identifiers to further define the source of the error. Identifiers associated with SCSI error messages are listed below:

(The *n* represents a variable number.)

TC*n* — Target Controller ID on the SCSI bus (0-7)

HA *n* — Host Adapter instance number

LU *n* — Logical Unit number (0-3)

Unit *n* — Disk number (0-3)

This appendix covers four categories of error messages:

SCSI Host Adapter Error Messages

SD01 Disk Target Driver Error Messages

SCSI Disk Mirroring Error Messages

SCSI Tape Driver Error Messages

SCSI Host Adapter Error Messages

The SCSI Host Adapter error messages are displayed when problems occur with SCSI Host Adapter hardware and software. The following section defines some of these error messages and gives an action to take.

Error Messages Prefaced by NOTICE

Error Message (Prefaced by NOTICE)	Description/Action
SCSI: HA <i>n</i> taking recovery action. Resetting SCSI bus.	The SCSI driver has detected a hung job and has reset the SCSI bus. This has in turn stopped jobs until the reset has completed. This notice means that the reset has completed normally and jobs will be continued normally. No action.

Error Messages Prefaced by WARNING

Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> TC <i>n</i> device <i>name</i> is unsupported and will not be configured.	The device referred to in this message has been found on the SCSI bus, but is not among the set of devices supported by the SCSI subsystem.
SCSI: HA <i>n</i> DGN RAM TESTS FAILED.	Indicates hardware failure. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> DGN FIFO TESTS FAILED.	Indicates hardware failure. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> DGN SBIC TESTS FAILED.	Indicates hardware failure. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> DGN INIT FF FAILED.	Indicates hardware failure. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

Continued on next page

Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> DGN IRQ FF FAILED.	Indicates hardware failure. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> DGN ROM CHECK SUM FAILED.	Indicates hardware failure. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> DGN Illegal status = <i>string</i> .	Indicates hardware failure. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI HA <i>n</i> not found at address <i>n</i> .	This message may indicate a failure to set the address jumpers correctly on the ISA SCSI Host Adapter, or may indicate that <i>/unix</i> has been configured with addresses that do not match the hardware configuration.
SCSI HA <i>n</i> is not ready to accept commands (<i>message string</i>).	This message points to a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> Initialization failed. Unable to configure HA <i>n</i> .	This message points to a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> TC <i>n</i> target illegally set at HA SCSI ID (<i>n</i>).	This message indicates that a SCSI device is on the SCSI bus at the same ID as the Host Adapter. The Target device ID must be changed to another value before the system will perform properly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> has no equipped TCs.	The Host Adapter does not see any devices out on the SCSI bus. If devices are expected on the bus, verify that they are powered on and have unique SCSI IDs.
SCSI: HA <i>n</i> TC <i>n</i> has no LUs.	The Host Adapter does not see any devices "under" the TC. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> not functional.	This message is indicative of a SCSI cabling, termination, or a hardware error. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

Continued on next page

Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> unexpected interrupt (<i>string</i>).	The SCSI driver has detected an unexpected interrupt from the Host Adapter. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures."
SCSI: HA <i>n</i> TC <i>n</i> LU <i>n</i> completion received but job not found on queue.	The SCSI device has received a job completion for an idle device. To correct the problem: Perform the "Shutting Down the Operating System" procedure in Chapter 4, "Common Maintenance Procedures." Check the cabling on the SCSI bus. Verify the terminating resistors are installed properly at each end of the bus (normally, the tape drive and host adapter) and only at the end of the bus. Verify that the disk, tape and host adapter are jumpered correctly. If you have installed unsupported SCSI devices, remove them. Perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures."
SCSI: HA <i>n</i> TC <i>n</i> LU <i>n</i> completion reported for unreferenced job.	The SCSI device has received a job completion that does not point to a valid job. This message should never be seen on a sane system with a sane SCSI board. Reboot the system. If the error message is repeated, reinstall the SCSI Drivers and Utilities. If the problem still exists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started"

Continued on next page

Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> TC <i>n</i> LU <i>n</i> completion reported for unsent job.	The SCSI device has received a job completion for a job that has not yet been sent. This message should never be seen on a sane system. Reboot the system. If the error message is repeated, reinstall the SCSI Drivers and Utilities. If the problem still exists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started"
SCSI: Corrupted address returned during pass through operation.	The addresses within the SCSI control block have been corrupted while the job was in firmware. This implies either kernel or firmware corruption has occurred. To correct the problem: Perform the "Shutting Down the Operating System" procedure in Chapter 4, "Common Maintenance Procedures." Check the cabling on the SCSI bus. Verify the terminating resistors are installed properly at each end of the bus (normally, the tape drive and host adapter) and only at the end of the bus. Verify that the disk, tape and host adapter are jumpered correctly. If you have installed unsupported SCSI devices, remove them. Perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures."
SCSI: Bad completion code returned during pass through operation.	The completion code did not get modified during the SCSI operation. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

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Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> TC <i>n</i> LU <i>n</i> job timeout.	A SCSI job failed to complete in its allotted amount of time. To correct the problem: Perform the "Shutting Down the Operating System" procedures Chapter 4, "Common Maintenance Procedures." Check the cabling on the SCSI bus. Verify the terminating resistors are installed properly at each end of the bus (normally, the tape drive and host adapter) and only at the end of the bus. Verify that the disk, tape and host adapter are jumpered correctly. If you have installed unsupported SCSI devices, remove them. Perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the message is repeated, there is probably a TC that is faulty. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

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Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> TC <i>n</i> LU <i>n</i> illegal type on SCB job list.	The SCSI driver has detected an illegal job type on its job queue during a SCSI bus reset or a queue flush operation. To correct the problem: Perform the "Shutting Down the Operating System" procedure in Chapter 4, "Common Maintenance Procedures." Check the cabling on the SCSI bus. Verify the terminating resistors are installed properly at each end of the bus (normally, the tape drive and host adapter) and only at the end of the bus. Verify that the disk, tape and host adapter are jumpered correctly. If you have installed unsupported SCSI devices, remove them. Perform the "Rebooting the UNIX System" in Chapter 4, "Common Maintenance Procedures."
SCSI: HA <i>n</i> TC <i>n</i> LU <i>n</i> job submitted with a null pointer.	The sdi_send or sdi_icmd function was called with a a NULL pointer. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: job structure not allocated by SCSI driver.	The SCSI driver has detected a SCSI control block which was not allocated by the SCSI driver. This should never be seen on a system with sane AT&T supplied software. This is due to some non-AT&T supplied software not following the AT&T SCSI Open Architecture Requirements or a corrupted system. Perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures."

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Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> TC <i>n</i> LUN job submitted with a negative timeout value.	A job has been submitted with a SCSI control block that contained a negative time-out value. This is not allowed. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the error message is repeated, you may have a corrupted kernel on your core disk. If the problem persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: sdi_icmd called with an null job pointer.	The sdi_icmd function was called with a NULL pointer. This should never happen on a sane system. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." Reboot the system. If the error message is repeated, you may have a corrupted kernel on your core disk. If the problem persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: sdi_icmd called with an illegal opcode of <i>n</i> .	The sdi_icmd function was called with a SCSI control block that contained an unsupported opcode. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the problem still persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

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Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> TC <i>n</i> LU <i>n</i> job submitted with an illegal type of <i>n</i> .	The sdi_send or sdi_icmd function was called with an invalid type field in the SCSI control block. This should never happen on a sane system. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the error message is repeated, you may have a corrupted kernel on your core disk. If the problem persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: <i>message string</i> for an unequipped or illegal target. job submitted sdi_fltinit called sdi_getdev called sdi_icmd called sdi_name called	A job has been submitted or an SDI function called for an out of range TC/LU or a TC/LU combination that was not configured into the Equipped Device Table information. To correct the problem: Perform the "Shutting Down the Operating System" procedure in Chapter 4, "Common Maintenance Procedures." Check the cabling on the SCSI bus. Verify the terminating resistors are installed properly at each end of the bus (normally, the tape drive and host adapter) and only at the end of the bus. Verify that the disk, tape and host adapter are jumpered correctly. If you have installed unsupported SCSI devices, remove them. Perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures."

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Error Message (Prefaced by WARNING)	Description/Action
SCSI: sdi_getblk called with a corrupted free list.	The sdi_getblk function was called with the free list of SCSI control blocks corrupted. If the error message is repeated, you probably have a corrupted SCSI driver or kernel. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the problem persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: sdi_freeblk SCB not allocated by SDI.	The SCSI driver has detected a SCSI control block which was not allocated by the SCSI driver. This should never be seen on a sane system with sane AT&T supplied software. This is due to some non-AT&T supplied software not following the AT&T SCSI Open Architecture Requirements or a corrupted system. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures."
SCSI: sdi_translate called with a null pointer.	The sdi_translate function was called with a NULL pointer. This should never happen on a sane system. If the error message is repeated, you may have a corrupted kernel on your core disk. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the problem still persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

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Error Message (Prefaced by WARNING)	Description/Action
SCSI: Linked commands NOT available.	The sdi_translate function was called with a non-NULL link field in the SCSI control block. This is not supported by the current driver. This should never happen on a sane system. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the error message is repeated, you may have a corrupted kernel on your core disk. If the problem persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> TC <i>n</i> pass through jobs are not supported to the HA ID.	The pass-through command was attempted to the host adapter itself! Check the pass-through code. If using scsi format, or any supported utility when this happens, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the error message is repeated, you probably have a corrupted SCSI driver or kernel. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the problem still persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

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Error Message (Prefaced by WARNING)	Description/Action
SCSI: Corrupted address from physio.	The address used for pass-through was corrupted during the call to <i>physio</i> in the kernel. This should never happen on a sane system. Perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the error message is repeated, you probably have a corrupted SCSI driver or kernel. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering installpkg. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the problem still persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: can not read EISA ID for HA <i>n</i> configured in slot <i>n</i> .	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> TC <i>n</i> LU <i>n</i> illegal completion status = <i>string</i> .	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> TC <i>n</i> LU <i>n</i> job completion indicates SCSI bus parity error.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> TC <i>n</i> LU <i>n</i> job timeout during initialization.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> at address <i>string</i> is not supported.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> command <i>string</i> failed, status= <i>string</i> .	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

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Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> completion packet has null job pointer.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> did not accept write parameters command.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> did not respond to ASC initialization (status = <i>string</i>).	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> did not respond to ASC reset (status = <i>string</i>).	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> does not support DMA operation.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> does not support EATA command set.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> does not support multi-threading.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> doesn't respond to initialization command.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> doesn't respond to read configuration command.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> doesn't respond to set configuration command.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> illegal completion status = <i>string</i> .	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

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Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> failed to accept command.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> indicates not ready. Can not issue initialization command.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> interrupt received for out of range mailbox.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started."
SCSI: HA <i>n</i> NON SCSI completion opcode = <i>string</i> .	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> port hung, alternate status = <i>string</i> .	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> post initialization failed. Unable to configure HA <i>n</i> .	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> read HA version command timed out.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> read parameters command timed out.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> received interrupt with non completion status (<i>string</i>).	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> unrecognized.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

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Error Message (Prefaced by WARNING)	Description/Action
SCSI: HA <i>n</i> will not accept read HA version command.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> will not accept read parameters command.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".
SCSI: HA <i>n</i> write parameters command timed out.	This message indicates a Host Adapter that is functioning improperly. Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

Error Messages Prefaced by PANIC

**NOTICE: SD01: HA *n*, TC *n*, Unit *n*,
Slice *n*, Block *n*, Err: 0dd2d001**

Description**0dd2d001**

A marginal bad block was detected. The driver is having difficulty reading this block. An Error Correction Code (ECC) had to be used.

This message may be followed by one of the following messages:

Error Message	Description/Action
NOTICE: SD01: Soft read error corrected by ECC algorithm: block <i>n</i> .	A potential marginal block was detected in the UNIX system partition, outside the sacred area. No corrective action is necessary.
NOTICE: SD01: An alternate block has been assigned to block <i>n</i> .	A marginal block has been mapped and the system recovered the data.No corrective action is necessary.
WARNING: SD01: A potential bad block has been detected (block <i>n</i>) on a sacred area of the hard disk. If this block goes bad, the UNIX system will be lost. Please backup your system.	A potential marginal block was detected in the sacred area of the hard disk. Perform the "Backing Up the System" procedure in Chapter 4, "Common Maintenance Procedures."
WARNING: SD01: A potential bad block has been detected (block <i>n</i>). The system is out of spare blocks for surrogates. If the block goes bad, it cannot be mapped.	A potential marginal block was detected in the UNIX system partition and the drive is out of unassigned alternate sectors. Perform the "Backing Up the System" procedure in Chapter 4, "Common Maintenance Procedures."

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Error Message	Description/Action
WARNING: SD01: A potential bad block has been detected (block <i>n</i>). The system can not reassign a surrogate block. Try remapping this block manually.	A potential marginal block was detected in the UNIX system partition and the system failed to automatically reassign an alternate sector.
WARNING: SD01: Data from block <i>n</i> is not readable. Data of this block has been lost. Trying to reassign an alternate block.	A marginal block has been mapped, but the system was unable to recover the data.No corrective action is necessary.
WARNING: SD01: Block <i>n</i> is not writable. Data of this block has been lost.	A marginal block has been mapped, but the system was unable to recover the data. The alternate sector may be bad.No corrective action is necessary.

NOTICE: SD01: slot *n*, tc *n*, Unit *n*, job queue is full.

Err: 0dd02001

Description

0dd02001

The addressed disk queue was filled up. This is caused by overloading the disk or the disk not executing jobs.

Action

If the condition continues, verify that the disk is executing requests.
If it is, decrease the load.

NOTICE: SD01: The driver is out of jobs. Err: 2dd02002

Description

2dd02002

The SCSI disk controller ran out of job structures for I/O requests. It is caused by a large number of outstanding disk I/O requests.

Action

If the error occurs often, increase the **Sd01_jobs** parameter in */etc/conf/pack.d/sd01/space.c*. Then rebuild */unix* by executing */etc/conf/bin/idbuild* and then reboot the system.

WARNING: SD01: *string*. Err: *n*

Description

8dd01001

The disk driver cannot determine equipment. This is caused by insufficient virtual or physical memory to allocate the driver Equipped Device Table (EDT) data structure.

8dd01002

The disk driver is not fully configured. This is caused by insufficient virtual or physical memory to allocate internal driver structures.

8dd01003

The disk driver *space.c* file is not valid. This is caused by specifying an invalid number of subdevices in **Sd01_nodes**. The driver does not support less than 8 or greater than 16 partitions per drive.

6dd0b002

The SCSI disk is not configured properly. This is caused by not defining an **ACTIVE** operating system in the partition table (fdisk).

6dd0b003

The SCSI disk is not configured for the UNIX operating system. This is caused by specifying an **ACTIVE** partition in the partition table that may not be intended to be used with the UNIX operating system.

6dd0b004

The SCSI disk does not contain a VTOC. This caused by specifying a different VTOC location in the */etc/partitions* file. The driver expects the VTOC to be in the PD sector at location 29.

6dd0b005

The UNIX system partition entry in the VTOC does not match the partition defined in the **fdisk** table. This is caused by changing the starting sector address or size of slice 0 in the VTOC without performing an **fdisk(1)**.

6dd31001

The sectors per cylinder parameter calculates to be less than or equal to zero. This is caused by incorrect data returned by the **MODE SENSE** command or the drivers master file. This may not be an AT&T supported device.

6dd31002

The number of cylinders calculate to be less than or equal to zero. This is caused by incorrect data returned by the **READ CAPACITY** command. This may not be an AT&T supported device.

WARNING: SD01: *string*. Unit= *n* Err: *n**Description***6dd1f003**

The VTOC version on the addressed disk is not supported. The disk must be reformatted and repartitioned before it can be accessed for normal use.

WARNING: SD01: Bad type from host adapter! Err: 8dd23001*Description***8dd23001**

The Host Adapter called this function due to a fault condition on the SCSI bus but passed an unknown parameter to this function.

Action

Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

WARNING: SD01: Bad type to host adapter. Err: *n**Description***8dd03201**

The Host Adapter rejected a request from the SCSI disk driver. This is caused by a parameter mismatch within the driver.

8dd03301

The Host Adapter rejected a retry job request from the SCSI disk driver. This is caused by a parameter mismatch within the driver.

8dd03302

The Host Adapter rejected a Request Sense request from the SCSI disk driver. This is caused by a parameter mismatch within the driver.

8dd04001

The Host Adapter rejected a request from the SCSI disk driver. This is caused by a parameter mismatch within the driver.

8dd0e002

The Host Adapter rejected a request from the SCSI disk driver. This is caused by a parameter mismatch within the driver.

8dd0f002

The Host Adapter rejected a request from the SCSI disk driver. This is caused by a parameter mismatch within the driver.

8dd11001

The Host Adapter rejected a request from the SCSI disk driver. This is caused by a parameter mismatch within the driver.

8dd12004

The Host Adapter rejected a Request Sense job from the SCSI disk driver. The original job will also be failed. This is caused by a parameter mismatch within the driver.

8dd13001

The Host Adapter rejected a Request Sense job from the SCSI disk driver. The original job will also be failed. This is caused by a parameter mismatch within the driver.

8dd24001

The Host Adapter rejected a function request to suspend the LU queue for the current device. The disk driver cannot proceed with the handling of the fault, so the original I/O request will fail.

8dd25003

The Host Adapter rejected a Request Sense job from the SCSI disk driver. The original job will also be failed.

8dd27001

The Host Adapter rejected a Request Sense job issued by the SCSI disk driver. The original job will also be failed.

8dd27002

The Host Adapter rejected a Reserve job issued by the SCSI disk driver. The original job will also be failed.

Action

Reload the SCSI Support package by inserting the floppy into the floppy drive and entering **installpkg**. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the problem still persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

**WARNING: SD01: I/O error. slot *n*, tc *n*, Unit = *n*,
Err: *n***

SDI return code:0*n*

Note: **block= *n***, **count= *n*** are also displayed if a read or write job fails.

Description

4dd0f001

A SCSI disk driver function request was retried. The retry was performed because the Host Adapter driver detected an error.

4dd12003

The SCSI disk driver is retrying an internal Request Sense job which failed because of an error detected by the Host Adapter driver.

4dd13002

The SCSI disk driver is retrying an I/O request because of a fault which was detected by the Host Adapter driver.

6dd0e001

An I/O request failed due to an error returned by the Host Adapter. All recovery action failed, and the I/O request was returned to the requester.

6dd0f003

A SCSI disk driver function request failed because the Host Adapter driver detected a fatal error or the retry count was exceeded. This failure will cause the affected unit to hang.

6dd12002

An internal SCSI disk target Request Sense job failed because of an error detected by the Host Adapter driver. The original I/O request will be failed.

Action

See Reference Table E-3, QQErr Code Descriptions, QQ in this Appendix for a description of the Small Device Interface (SDI) return codes. Reload the SCSI Support package by inserting the floppy into the floppy drive and entering **installpkg**. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the problem persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

**WARNING: SD01: I/O error. slot n, tc n, Unit = n,
Err: n**

Sense key: n, Extended sense: n, Op code: n

Note: **block=n** and **count=n** are also displayed if a read or write job fails.

Description

4dd12001

The SCSI disk driver is retrying an I/O request because of an error detected by the TC.

4dd12005

The disk controller performed retry or ECC which was successful. 4dd25001
The SCSI disk driver retried a function request. The retry was performed because the Host Adapter detected an error.

6dd25002

The Host Adapter detected an error with the **SUSPEND** function request and the retry count has already been exceeded.

6dd27003

The Host Adapter detected a failure in the last Reserve job issued by the SCSI disk driver. The retry count has been exceeded so the original job has been failed.

6dd27006

The **RESERVE** command caused the bus to reset and has exceeded its maximum retry count. The original job will be failed, and the error handling code will be exited.

4dd2b001

The SCSI disk driver is retrying an I/O request because of an error detected by the TC.

4dd2b002

The disk controller performed retry or ECC which was successful.

6dd29001

The SCSI disk driver was unable to re-reserve a device. Some hardware problem, or the device was reserved by some other host, is probably causing the driver to fail in its attempt to reserve the device.

Action

Reload the SCSI Support package by inserting the floppy into the floppy drive and entering **installpkg**. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the problem persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

**WARNING: SD01: I/O error. slot n, tc n, Unit = n,
Err: 4dd13003**

Target controller status: n

*Description***4dd13003**

The addressed SCSI disk returned an unusual status. The job will be retried later. This condition is usually caused by a problem in the TC.

Action

Reload the SCSI Support package by inserting the floppy into the floppy drive and entering **installpkg**. Then, perform the "Rebooting the UNIX System" procedure in Chapter 4, "Common Maintenance Procedures." If the problem persists, report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

WARNING: SD01: slot *n*, tc *n*, Unit *n*, Err: 6dd1f001

Description

6dd1f001

The PD sector is bad on the addressed disk. The disk must be formatted before it can be accessed for normal use.

Action

Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

**WARNING: SD01: slot *n*, tc *n*, Unit *n*,
Err: 6dd1f002**

Description

6dd1f002

The VTOC is bad on the addressed disk. The disk must be partitioned before it can be accessed for normal use.

Action

Report the trouble to a customer engineer as described in Chapter 1, "Getting Started".

**WARNING: SD01: I/O error: *string*, Unit = *n*,
Err: 6dd0e002**

Description

6dd0e002 A bad block was detected. The driver cannot read this block. An Error Correction Code (ECC) was unsuccessful. The data in this block has been lost. The data can only be retrieved from a previous backup.

This message may be followed by one of the following messages:

Error Message	Description/Action
NOTICE: SD01: A bad block (block <i>n</i>) has been detected on a sacred area of the hard disk. The system cannot recover from this failure. You must reinstall the UNIX system and restore from a previous backup.	An unreadable bad block has been detected on the sacred area of the hard disk.
WARNING: SD01: Data from block <i>n</i> is not readable. Data of this block has been lost. An alternate block has been assigned.	An unreadable bad block has been detected on the UNIX system partition outside the critical area of the hard disk.
WARNING: SD01: The system is out of spare blocks for surrogates. Block <i>n</i> can not be mapped.	An unreadable bad block has been detected on the UNIX system partition outside the critical area of the hard disk. The drive is out of unassigned alternate sectors.
WARNING: SD01: The system can not reassign a surrogate block. Try remapping block <i>n</i> manually.	An unreadable bad block has been detected in the UNIX system partition and the system failed to automatically reassign an alternate sector.
WARNING: SD01: Block <i>n</i> is not writable. Failed to initialize block.	An unreadable bad block has been mapped, but the system was unable to initialize the alternate sector. Try writing to this block.

SCSI Disk Mirroring Error Messages

The following error messages may appear if there are problems with the mirroring of disk partitions.

WARNING: MD: Disk Partition *n*, *m* has been moved to 00D state. Error: *errnum*

Description

0x6df02001

A partition was moved to the out-of-service state because a write to the first disk partition of the mirrored pair failed. The driver was updating the time stamp during a close system call when the failure occurred. The *n* and *m* are the major and minor device numbers for the partition which was effected.

0x6df02002

A partition was moved to the out-of-service state because a write to the second disk partition of the mirrored pair failed. The driver was updating the time stamp during a close system call when the failure occurred. The *n* and *m* are the major and minor device numbers for the partition which was effected.

0x6df04001

A partition was moved to the out-of-service state because a normal I/O access failed. The *n* and *m* are the major and minor device numbers for the partition which was effected.

0x6df06001

A partition was moved to the out-of-service state because a write to the first disk partition of the mirrored pair failed. The driver was updating the time stamp when the failure occurred. The *n* and *m* are the major and minor device numbers for the partition which was effected.

0x6df06002

A partition was moved to the out-of-service state because a write to the second disk partition of the mirrored pair failed. The driver was updating the time stamp when the failure occurred. The *n* and *m* are the major and minor device numbers for the partition which was effected.

0x6df0c001

A partition was moved to the out-of-service state because a write to the first disk partition of the mirrored pair failed. The driver was updating the time stamp when the failure occurred. The *n* and *m* are the major and minor device numbers for the partition which was effected.

0x6df0c002

A partition was moved to the out-of-service state because a write to the second disk partition of the mirrored pair failed. The driver was updating the time stamp during a close system call when the failure occurred. The n and m are the major and minor device numbers for the partition which was effected.

Action

Attempt to run a mirror restore on this mirror partition. If this fails, diagnostics should be run on the disk. If necessary, the drive should be replaced.

**WARNING: MD: Could not access Disk
Partition n , m . Error: *errnum***

Description

0x6df0d001

The mirror driver could not access the first partition for mirroring root. The n and m are the major and minor device numbers for the disk.

0x6df0d002

The mirror driver could not access the second partition for mirroring root. The n and m are the major and minor device numbers for the disk.

0x6df10001

The mirror driver could not access the first partition for mirroring swap. The n and m are the major and minor device numbers for the disk.

0x6df10002

The mirror driver could not access the second partition for mirroring swap. The n and m are the major and minor device numbers for the disk.

Action

Either the device is not operational or the requested device is not for a valid mirrorable partition.

WARNING: MD: Boot partitions are not the same size. Error: *errnum*

Disk partition *n*, *m* size *xxxx*

Disk partition *l*, *k* size *yyyy*

Description

0x6df0d003

The **mirrordev** structure specifies two partitions which are not the same size. The *n* and *m* are the major and minor device numbers for the first disk and *xxxx* is its size in blocks. The *l* and *k* are the major and minor device numbers for the second disk and *yyyy* is its size in blocks.

0x6df10003

The **mdswapdev** structure specifies two partitions which are not the same size. The *n* and *m* are the major and minor device numbers for the first disk and *xxxx* is its size in blocks. The *l* and *k* are the major and minor device numbers for the second disk and *yyyy* is its size in blocks.

Action

Check the **mirrordev** or **mdswapdev** structure, respectively, in the *space.c* file for the mirror driver and the partition sizes of the specified devices.

WARNING: MD: Disk Partition *n*, *m* has been moved to 00D state. Error: *errnum*

Description

0x4df0d004

These errors can occur normally on the root and swap partition as the system starts up. For these partitions, the system will automatically attempt to re-establish mirroring.

0x4df10004

During initialization of the swap mirror partition, the time stamps required that the partition be made out-of-date. The *n* and *m* are the major and minor device numbers for the partition which was effected.

Action

During initialization of the mirror partition the time stamps required that the partition be made out-of-date. A restore will be performed to return the partitions to an active state.

SCSI Tape Driver Error Messages

SCSI tape driver error messages are displayed when problems occur with SCSI tape driver hardware and/or software. There are four basic formats for SCSI tape driver error messages:

- **Warning: ST nn : Error: Insufficient memory allocated to driver EDT**
- **WARNING: ST nn : Slot n : TC n : LU n : Err n : CMD n : Sense Key n**
- **WARNING: ST nn : Slot n : TC n : LU n : Err n**
- **WARNING: ST nn : Slot n : TC n : LU n : Err n : CMD n : Err Code n**

Each SCSI tape driver error message format contains five common fields:

- **ST nn** Identifies the type of device that is sending the error message; such as **ST01** for a cartridge tape
- **Slot n** Host Adapter slot number on the I/O bus
- **TC n** Target Controller ID on the SCSI bus (0-7)
- **LU n** Logical Unit number (0-3)
- **Err n** Identifies the error message number

The SCSI Tape Driver Error Message tables define **Err n** 's (error numbers) that are associated with each format type and suggest a corrective action to take. All the messages having the same format are grouped together.

Two of the error message formats contain error detection codes in addition to the common fields. These error detection codes, which are listed below, give additional information about the cause of the error.

- **CMD n** — A hexadecimal number assigned to the command that was being executed when the failure occurred
- **Sense Key n** — A hexadecimal number assigned to the sense key error that occurred
- **Err Code n** — An SDI error code that references a description of the occurring error

The error detection code variables are defined in the following Reference Tables that are found at the end of this appendix:

- CMD *n* Descriptions (Table E-1)
- Sense Key Descriptions (Table E-2)
- Err Code Descriptions (Table E-3)

Warning: ST nn : Error: Insufficient memory allocated to driver EDT.

This section covers SCSI tape driver error messages that have the following format:

Warning: ST nn : Error: Insufficient memory allocated to driver EDT.

The following table defines the error numbers found in messages with this type of format:

Number	Definition/Action
80501001	The tape driver cannot determine equipage. This is caused by insufficient virtual or physical memory space in which to allocate the driver Equipped Device Table (EDT) data structure. There are too many drivers configured.
80501002	The tape driver is not fully configured. This is caused by insufficient virtual or physical memory to allocate internal driver structures. There are too many drivers configured.

Warning: STnn: TC n LU n: Err n CMD n Sense Key n

This section covers SCSI tape driver error messages that have the following format:

Warning: STnn: TC n LU n: Err n CMD n Sense Key n

The following table defines the error numbers (**Err n**) found in messages with this type of format:

Number	Definition/Action
60503003	The tape device was not able to perform the SCSI WRITEFILEMARKS command. The tape device is suspect. Either the driver is in a fault state or the command is not supported by that device. The sense key provides more information about the error. (See Table E-2.) Perform diagnostics to verify the state of the tape device.
60503005	An attempt to access the tape device has failed. The tape device or medium is suspect. Refer to the SCSI sense key descriptions to obtain a detailed description of the error state. (See Table E-2.) Diagnostics should be performed in order to identify the problem.

Warning: STnn: TC n LU n: Err n

This section covers SCSI tape driver error messages that have the following format:

Warning: STnn: TC n LU n: Err n

The following table defines the error numbers (**Err n**) found in messages with this type of format:

Number	Definition/Action
60503001	The status information returned as a result of a SCSI REQUESTSENSE command is not in the SCSI defined extended sense format. Either the device does not correctly support the format or the device does not support the extended sense format at all, or the data has been corrupted. Perform diagnostics to verify that the device is operating correctly. Otherwise, reboot the system.
60503004	The attempted SCSI tape command is not supported by that tape device, or the device may be failing. Perform diagnostics to verify the state of the device. If the problem still exists, this may not be an AT&T supported tape device.
60509001	Cannot open requested device. Error has occurred because of a system power failure. Perform the power-up procedure for the system and device before accessing the device.
60509002	Cannot open device. The device address passed to the tape driver is not within the bounds of the device structures defined for the tape. Reboot the system, and ensure the tape feature is configured in the system and the device nodes are created correctly.
6050B002	The tape device does not support the block size required by the system for block mode transfers. The tape device and system block size are not compatible; thus, the tape device cannot be used in this mode. Perform diagnostics on the device to verify it is operating properly. If diagnostics fail, the device or configuration is suspect. If this passes, the tape device may not be an AT&T supported device.
80502001	The SCSI subsystem is not operational. An invalid job block address has been returned to the tape driver from the SCSI subsystem. Reboot the system.

Continued on next page

Number	Definition/Action
80504001	The SCSI subsystem is not operational. An unknown SDI type job has been returned by the SCSI subsystem to the tape driver. Reboot the system.
80505001	The SCSI subsystem is not operational. The expected SCSI REQUEST SENSE job was not returned from the SCSI subsystem. Reboot the system.
80506001	The SCSI subsystem is not operational. The job returned to the driver from the SDI subsystem is either out of sequence or unknown. Reboot the system.
80508002	The SCSI subsystem is not operational. The SDI subsystem cannot free the job block (memory) passed to it by the tape driver. This could indicate that a bad address was returned by the tape driver. Reboot the system.
80508003	The SCSI subsystem is not sane. The tape subsystem cannot free the job block (memory) returned to it by the SCSI subsystem. This could indicate that a bad address was returned by the SCSI subsystem. Reboot the system.
8050A001	The SCSI subsystem is not sane. The SCSI subsystem could not release the requested job block (memory) to the free list that was passed to it by the tape driver. Reboot the system to clear this condition.
8050A002	The SCSI subsystem is not sane. The tape subsystem could not release the requested job block (memory) to the free list that was returned to it by the SCSI subsystem. Reboot the system to clear this condition.
8050C001	A system power failure has occurred. The driver is not allowed to access any tape device in this condition. The power-up sequence must be performed prior to accessing this device.
8050D001	A system power failure has occurred. The driver is not allowed to access any tape device in this condition. The power-up sequence must be performed prior to accessing this device.
8050E001	A system power failure has occurred. The driver is not allowed to access any tape device in this condition. The power-up sequence must be performed prior to accessing this device.

**Warning: STnn: TC n LU n: Err n CMD n
Err Code n**

This section covers SCSI tape driver error messages that have the following format:

Warning: STnn: TC n LU n: Err n CMD n Err Code n

The following table defines the error numbers (**Err n**) found in messages with this type of format:

Number	Definition/Action
60504003	The SDI type job did not complete successfully. The SDI type command (CMD x) and the Err Code field provides a reference to describe the state in more detail. The SCSI subsystem is not sane. Reboot the system.
60505003	The SCSI REQUEST SENSE command did not complete successfully. The Err Code provides a description of the error type. Recovery action should be based on the Err Code value. (See Table E-3.) Suggested recovery actions are to run diagnostics on the tape device or reset the SCSI bus.
60506003	The device, that an attempt is being made to access, is in use (RESERVED)by another initiator (user) on the SCSI bus. This requires that the bus support multiple initiators .Access cannot be made to that device until the other initiator (user) releases that device from use. You must be sure that the other host system on the SCSI bus has released the device; that is, no one is using the device, or the device is not locked by the other system.
60506004	The SCSI command (CMD x) was returned with an error from the SCSI subsystem. The SCSI subsystem detected an error while processing the command. The Err Code defines the error type. (SeeTable E-3 for description of the Err Code.) Perform diagnostics on the device. If the diagnostics fail, the device or configuration is suspect. If diagnostics pass, reboot the system.
80503002	The tape driver is not able to send the SCSI type command (CMD x) to the device through the SCSI subsystem. An Err Code (0x1) indicates the job was returned with a retry status, and an Err Code (0xffffffff) indicates that the job was returned with an error [for example, a bad type in the SCSI Block (SB) structure]. In either case, the error should not normally occur. Reboot the system in an attempt to clear the condition.

Continued on next page

Number	Definition/Action
80503006	The tape driver is not able to send the SDI type command (CMD x) to the device through the SCSI subsystem via the immediate queue. An Err Code(0x1) indicates the job was returned with a retry status, and an Err Code (0xffffffff) indicates that the job was returned with an error (for example, a bad type in the SB structure). In either case, the error should not normally occur. Reboot the system in an attempt to clear the condition.
80505002	The tape driver is not able to send the SDI type command (CMD x) to the device through the SCSI subsystem via the immediate queue. An Err Code(0x1) indicates the job was returned with a retry status, and an Err Code (0xffffffff) indicates that the job was returned with an error (for example, a bad type in the SB structure). In either case, the error should not normally occur. Reboot the system in an attempt to clear the condition.
80506002	The tape driver is not able to send the SDI type command (CMD x) to the device through the SCSI subsystem via the immediate queue. An Err Code(0x1) indicates the job was returned with a retry status, and an Err Code (0xffffffff) indicates that the job was returned with an error (for example, a bad type in the SB structure). In either case, the error should not normally occur. Reboot the system in an attempt to clear the condition.
80506005	The tape driver is not able to send the SDI type command (CMD x) to the device through the SCSI subsystem via the immediate queue. An Err Code (0x1) indicates the job was returned with a retry status, and an Err Code (0xffffffff) indicates that the job was returned with an error (for example, a bad type in the SB structure). In either case, the error should not normally occur. Reboot the system in an attempt to clear the condition.
80506006	The tape driver is not able to send the SCSI REQUEST SENSE command (CMD x) to the device through the SCSI subsystem via the immediate queue. An Err Code (0x1) indicates the job was returned with a retry status, and an Err Code (0xffffffff) indicates that the job was returned with an error (for example, a bad type in the SB structure). In either case, the error should not normally occur. Reboot the system to attempt to clear the condition.

Continued on next page

Number	Definition/Action
80507001	The tape driver is not able to send the SCSI type command (CMD x) to the device through the SCSI subsystem via the immediate queue. An Err Code (0x1) indicates the job was returned with a retry status, and an ErrCode (0xffffffff) indicates that the job was returned with an error (for example, a bad type in the SB structure). In either case, the error should not normally occur. Reboot the system in an attempt to clear the condition.
80508001	The tape driver is not able to send the SCSI type command (CMD x) to the device through the SCSI subsystem via the immediate queue. An Err Code (0x1) indicates the job was returned with a retry status, and an ErrCode (0xffffffff) indicates that the job was returned with an error (for example, a bad type in the SB structure). In either case, the error should not normally occur. Reboot the system in an attempt to clear the condition.
8050B001	The tape driver is not able to send the SCSI type command (CMD x) to the device through the SCSI subsystem via the immediate queue. An Err Code (0xffffffff) indicates that the job was returned with an error (for example, a bad type in the SB structure). In either case, the error should not normally occur. Reboot the system in an attempt to clear the condition.
8050F001	The tape driver is not able to send the SCSI type or SDI command (CMD x) through the SCSI subsystem via the immediate queue. An Err Code(0x1) indicates the job was returned with a retry status, and an Err Code (0xffffffff) indicates that the job was returned with an error (for example, a bad type in the SB structure). In either case, the error should not normally occur. You should reboot the system in an attempt to clear the condition.

Reference Tables

Error detection code variables are defined in the following reference tables.

Table E-1. CMD n Descriptions

CMD <i>n</i> (Hex)	Command Executing at Time of Failure	Description
00	TEST UNIT READY	Checks to see if the tape drive is ready.
01	REWIND	Requests that the TC rewind the tape drive to the beginning-of-medium or load point. Prior to executing the rewind operation, the TC writes any buffered data to the medium.
03	REQUEST SENSE	Requests that the TC transfer sense data to the initiator.
05	READ BLOCK LIMITS	Requests that the TC capability for block length limits be returned for the tape device.
08	READ	Transfers one or more block(s) to the initiator beginning with the next block on the tape drive.
0A	WRITE	Transfers one or more block(s) from the initiator to the current position on the tape drive medium.
0B	TRACK SELECT	Requests that the track specified be selected.
0F	READ REVERSE	Functions identically to the READ command except that the medium motion is in the reverse direction. Thus blocks, and bytes within the blocks, are transferred in the reverse order.
10	WRITE FILEMARKS	Causes the specified number of file marks to be written, beginning at the current medium position on the tape drive. If an error occurs during this operation, buffered data may not have been completely transferred to the medium.
11	SPACE	Allows you to move forward and backward through your medium.

Continued on next page

Table E-1. CMD *n* Descriptions — Continued

CMD <i>n</i> (Hex)	Command Executing at Time of Failure	Description
12	INQUIRY	Requests that information regarding parameters of the target controller and its attached peripheral device(s) be sent to the initiator.
13	VERIFY	Verifies one or more block(s) beginning with the next block on the tape drive medium.
14	RECOVER BUFFERED DATA	Reads data that has been transferred to a target buffer but has not been written onto the medium.
15	MODE SELECT	Allows the initiator to specify tape drive, medium, or peripheral device parameters to the TC.
16	REVERSE UNIT	Reserves the specified tape drive for exclusive use by the requesting initiator, or if third party reservation option is implemented, to another specified SCSI device.
17	RELEASE UNIT	Releases the tape drive if it is currently reserved by the requesting initiator.
18	COPY	Copies data from one tape drive to another or to the same tape drive.
19	ERASE	Causes all or part of the remaining medium to be erased, beginning from the current logical position.
1A	MODE SENSE	Allows a TC to report its tape drive, medium, or peripheral device parameters to the initiator. This is a complimentary command to the MODE SELECT command.
1B	LOAD/UNLOAD	Requests that the TC enable or disable the tape drive for further operations.

Continued on next page

Table E-1. CMD n Descriptions — *Continued*

CMD <i>n</i> (Hex)	Command Executing at Time of Failure	Description
1C	RECEIVE DIAGNOSTIC RESULTS	Requests that analysis data be sent to the initiator after completion of a SEND DIAGNOSTIC command.
1D	SEND DIAGNOSTIC	Requests the TC to perform diagnostic tests on itself or the attached peripheral devices, or on both.
1E	PREVENT/ALLOW MEDIUM REMOVAL	Requests that the TC enable or disable the removal of the medium in the tape drive.

Table E-2. Sense Key Descriptions

Sense!Key! (Hex)	Descriptions
0	NO SENSE. Indicates that there is no specific sensekey information to be reported for the designated LU. This is the case for a successful command or a command that received a CHECKCONDITION status because one of the FM, EOM, or ILI bits is set to one.
1	RECOVERED ERROR. Indicates that the last command completed successfully with some recovery action performed by the TC. Details may be determinable by examining the additional Sense Bytes and the Information Bytes.
2	NOT READY. Indicates that the LU addressed cannot be accessed. Operator intervention may be required to correct this condition.
3	MEDIUM ERROR. Indicates that the command terminated with a nonrecovered error condition that was probably caused by a flaw in the medium or an error in the recorded data.
4	HARDWARE ERROR. Indicates that the TC detected a nonrecoverable hardware failure (controller failure, device failure, parity error, etc.) while performing the command or during a self-test.
5	ILLEGAL REQUEST. Indicates that there was an illegal parameter in the command descriptor block or in the additional parameters supplied as data for some commands (FORMAT UNIT , SEARCH DATA , etc.). If the TC detects an invalid parameter in the command descriptor block, it then terminates the command without altering the medium. If the TC detects an invalid parameter in the additional parameters supplied as data, then the TC may have already altered the medium.
6	UNIT ATTENTION. Indicates that the removable medium may have been changed or the TC has been reset.
7	DATA PROTECT. Indicates that a command that reads or writes the medium was attempted on a block that is protected from this operation. The read or write operation is not performed.
8	BLANK CHECK. Indicates that a write-once read-multiple device or a sequential-access device encountered a blank block while reading or a write-once read-multiple device encountered a nonblank block while writing.

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Table E-2. Sense Key Descriptions — *Continued*

Sense!Key! (Hex)	Descriptions
9	Vendor unique. This sense key is available for reporting vendor unique conditions.
A	COPY ABORTED. Indicates a COPY , COMPARE , or COPY ANDVERIFY command was aborted due to an error condition on the source device, the destination device, or both. (See COPY command for additional information about this sense key.)
B	ABORTED COMMAND. Indicates that the TC aborted the command. The initiator may be able to recover by trying the command again.
C	EQUAL. Indicates a SEARCH DATA command has satisfied an equal comparison.
D	VOLUME OVERFLOW. Indicates that a buffered peripheral device has reached the end-of-medium and data remains in the buffer that has not been written to the medium. ARECOVER BUFFERED DATA command(s) may be issued to read the unwritten data from the buffer.
E	MISCOMPARE. Indicates that the source data did not match the data read from the medium.
F	This sense key is reserved.

Table E-3. Err Code Descriptions

Err Code	Message	Description
00000000	This block is not allocated	This block has not been allocated by the Host Adapter driver. The target drivers should never detect this <i>sc_comp_code</i> ; a target driver should probably PANIC if it received a block with <i>sc_comp_code</i> set to SDI_NOALLOC. The <i>sc_comp_code</i> is set to this value when the SCSI Block is freed.
00000001	Job completed normally	All seems well means that the job has completed and no errors were detected.
00000002	Linked command done without flag	Indicates that this linked command completed normally and the SCSI command flag bit was zero.
00000003	Linked command done with flag	Indicates that this linked command completed normally and the SCSI command flag bit was one.
00000013	Job in progress	Indicates that the job has not completed yet.
00000014	Job not in use	This code is for use by the target driver when it is not using the control structure. The Host Adapter driver will set the <i>sc_comp_code</i> to this value when it allocates a SCSI Block for the target driver.
10000000	Processing has been suspended	The Host Adapter driver has suspended job processing for this device.
20000000	A message has been sent	A message regarding this event has already been printed on the console and logged.
40000000	Retry the job	The error was probably unrelated to the job. Retry the job.
80000000	An error was detected	Indicates there was an error.
8000000A	Addressed device not present	This error code is returned when the HostAdapter driver believes that the device addressed is not connected.
8000000F	SCSI Control Block (SCB) error	The SCSI Control Block (SCB) contains an error or invalid type. The target driver is insane, reload the target driver.

Continued on next page

Table E-3. Err Code Descriptions — Continued

Err Code	Message	Description
80000017	More than one immediate request	This error code is returned when more than one immediate request has been sent.
80000019	SCSI Function Block (SFB) error	There is an error in the field of the SFB. The target driver is insane, reload the target driver.
A0000008	vtop failed	Indicates that the virtual to physical address translation failed.
A000000C	Memory Fault	Indicates there was a memory fault while accessing the data area of the job.
A000000D	SCSI bus error	The Host Adapter encountered a problem on the SCSI bus and all recovery action failed. A controller with a faulty bus could cause such an error.
D0000007	Reset was caused by this unit	The Host Adapter driver was working on this job and a fatal protocol error was detected, which caused the Host Adapter driver to reset the SCSI bus.
D0000009	Job timed out	This error code is returned when the Host Adapter driver times out a job.
D000000E	Target returned check status	The status byte should be checked. This error is returned when the TC returns a status other than <i>GOOD</i> .
D0000011	The SCSI bus select failed	The Host Adapter driver timed out trying to select the controller.
D0000012	Parameter mismatch	The controller attempted to perform an operation that did not agree with the data in the SCB; that is, the controller attempted a data-in transfer and the <i>SCB_READ</i> flag was not set.
E0000004	Job was flushed	When the target driver requests that the job queue for a device be flushed, all jobs in the queue are returned with this completion code.

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Table E-3. Err Code Descriptions — *Continued*

Err Code	Message	Description
E000000B	Host Adapter error	Indicates that there is some problem between the Host Adapter driver and the Host Adapter controller. Possible causes are a 3B I/O bus parity or an insane Host Adapter.
F0000005	Command was aborted	Indicates that this job was aborted by the target driver.
F0000006	Reset was detected on the bus	When the Host Adapter driver detects a reset on the SCSI bus, it will return all outstanding and queued jobs to the target drivers with this condition code. This code is also returned when a target driver requests that a TC be reset.

Abbreviations

A

AC

Alternating current

ACD

Automatic call distributor

AD

Application Dispatch

AD-API

Application dispatch application programming interface

ADPCM

Adaptive differential pulse code modulation

ADU

Asynchronous data unit

AGL

Application generation language

ALERT

VIS Alerter process

ANI

Automatic number identification

API

Application programming interface

ARU

Alarm relay unit

ASAI

Adjunct/Switch Application Interface

ASCII

American Standard Code for Information Interchange

ASI

Analog switch integration

B

BB

Bulletin board

bps

Bits per second

BRDG

Call bridging process

BSC

Binary synchronous communication

C

CCA

Call classification analysis

CDH

Call data handler

CELP

Continuously Excited Linear Prediction

CGEN

Voice system general message class

CICS

Customer Information Control System

CMP

Companion circuit card

CMS

Call Management System

CO

Central office

CPE

Customer provided equipment or customer premise equipment

CPN

Calling party number

CPT

Call progress tones

CPU

Central processing unit

CSU
Channel service unit

CVS
Converse vector step

D

dB
Decibels

DB
Database

DBC
Database checking process

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

DMA
Direct memory access

DNIS
Dialed number identification service

DSP
Digital signal processor

DTE
Data terminal equipment

DTMF
Dual tone multi-frequency

DTR
Data terminal ready

E

EBCDIC

Extended Binary Coded Decimal Interexchange Code

EIA

Electronic Industries Association

EISA

Extended Industry Standard Architecture

EMI

Electromagnetic interference

ESD

Electrostatic discharge

ESDI

Extended Serial Data Interface

ESS

Electronic Switching System

ET

Error tracker

EXTA

External alarms feature message class

F

FCC

Federal Communications Commission

FDD

Floppy disk drive

FEP

Front end processor

FFE

Form Filler Plus feature message class

FIFO

First-in-first-out processing order

foos

Facility out-of-service state

FTS

File transfer process message class

G

GEN

PRISM logger and alerter general message class

GSE

Graphical Speech Editor

GUI

Graphical user interface

H

HDD

Hard disk drive

HLLAPI

High Level Language Application Programming Interface

HOST

Host interface process message class

hwoos

Hardware out-of-service state

Hz

Hertz

I

IBM

International Business Machines

ICK

Integrity checking process message class

ID

Identification

IDE

Integrated Disk Electronics

IE

Information element

INIT

Voice system initialization message class

inserv

In-service state

Abbreviations

IPC

Interprocess communication

IPC

Intelligent Ports Card (IPC-900)

IPCI

Integrated personal computer interface

IRAPI

Intuity Response Application Programming Interface

IRQ

Interrupt request

ISA

Industry Standard Architecture

ISDN

Integrated Services Digital Network

ISV

Independent Software Vendor

ITAC

International Technical Assistance Center

IVP4

Integrated Voice Processing card with 4 analog channels

IVP6

Integrated Voice Processing card with 6 analog channels

IVPSS

Integrated Voice Processing System Software

K

Kbps

Kilobites per second

Kbyte

Kilobyte

L

LAN

Local area network

LDB

Local database

LED

Light-emitting diode

LIFO

Last-in-first-out processing order

LN

Load number

LOG

VIS logger process message class

LST1

Line side T1

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

Mbps

Megabits per second

Mbyte

Megabyte

ms

Millisecond

msec

Millisecond

MHz

Megahertz

MTC

Maintenance process

N

NCP

Network Control Program

NEBS

Network Equipment Building Standards

Abbreviations

NEMA

National Electrical Manufacturers Association

netoos

Network out-of-service state

NFAS

Non-Facility Associated Signaling

NFS

Network file sharing

NMVT

Network Management Vector Transport

NM-API

Network Management - Application Programming Interface

nonex

Nonexistent state

NRZ

Non Return to Zero

NRZI

Non Return to Zero Inverted

O

OEM

Original equipment manufacturer

OGA

Operator generated alert

P

PBX

Private branch exchange

PC

Personal computer

PCB

Printed circuit board

PCM

Pulse code modulation

PEC

Price element code

PRI

Primary rate interface

PSTN

Public switch telephone network

PS&BM

Power supply and battery module

R

RAM

Random access memory

RECOG

Speech recognition feature message class

RDBMS

ORACLE relational database management system

REN

Ringer equivalence number

RFS

Remote file sharing

RM

Resource manager

RMB

Remote maintenance board

RTS

Request to send

S

SBC

Sub-band coding

SCCS

Switching Control Center System

SCSI

Small Computer System Interface

SDLC

Synchronous Data Link Control

SDN

Software Defined Network

SID

Station identification

SIMM

Single inline memory module

SLIP

Serial Line Interface Protocol

SNA

Systems Network Architecture

SNMP

Simple Network Management Protocol

SP

Signal processor circuit card

SPIP

Signal processor interface process

SPPLIB

Speech processing library

SQL

Structured Query Language

SR

Speech recognition

SYS

UNIX system calls message class

sysgen

System generation

T

tas

Transaction assembler

TCC

Technology Control Center

TCP/IP

Transmission control protocol/internet protocol

TDM

Time division multiplexing

TE

Terminal emulator

THR

Threshold message class

TKR

Token Ring

TLI

Transport layer interface

TLP

Transmission level plan

T/R

Tip/Ring circuit card

TRIP

Tip/Ring interface process

TSO

Technical Service Organization

TSO

Time Share Operation

TSM

Transaction state machine process

TTS

Text-to-Speech

TWIP

T1 interface process

U

UK

United Kingdom

USOC

Universal service ordering code

UVL

Unified Voice Library

V

VDC

Video display controller

VIS

Intuity CONVERSANT Voice Information System

VPC

Voice processing comarketer

VRU

Voice response unit

VROP

Voice response output process

Glossary

Numerics

3270 interface

A link between one or more Intuity CONVERSANT Voice Information System (VIS) machines and a host mainframe. In Intuity CONVERSANT 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 Intuity 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 Intuity CONVERSANT VIS) to audio.

alerter

A system process that 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 that provide an automated version of the communication between a caller and an attendant. The Intuity CONVERSANT VIS provides several methods for creating applications, including Script Builder, the Intuity Response Application Programming Interface (IRAPI), and transaction state machine (TSM) script language.

application administration

The component of the Intuity CONVERSANT 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 Intuity CONVERSANT 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 Intuity CONVERSANT 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 lowercase letters, numerals, and special characters. Each alphanumeric and special character has an ASCII code (binary) equivalent that is 1 byte long.

asynchronous communication

A method of data transmission in which bits or characters are sent at irregular intervals and 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 telephone 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

The preservation of the information in a file in a different location, so that the data is not lost in the event of hardware or system failure.

backing up an application

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 allow callers to speak their responses to the VIS prompt and have those responses 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 telephone is busy or if the caller answered.

bridging

The process of connecting one telephone network connection to another telephone network connection over the Intuity CONVERSANT VIS TDM bus. Bridging decreases the processing load on the system since an active bridge does not require speech processing, database access, host activity, etc., for the transaction.

BSC

See "binary synchronous communication."

bundle

In the context of the Enhanced File Transfer package, this term is used to denote a single file, a group of files (package), or a combination of both.

byte

A unit of storage in the computer. On many systems, a byte is 8 bits (binary digits), 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.

caller

The party that calls for a service, gets connected to the Intuity CONVERSANT VIS, and interacts with the system. As the Intuity CONVERSANT VIS is also capable of making outbound calls for service, the caller can also be the person who responds to those outbound calls.

call progress tones

Standard telephony sounds that indicate the status of the call. These sounds include busy, fast busy, ringback, reorder, etc.

card cage

An area within a Intuity CONVERSANT 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 or a loss of data.

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 Intuity CONVERSANT VIS that is based on either the Multi-Application Platform 100 (MAP/100), MAP/40, or MAP/100C.

channel

See "port."

CICS

See "Customer Information Control System."

circuit card upgrade

A new circuit card that replaces an existing one in the platform. Usually the replacement is an updated version of the other card, and the replacement is designed to deal with technology made obsolete by industry trends or a new VIS release.

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 Intuity 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 Intuity CONVERSANT VIS 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 in 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.

coresidency

The ability of two products or services to operate and interact with each other on a single hardware platform. An example of this is the use of AUDIX Voice Power along with Intuity CONVERSANT on the same 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 Intuity CONVERSANT VIS voice prompts that AT&T records for a customer on a custom basis.

custom vocabulary

A specialized package of unique words or phrases created on a per-customer basis and used by WholeWord or FlexWord speech recognition.

Customer Information Control System

Part of the operating system that manages resources for running applications (for example, IND\$FILE). Note that TSO and CMS provide analogous functionality in other host environments.



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 field

A field 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 changes 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 performs a task in the absence of other instructions.

default owner

The owner of a channel when no process takes ownership of that channel. The default owner holds all idle, in-service channels. In terms of the IRAPI, this is typically the Application Dispatch process.

diagnose

The process of performing diagnostics on Tip/Ring, T1, or SP circuit cards or a bus.

dialed number identification service

A service that allows incoming calls to contain information about the telephone 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.

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

editor system

A system that allows speech phrases to be displayed and edited by a user. See "Graphical Speech Editor."

Enhanced File Transfer

A feature that allows the transferring of files automatically between the Intuity CONVERSANT VIS and a synchronous host processor on a designated logical unit.

Enhanced Serial Data Interface

A software- and hardware-controlled method used to store data on magnetic peripherals.

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

A name for a local area network that uses 10BASE5 or 10BASE2 coaxial cable and InterLAN signaling techniques.

etStub

A system process that processes pre-Version 3.1 error message logging requests. These requests are transformed and passed on to the “logdaemon” process.

event

The notification given to an application when some condition occurs.

external actions

Specific tasks and interfaces controlled by Intuity CONVERSANT VIS software that allow a Script Builder application script to invoke processes and interact with other products or services. For example, a Intuity CONVERSANT VIS application script can invoke AUDIX Voice Power functionality through the used of an external action within an application script.

F

feature

A function or capability of a product or an application within the Intuity CONVERSANT VIS.

feature package

An optionally purchased package that may contain both hardware and software resources, which provides additional functionality to a standard system.

feature_tst script package

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 using the File Transfer System.

filename

Alphabetic characters used to identify a particular file.

FlexWord speech recognition

A type of speech recognition based on subword technology that recognizes phonemes or parts of words of American English vocabularies. See “subword technology.”

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.

function key

A key, labeled F1 through F8, on your keyboard to which the Intuity 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 nonremovable high-density magnetic media based on a predetermined format for retrieval by the system at a later date.

hardware

The physical components of a computer system. The central processing unit, disks, tape and floppy drives, etc., are all hardware.

hardware upgrade

Replacement of one or more fundamental platform hardware components (for example, the CPU or hard disk drive), but the existing platform and other existing optional circuit cards remain.

High Level Language Applications Programming Interface (HLLAPI)

An application programming interface that allows user to write custom applications that can communicate with the host via an API.

HLLAPI

See "High Level Language Applications Programming Interface."

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.

idle channel

A channel that either has no owner or is owned by its default owner and is onhook.

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 nonindexed table, can 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 circuit card

The IVP4 or IVP6 circuit 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 Intuity CONVERSANT VIS, the interface is designed to provide you with easy access to the software's capabilities.

interrupt

The termination of voice and/or telephony functions when some condition occurs.

Intuity Response Application Programming Interface

A library interface that provides a standard development interface for voice-telephony applications.

ipcs

A command that reports interprocess communication facilities status.

IRAPI

See "Intuity Response Application Programming Interface."

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."

library states

The state information about channel activities maintained by the IRAPI.

line side T1

A digital method of interfacing a Intuity 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 Intuity CONVERSANT 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 Intuity CONVERSANT VIS 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 Intuity CONVERSANT VIS VERSION 5.0 screen from which you are able to enter System Administration 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.

masked event

An event that an application can ignore (that is, the application can ask not to be informed of the event).

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 disk operating system developed by the Microsoft Corporation.

MTC

See "maintenance process."

multi-threaded application

A single process/application that controls several channels. Each thread of the application is managed explicitly. Typically this means state information for each thread is maintained and the state of the application on each channel is tracked.

N

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.

new error logging environment

A more flexible and informative environment for logging errors and status messages (introduced in CONVERSANT VIS Version 3.1). Customer applications created earlier than V3.1 that log messages require conversion to this new environment.

new operating system

The UnixWare operating system being introduced in Intuity CONVERSANT VIS V5.0.

nonindexed table

A table that may be searched only in a sequential manner and that cannot be searched via a field name.

nonmasked event

An event that must be sent to the application. Generally, an event is nonmaskable if the applicaiton would likely encountered state transition errors by trying to ignore the event.

null value

An entry containing no value. A field containing a null value is normally displayed as blank and is different from a field containing a value of zero.

O**obsolete hardware**

Hardware that is no longer supported on Intuity CONVERSANT VIS V5.0.

on-line help

Messages or information that appear on the user's screen when a "function key" (F1 through F8) is pressed.

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.

permanent process

A process that starts and initializes itself before it is needed by a caller.

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 filtering

The rejection of unrecognized speech. The WholeWord and FlexWord speech recognition packages can be programmed to reprompt the caller if the spoken response was not recognized by the VIS.

phrase tag

A string of up to 50 characters that identify the contents of a speech phrase used by an application script.

platform migration

See "platform upgrade."

platform upgrade

The process of replacing the existing platform with a new platform.

poll

A message sent from a central controller to an individual station on a multipoint network inviting that station to send if it has any traffic 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 to transmit and receive information on shared facilities.

port

A connection or link between two devices that allows information to travel to a desired location. See "telephone network connection."

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 Intuity CONVERSANT VIS documentation, the computer on which UnixWare and Intuity CONVERSANT VIS 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.

pseudo driver

A driver that does not control any hardware.

pulse code modulation

A digital modulation method of encoding voice signals into digital signals. See also "adaptive differential pulse code modulation."

R

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 board

A Intuity CONVERSANT VIS board that is equipped standard on all new MAP/100 and MAP/40 platform purchases. This card, available with a built-in modem, allows remote personnel (for example, field support) to access all Intuity 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.

reuse

The concept of reusing an existing system component after a software upgrade or platform migration.

roll back

To cancel changes to a database since the point at which changes were last committed.

rollback segment

A portion of the database that records actions that should be undone under certain circumstances. Rollback segments are used to provide transaction rollback, read consistency, and recovery.

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

The set of instructions for the Intuity CONVERSANT VIS to follow during a transaction.

Script Builder

An optional software package that provides a menu-oriented interface designed to assist in the development of custom voice response applications on the VIS.

SCSI

See “Small Computer System Interface.”

shared database table

A database table that is used in more than one application.

shared speech

Speech that is a part of more than one application.

shared speech pools

A parameter that allows the user of a voice application to share speech components with other applications.

Single Inline Memory Modules

A method of containing random access memory (RAM) chips on narrow circuit card strips that attach directly to sockets on the CPU circuit card. Multiple SIMMs are sometimes installed on a single CPU circuit card.

single-threaded application

An application that runs on a single voice channel.

slave

A circuit card that depends on the TDM bus for clock information.

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, UnixWare software and the Intuity CONVERSANT VIS Version 5.0 software.

software upgrade

The installation of a new version of software. The existing platform and circuit cards are kept.

source system

The system from which you are upgrading (that is, your system as it exists *before* you upgrade).

speech energy

The amount of energy in an audio signal. Literally translated, it is the output level of the sound in every phonetic utterance.

speech envelope

The linear representation of voltage on a line. It reflects the sound wave amplitude at different intervals of time. This envelope can be plotted on a graph to represent the oscillation of an audio signal between the positive and negative extremes.

speech file

A file containing an encoded speech phrase.

speech filesystem

A collection of several talkfiles. The filesystem is organized into 16-Kbyte blocks for efficient management and retrieval of talkfiles. The Intuity CONVERSANT VIS speech filesystem is not consistent with standard UNIX filesystems, 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 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 an Intuity 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.

subword technology

A method of speech recognition that recognizes phonemes or parts of words of American English vocabularies. See "whole-word technology."

switch

A software and hardware device that controls and directs voice and data traffic. A customer-based switch is known as a "private branch exchange."

switch hook

The device at the top of most telephones that is depressed when the handset is resting in the cradle (on hook). The device is raised when the handset is picked up (the telephone is off hook).

switch hook flash

A signaling technique in which the signal is originated by momentarily depressing the "switch hook."

switch interface administration

The component of the 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 3000 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 Intuity CONVERSANT VIS 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 can contain up to 65,535 phrases and the speech filesystem can contain multiple talkfiles.

target system

The system to which you are upgrading (that is, your system as you expect it to exist *after* you upgrade).

TDM

See "time-division multiplex."

telephone network connection

The point at which a telephone network connection terminates on an Intuity CONVERSANT VIS. Supported telephone connections are Tip/Ring and T1.

Terminal Emulator

Software that 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 can be used for prompts or for text retrieved from a database or host, and can be spoken in an application with prerecorded speech. Text-to-Speech application development is supported through 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, with each assignment being for a discrete time interval.

Tip/Ring

A term used to denote analog telecommunications using four-wire media.

Token/Ring

A ring type of local area network that allows any station in the network to communicate with any other station.

trace

A command that can be used to monitor the execution of a script.

traffic

The flow of information or messages through a communications network for voice, data, or audio services.

transaction

Comprised of the exchanges between the caller and the voice system. A transaction can involve one or more telephone network connections and voice responses from the Intuity CONVERSANT VIS. It can also involve one or more of the VIS optional features, such as speech recognition, 3270 host interface, FAX response, etc.

transaction state machine process

A multi-channel IRAPI application that runs applications driven by script information.

transient process

A process that is created dynamically only when needed.

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 multiuser, multitasking computer operating system developed by the Bell Telephone Laboratories division of AT&T.

UNIX shell

The command language that provides a user interface to the UNIX operating system.

upgrade image tape

A tape, optionally provided to you by the Technical Service Organization, containing the new operating system and Intuity CONVERSANT VIS V5.0 base software in a standard configuration which is compatible with your target system.

upgrade scenario

The particular combination of current hardware, software, application and target hardware, software, applications, etc.

V

vi editor

A screen editor used by the Intuity CONVERSANT 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.

vocabulary activation

The set of active vocabularies that define the words and wordlists known to the FlexWord recognizer.

vocabulary loading

The process of copying the vocabulary from the system where it was developed and adding it to the target system.

voice channel

A channel that is associated with an interface to the telephone network (Tip/Ring, T1, or PRI). Any Intuity CONVERSANT VIS application can 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 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 Intuity 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 nonvoice-related aspects of the system.

VROP

See “voice response output process.”

W**W****warning**

An admonishment used when there is a possibility of equipment damage.

WholeWord speech recognition

An optional feature based on whole-word technology that provides speaker independence, connected digit recognition, key word spotting, prompt interrupt, and DTMF support functionality. See “whole-word technology.”

whole-word technology

The ability to recognize an entire word, not the phoneme or a part of a word. See “subword technology.”

wink signal

An interruption of current to a busy lamp indicating that there is a line on hold.

word

A unique utterance understood by the recognizer.

wordlist

A set of words identified by a wordlist name. If the wordlist is part of an active vocabulary, the wordlist name appears as a recognition type in the Prompt & Collect mode field.

word spotting

The ability to search past extraneous speech during a recognition.

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