

**Using AViiON[®] Diagnostics
and the AV/AlertSM
Diagnostic Support System**

014-002183-01

A V i i O N[®]
P R O D U C T L I N E

Using AViiON[®] Diagnostics and the AV/AlertSM Diagnostic Support System

014-002183-01

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Using AViiON® Diagnostics and the AV/AlertSM Diagnostic Support System 014-002183-01

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DG/UX SVCNMR, Rev. 4.00

AViiON System Diagnostics, Rev. 11.00

A vertical bar in the margin of a page indicates substantive technical change from the previous revision. (The exception is Chapter 4, which contains entirely new material.)

About This Manual

This manual describes the diagnostic features available for AViiON® Family computers. It provides steps necessary to enable and operate the AV/AlertSM system, and describes how to use DG/UXTM-based Service Manager (SVC MGR) software (with optional on-line diagnostics) and the stand-alone AViiON System Diagnostics.

IMPORTANT: This manual does *not* provide details about managing or troubleshooting a CLARiiONTM disk-array storage system or other peripheral devices configured with your AViiON computer. For this information, refer to your storage system documentation, and to the DG/UX system administrator's documentation set. These manuals are listed in the "Related Data General Manuals" section, later in this Preface.

As DG/UX system administrator (or any person responsible for maintaining AViiON hardware), you can use this book to navigate and use the menu-based diagnostic utilities of on-line and stand-alone system diagnostics, whether or not your computer has AV/Alert enabled.

If your AViiON computer is under warranty or has a valid hardware service contract, you can use this manual to configure your computer to take advantage of AV/Alert remote diagnostic features; you can learn how to view status, manage remote access, reset the AV/Alert modem, and dial out to an authorized support site.

About This Revision

This revision incorporates the following modifications and additions:

- 1. New AV/Alert support menu options within DG/UX Service Manager (SVC MGR) software, effective with SVC MGR 4.0, including:**
 - Quick and comprehensive AV/Alert status display
 - Streamlined installation
 - Menu-driven message transmission
 - Error management status and MI call tracking
- 2. SVC MGR On-line Diagnostics is now available on all AViiON computers (with or without AV/Alert).**
- 3. Minor modifications and additions within the stand-alone diagnostics, effective with AViiON System Diagnostics Revision 11.0.**

How This Manual Is Organized

■ This manual contains five chapters and three appendixes. The following briefly describes the content of each:

Chapter 1 provides an overview of each diagnostic component for AViiON computers, and suggests when to use particular features; differentiates between AV/Alert features available to warranty/contract holders only, and tools accessible to all users regardless of warranty or contract status.

Chapter 2 explains how to set up and enable AV/Alert for the first time.

Chapter 3 explains how to make routine and emergency use of AV/Alert features; outlines related menu options and applications.

■ **Chapter 4** describes the optional on-line diagnostics portion of DG/UX Service Manager (SVC MGR) software that ship with the AViiON Diagnostics release media. Explains how to start on-line diagnostics and how to use the on-line tools to test keyboard, mouse, and printers.

Chapter 5 describes the stand-alone AViiON System Diagnostics that ship with every AViiON computer. Explains how to start the diagnostics, and how to make a bootable disk or tape copy of the diagnostic operating system. Explains how to use stand-alone diagnostic tools to verify your computer's hardware operation, to test individual components (graphics controller, monitor, keyboard, and mouse — or, asynchronous terminal connections, LAN connections), and to maintain removable media.

Appendix A provides quick steps to follow if there's ever a problem with your AV/Alert system and an authorized Data General representative needs to access the computer remotely.

Appendix B provides some emergency troubleshooting tips and a quick reference for getting assistance from this manual for specific problems.

Appendix C summarizes the menu structure of each diagnostic product.

Related Data General Manuals

You received a comprehensive documentation package with your AViiON computer. Within this manual, we refer to the following manuals; they are a small subset of manuals available. Refer to the *Guide to AViiON® and DG/UX™ Documentation* (069-701085) for a complete description of AViiON hardware and DG/UX operating system documentation.

AViiON Model-Specific Hardware Manuals

Installing and Operating AViiON® 7400 Series Systems (014-002176)

Describes how to unpack, set up, and start a new system. Describes a routine cold start, controlled powerdown procedures, and System Control Monitor (SCM) menus and commands. It also provides hardware technical and configuration specifications, solutions to common powerup problems, external cable listings, and I/O pin assignments.

Installing, Operating, and Expanding Your AViiON® 500 Workstation (014-002220)

Describes how to unpack, set up, and start a new AViiON® 500 workstation, readying it for the installation of system software. The manual also provides illustrated instructions and detailed information to help you replace parts and add expansion memory. Explains how to boot devices and change firmware parameters using the System Control Monitor (SCM).

Installing, Starting, Expanding and Maintaining AViiON® Computers: 400, 412, 4100, and 4300 Series (014-002083)

Describes how to unpack, set up, and start the computer. Explains how to add or replace drives, memory modules, the system board assembly, CPU board, power supply, fan assembly, and PROM components. Provides suggestions for resolving powerup problems and explains how to boot devices and change firmware parameters using the System Control Monitor (SCM).

Operating AViiON® 6280 and 8000-8 Series Systems (014-002177)

Describes a routine cold start, controlled powerdown procedures, and System Control Monitor (SCM) menus and commands. It also provides hardware technical and configuration specifications, solutions to common powerup problems, external cable listings, and I/O pin assignments.

Operating AViiON® 8400 Series Systems (014-002178)

Describes a routine cold start, controlled powerdown procedures, and System Control Monitor (SCM) menus and commands. It also provides hardware technical and configuration specifications, solutions to common powerup problems, external cable listings, and I/O pin assignments.

Setting Up, Starting, Expanding and Maintaining AViiON® 530 and 4600 Computers
(014-002091)

Describes how to unpack, set up, and start the computer. Explains how to add or replace drives, memory modules, the system board assembly, CPU board, power supply, fan assembly, and PROM component. Provides suggestions for resolving powerup problems; explains how to boot devices and change firmware parameters using the System Control Monitor (SCM).

Setting Up and Starting AViiON® 5000 and 7000 Series Computers (014-001806)

Describes how to unpack, set up, and start the computer. Provides suggestions for resolving powerup problems; explains how to boot devices and change firmware parameters using the System Control Monitor (SCM).

Setting Up, Starting, and Maintaining AViiON 210, 300CD, and 310CD Workstations
(014-001886)

Describes how to unpack, set up, and start a new AViiON® 210, 300CD, or 310CD workstation, readying it for the installation of system software. The manual also provides illustrated instructions and detailed information to help you replace parts and add expansion memory. Explains how to boot devices and change firmware parameters using the System Control Monitor (SCM).

Starting AViiON® 6000 Series Computers (014-001819)

Describes basic hardware components and maximum configurations of AViiON 6000 and 8000 series computers. Explains how to power up the computer, provides suggestions for resolving powerup problems, and explains how to boot devices and change firmware parameters using the System Control Monitor (SCM).

Disk-Array Storage and Mass-Storage System Manuals

Installing and Operating the Model 10565 Peripheral Housing Unit (014-001810)

Describes how to unpack, inspect, install, and power up the unit. Explains how to replace the power supply, line cord, and fan; provides general instructions for replacing a drive. Lists electrical and environmental specifications.

Installing, Operating, and Expanding the CSS3 Mass-Storage Subsystem
(014-002235)

Contains step-by-step procedures that explain how to connect the CSS3 to AViiON series or ECLIPSE MV/Family systems. It also contains information that explains how to power up the CSS3 and how to add or replace customer-replaceable units (CRUs).

The CLARiiON™ Disk-Array Storage System with DG/UX™ (014-002168)

This manual applies to subsystems with GridMgr licensed internal code revision 4.60 or higher. Describes how to install, manage, and maintain the deskside disk-array subsystem and how to operate and maintain the rackmount subsystem. Describes how to use the GridMgr software to plan, set up, and manage a subsystem's physical disk configuration.

The CLARiiON™ Tape-Array Storage System with the DG/UX or AOS/VS II Operating System (014-002181)

For system managers, this manual explains how to understand and/or configure and use a CLARiiON tape-array storage system.

Setting Up and Managing a High-Availability Disk-Array Subsystem (014-002094)

Describes the components of a high-availability disk-array (H.A.D.A.) subsystem and the possible physical disk configurations. Explains how to use the DG/UX Gridman utility to plan, set up, and manage physical disk configurations. Describes how to add and replace customer-replaceable unit (CRUs).

DG/UX System Administrator Manual Set

Installing the DG/UX™ System (093-701087)

Shows how to install the DG/UX operating system on AViiON computers. Instructions address first-time installations on new hardware, installations on existing systems, and upgrades to a newer release of the software.

Customizing the DG/UX™ System (093-701101)

Explains how to tailor the DG/UX system to your site. Includes descriptions of how to add user home directories, printers, terminals, third-party packages, operating system clients, and secondary releases.

Managing the DG/UX™ System (093-701088)

Discusses the concepts and tasks related to DG/UX system management. Provides a general orientation to the administrator's job as well as instructions for using the **sysadm** facility to manage disk resources, user profiles, file systems, printers, tape drives, and other elements of your system.

Reader, Please Note:

Throughout this manual we use certain symbols in command lines.

Symbol	Means
<code>↵</code>	Press the New Line, Carriage Return (CR), or Enter key on your terminal keyboard.
<code><CTRL-D></code>	Hold the Control key down and press the lowercase D key (d) on your terminal keyboard.
<code>%</code>	The UNIX® shell prompt.
<code>#</code>	The UNIX superuser prompt.

In examples we use:

This typeface to show your entry.

This typeface to show system queries and responses.

**AV/
ALERT**

Where this book describes AV/Alert-only functions, we set off the text between borders with a margin note (as seen here). When entire chapters relate only to AV/Alert, the AV/Alert notation appears in the top margin of each page.

Text applies only if AV/Alert is enabled; your computer must be under hardware service contract or within its 90-day warranty period.

If you do not use the AV/Alert system, you may skip these specially marked portions of text.

Terms

We use the following terms and phrases as defined below.

Within text, “press New Line” or “press Enter” means that you should press the Enter key on the keyboard that ships with an AViiON workstation, or the New Line key on the Data General DASHER® keyboard. If you are using another keyboard compatible with the industry-standard IBM PC AT® keyboard, the equivalent key is usually marked Enter, Return, or with a symbol such as ↵ or ↵.

The term *server* refers to an AViiON computer that provides user services through direct terminal lines and/or a local area network (LAN). Examples are a *stand-alone server*, which provides operating system support via direct terminal access, and a *network server*, which provides operating system support to client computers across a LAN. Some computers function as both stand-alone and network servers.

The term *workstation* refers to a single-user AViiON computer that provides graphics computing, either as a stand-alone station or as a client to a server system.

The *system console* refers to the keyboard and display device that receives powerup diagnostic test messages and from which you bring up your operating system. A workstation's system console consists of the graphics monitor and keyboard, both connected to system board interfaces on the computer unit chassis. A server's system console consists of an asynchronous terminal with keyboard; it provides an ASCII character set in ANSI or VT100/VT200-emulation mode, and is connected to an RS-232-C system board interface on the computer unit chassis.

Contacting Data General

Data General wants to assist you in any way it can to help you use its products. Please feel free to contact the company as outlined below.

Manuals

If you require additional manuals, please use the enclosed TIPS order form (United States only) or contact your local Data General sales representative.

Telephone assistance

If you are unable to solve a problem using any manual you received with your system, free telephone assistance is available with your hardware warranty and with most Data General software service options. If you are within the United States or Canada, contact the Data General Customer Support Center (CSC) by calling 1-800-DG-HELPS. Lines are open from 8:00 a.m. to 5:00 p.m., your time, Monday through Friday. The center will put you in touch with a member of Data General's telephone assistance staff who can answer your questions.

For telephone assistance outside the United States or Canada, ask your Data General sales representative for the appropriate telephone number.

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End of Preface

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1 An Overview of AViiON Diagnostic Options

Read This Chapter

- ▶ To learn about your diagnostic options.
- ▶ When you're *not* in the middle of an emergency; it provides overview information, not step-by-step instructions. Refer to Appendix B or use the Index of this manual for quick assistance with a system problem.

This chapter describes the diagnostic options available to you for testing and troubleshooting AViiON® computer systems. The first section of the chapter provides an overview of AViiON diagnostic support; it defines both standard and enhanced features of AViiON Diagnostics. The rest of the chapter describes each diagnostic component, as follows:

- The AV/Alert Support System (*enhanced support*)
- DG/UX Service Manager (SVC MGR) software (*standard and enhanced support*)
- AViiON System Diagnostic stand-alone software (*primarily standard support, added enhanced options*)
- Diagnostic support in AViiON firmware (*standard and enhanced support*)

At the end of each subsection, you can learn where to find information about using the diagnostic options and features described.

About AViiON Diagnostic Support

Hardware and software diagnostics detect and isolate faults in your computer system; they provide information necessary to identify and to replace defective components. With added features of remote services, diagnostic support evolves from reactive problem resolution to predictive maintenance. The AV/Alert support system enables you to maximize system availability by identifying and isolating existing and potential problems before they lead to extended down time.

You have access to diagnostic support when the DG/UX™ operating system is running, as well as when your operating system is down. Most diagnostic features run automatically, with little or no action required of a system administrator; others provide interactive menus that allow you to choose specific tests to run manually.

DG/UX Service Manager (SVC MGR) software and AViiON System Diagnostics work in separate (stand-alone or on-line) environments, but are based on a similar user interface. With a valid hardware service contract, the two diagnostic products work together with AV/Alert to report errors automatically.

Does your AViiON Computer have Standard or Enhanced Support?

Data General offers two tiers (or levels) of error detection and reporting in its diagnostic products for AViiON computers: *standard* and *enhanced* diagnostic support.

- ▶ Standard diagnostic support, for all AViiON computers.

Standard diagnostic support includes firmware and software utilities that are available for the life of your AViiON computer, regardless of warranty or service contract status. These diagnostics are active by default.

Under standard diagnostic support, your computer reports all errors to the system console, based on a *pass* or *fail* diagnostic decision; errors cause system operation to stop. You must contact Data General to receive assistance for all failure conditions.

- ▶ Enhanced diagnostics, supplied by the AV/Alert system.

Enhanced diagnostics include standard diagnostic support, but add the additional features of automated error reporting and handling in the AV/Alert support system. You must enable AV/Alert with a proprietary password, available during your computer's warranty period or with a valid hardware service contract. Once the warranty period is complete, you must maintain an active service contract in order to use AV/Alert's enhanced diagnostic features.

With AV/Alert enabled, error messages pinpoint more directly the source of a system problem. AV/Alert automatically sends machine-initiated messages via a dedicated modem to a Data General AV/Alert Support computer. The support computer can process and handle many errors without operator intervention.

AV/ALERT

The AV/Alert Diagnostic Support System

The AV/Alert support system is your primary resource for maintaining AViON computer systems.

AV/Alert continuously monitors DG/UX error logs and device drivers for error conditions. If it detects an error, AV/Alert sends an automatic machine-initiated (MI) message to a designated Data General Support Center for handling.

AV/Alert integrates its automated error detection and reporting features with remote hardware testing and problem resolution. The result is a single, comprehensive diagnostic support system comprised of the following:

▶ **Machine-Initiated (MI) Calling**

- Automated Problem Detection
- Automated Problem Reporting (*MI Incident Generation*)

▶ **Automated Call Handling**

- Problem Solution Identification
- MI Incident Tracking
- Rapid Service Dispatch
- Problem Escalation

▶ **Remote Assistance Services**

- Remote Problem Resolution
- Electronic MI Incident Closure
- Remote Diagnostic Testing
- Software Updates

Figure 1-1 illustrates the AV/Alert Support System; the rest of this section describes the AV/Alert service components.

You receive AV/Alert hardware and software components with any AViON server. After warranty expiration, AV/Alert is enabled only during the active period of a hardware service contact.

IMPORTANT: All AViON computers with model numbers *4300 and above* support AV/Alert.

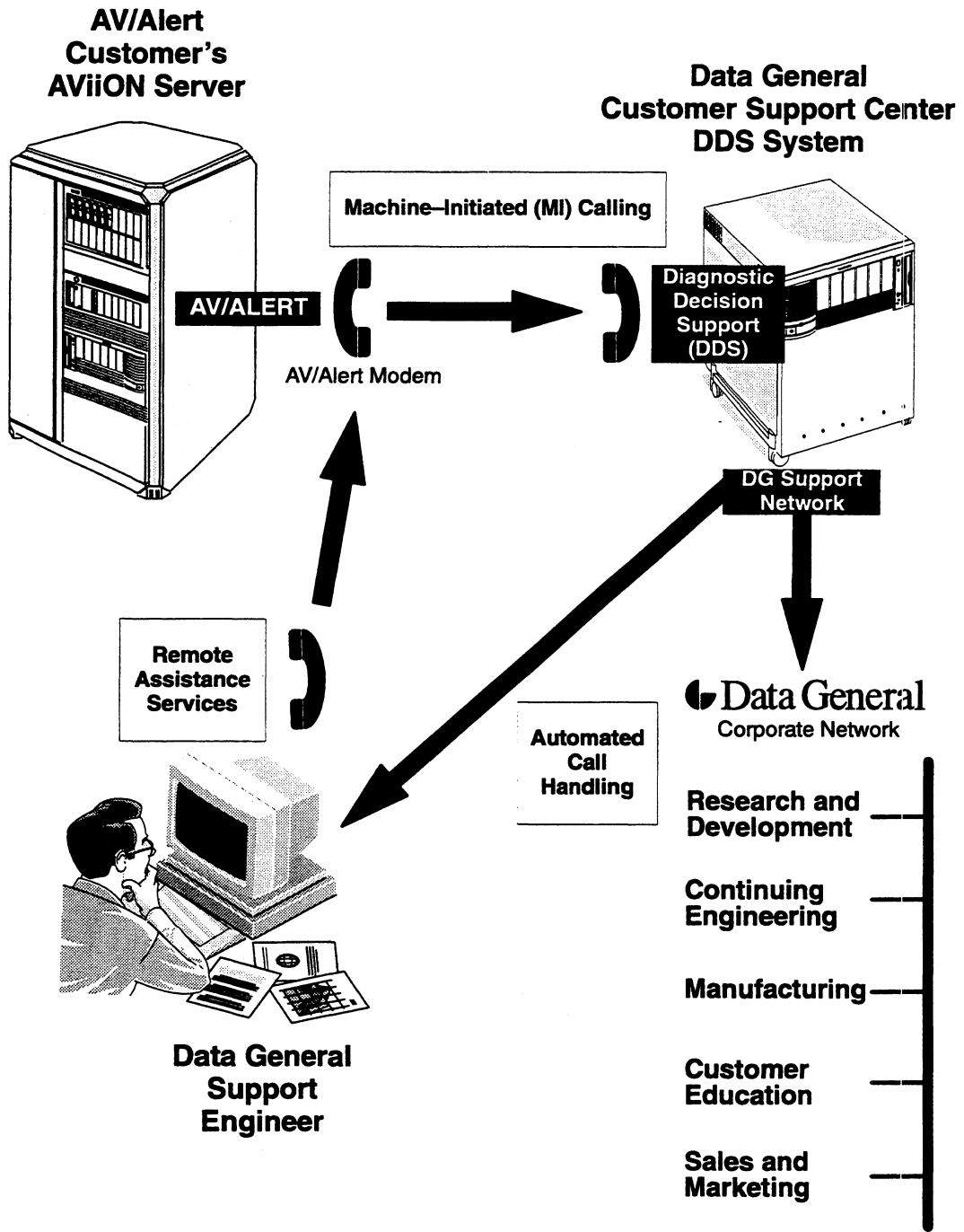


Figure 1-1 The AV/Alert Support System

Machine-Initiated (MI) Calling

In the event of a hardware or software problem resulting in a system error condition, firmware- or software-based AV/Alert components automatically transmit information about the incident to a Data General Customer Support Center computer.

Your computer's automated transmission is called a machine-initiated incident report, or *MI call*. AV/Alert processes errors reported to the computer from connected peripherals (such as a CLARiiON™ disk- or tape-array storage system) in MI calls.

Automated Call Handling

Diagnostic Decision Support (DDS) software installed on the AV/Alert support computer automatically determines the most valid response to a problem reported in an AV/Alert MI call. The support computer then distributes information as necessary to initiate replacement part orders, remote diagnostic support, service dispatch and/or engineering response.

Remote Services

A modem connection between your AViiON computer and the Data General support staff provides a constant platform for remote diagnostic applications. These might include resolution for a reported MI incident, scheduled preventive maintenance, or unscheduled maintenance with automated MI reporting of errors during off-hours.

You can also access Data General's Direct Access for Service Help (DASH) system or the hardware support Help Desk using your AV/Alert modem connection. These services are useful for obtaining tips about AViiON computers, for communicating design suggestions and concerns to Data General, or to investigate system problems yourself. DASH provides such services as an on-line Bulletin Board and interactive Mail for DG users, Weekly Bulletins, STR and problem reporting or status, and the Electronic Search Program (ESP).

Remote System Administration

In both stand-alone and on-line diagnostic environments, AV/Alert can provide a system administrator access to the console port of an AViiON server from any display device in the configuration. Authorized users can bring up a Virtual Console to perform any system function as though they were physically at the server console.

You can use this feature to remotely manage other AViiON computers running DG/UX *as long as they have AV/Alert enabled*, performing such tasks as analyzing dump information or installing software.

Where to Learn More

Use the steps in Chapter 2 to set up the AV/Alert system on your computer. Chapter 3 provides information you'll need to navigate AV/Alert's various menu options and to make routine use of AV/Alert features.

Contact your Data General representative for information about the DASH service.

DG/UX Service Manager Software

You receive the DG/UX™ Service Manager (SVCMMGR) software preloaded on disk or with the DG/UX System release media. You also receive SVCMMGR software and On-line System Diagnostics on separate release media, labeled AViON Diagnostics; this proprietary diagnostic package ships with every AViON computer.

Service Manager allows you to perform both standard and enhanced diagnostic functions while your operating system is running; it provides on-line access to many AV/Alert features previously based only in the System Control Monitor (SCM).

AV/Alert Service Support Menus

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You can view or change many AV/Alert features from within DG/UX Service Manager software using its Service Support menus.

Service Manager is your primary means for controlling and monitoring AV/Alert; its Main menu provides quick access to the following support options:

- Viewing Status on your AV/Alert System
 - Setting Up AV/Alert Configuration Parameters
 - Sending AV/Alert Messages
 - Viewing Error Management Information
 - Running On-line Diagnostics
-

On-line Diagnostics

SVCMMGR software provides optional, menu-based tools for exercising cpu, memory, disk, and tape controllers while DG/UX is running. The on-line tests exercise hardware subsystems by working through standard DG/UX drivers.

IMPORTANT: In order to use the On-line Diagnostics, you must load SVCMMGR from the AViON Diagnostics media, as described in Chapter 2; the on-line tools do not ship with the version of SVCMMGR software you receive with the DG/UX System.

You can run the on-line diagnostics on all AViON servers and workstations while logged on as root; you do not need a hardware service contract to use the on-line diagnostic utilities.

The on-line hardware acceptance test exercises system components for fifteen minutes (or, until an error is encountered). On systems with standard diagnostic support, a coded fault message appears on the system console screen, to be reported to the Data General Customer Support Center.

IMPORTANT: Because the On-line Diagnostics consume system resources, you may notice some performance degradation in the functioning of your DG/UX system. We recommend running diagnostics utilities during times of slow system usage whenever possible.

AV / ALERT

With AV/Alert enabled, the on-line diagnostics automatically send an AV/Alert MI call to the designated Data General Support Center.

Where to Learn More

Chapter 2 in this manual describes how to install SVCMGR software.

Chapter 3 in this manual provides information about using SVCMGR to make routine use of AV/Alert features.

Chapter 4 in this manual describes how to use the on-line diagnostics.

Refer to the DG/UX system administrator manual set (*Installing DG/UX™*, *Customizing DG/UX™*, and *Managing DG/UX™*) for information about the operating system.

Stand-alone AViiON System Diagnostics

The AViiON System Diagnostics provide a menu-based set of diagnostics for identifying and interactively exercising all components in AViiON servers and workstations. The diagnostics run in a stand-alone environment (while DG/UX is not running).

The stand-alone hardware acceptance test exercises all system components for fifteen minutes (or until an error is encountered). On systems with standard diagnostic support, a coded fault message appears on the system console screen, to be reported to the Data General Customer Support Center.

AV/ALERT

If a stand-alone diagnostic test detects an error on a system with AV/Alert enabled, an AV/Alert MI call is automatically sent to the designated Data General Support Center for handling.

You received the AViiON System Diagnostics software (stand-alone diagnostics) with your computer, preloaded on disk or on the release media labeled AViiON Diagnostics. This software is part of standard AViiON diagnostic support; you do not need a hardware service contract to use the stand-alone diagnostic utilities.

If you will not be using the AV/Alert system, we recommend that you use the stand-alone diagnostics to ensure that your hardware is installed and functioning properly after first installation, as well as whenever you add or replace a hardware component.

After the initial installation, you normally use diagnostic software only when you encounter or suspect a problem with your computer that causes your operating system to fail. However, you may choose to run the stand-alone diagnostics as part of a routine hardware maintenance plan.

Where to Learn More

Refer to your model-specific AViiON hardware documentation for more information about your computer hardware components and options; for further detail, refer to the hardware manual for particular hardware options.

Refer to Chapter 5 in this manual to learn how to boot, start, and stop stand-alone diagnostics, as well as for instructions for using its menus and instructions for making bootable copies of the stand-alone diagnostics. Chapter 5 also describes how to use each of the stand-alone diagnostic tools, and how to run the 15-minute stand-alone hardware acceptance test to fully verify your system integrity.

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Chapter 3 in this manual describes options on the “View MI Callout Menu,” accessible from the stand-alone diagnostics.

Diagnostic Support in AViiON Firmware

This section describes the diagnostics you receive as part of your computer's programmable read-only memory (PROM) hardware. Enhanced PROM support is available when you enable AV/Alert.

Powerup Testing

Each time your AViiON computer powers up, automated tests exercise the base system components to ensure proper functioning before booting your operating system. You know that powerup tests are in progress when you see the incremental alphanumeric display (0123456789ABCD...) on your system console screen, indicating progress through the series of powerup tests; you know that all tests have completed successfully when you see the message Passed.

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If AV/Alert detects a powerup error, it sends a machine-initiated incident packet (*MI call*) to Data General.

If a powerup test detects an error without AV/Alert enabled, it isolates the problem source and reports a failure message to the system console. You must then contact Data General to interpret the failure.

SCM Remote Service Interface (RSI) Menu

Your AViiON firmware includes the PROM-based System Control Monitor (SCM) menus and commands, providing an interactive method of altering computer system configuration parameters.

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You can access a set of menus for viewing and managing AV/Alert remote diagnostic functions by executing the SCM RSI command. Most of the functions of the SCM remote service menus are available while your operating system is running, via DG/UX Service Manager software. The values on the SCM menu are the same values as those you see on related DG/UX SVCMGR menus.

Where to Learn More

Refer to your model-specific AViiON hardware *Installing* or *Setting Up* documentation for information about the System Control Monitor (SCM).

End of Chapter

2 Setting Up AV/Alert

Read This Chapter

- ▶ After installing a new AViiON computer with DG/UX System software.
- ▶ To activate AV/Alert for the first time on an existing AViiON system.
- ▶ When you're ready to complete a set of step-by-step instructions; refer to Chapter 1 to learn *about* AV/Alert.

This chapter describes how to set up your AViiON computer to use AV/Alert machine-initiated (MI) calling and remote diagnostic access features *for the first time*.

IMPORTANT: If your AV/Alert site is in the U.S. or Canada and you are setting up a new AViiON server with the modem we shipped to you, your system is automatically configured for AV/Alert; you do not need to set up AV/Alert as described in this chapter. However, if your AViiON server runs a release of the DG/UX system prior to 5.4R2.10, or if you want to install the optional SVCNMR On-line Diagnostics, you'll need to load the AViiON Diagnostics package from the AViiON Diagnostics release media, as described in the "Installing SVCNMR Software" section of this chapter.

You can set up AV/Alert on any AViiON server (model 4300 and above) during the initial warranty period or with a valid Data General service contract.

Steps in this chapter assume that you have already completed the following:

- installed your computer hardware (according to model-specific installation documentation)
- installed revision 5.4 or greater of the DG/UX operating system

Refer to the *Installation Roadmap* pamphlet that came with your computer if you have not yet completed your system installation.

Before You Start

Although the components of AV/Alert exist on every AViON system, AV/Alert is not enabled until the following tasks are complete:

- ▶ Enable a working communication connection via modem.
- ▶ Set up AV/Alert, by
 - installing a dynamic password.
 - enabling MI calling.
 - installing the MI dialstring.
- ▶ Verify AV/Alert operation and register the system configuration with a Data General AV/Alert Customer Support Center computer.

By following the steps in this chapter, you enable and verify AV/Alert operation. Which steps *you* need to complete and which are completed by a Data General support engineer depends on your site location. *It is very important that you work with an authorized Data General AV/Alert representative to enable AV/Alert.*

Enabling the Communication Connection

To use AV/Alert features, your computer must have a constant communication link with a Data General AV/Alert Customer Support Center computer. In most cases, you'll make this connection using the modem that shipped with your AViON computer's Remote Assistance kit.

Once connected, your AV/Alert modem must remain on line and free from use at all times in order to receive the full benefits of AV/Alert service. Your telephone wall jack must provide a dedicated line; the modem cannot share telephone access except under certain conditions using a PBX extension line with bidirectional dialing. (Contact Data General if you want to use AV/Alert with a PBX telephone system.)

AV/Alert works with a number of Hayes AT-compatible modems. These instructions describe and illustrate use of the Zoom™ Telephonics MX2400 modem that shipped with your computer. You can use an equivalent auto-dial, Hayes-compatible, asynchronous modem for AV/Alert.

IMPORTANT: You must make the modem connection at your computer's rear panel SERVICE (or, MODEM/RS-232B) port, as described in your AViON model-specific hardware *Installing or Setting Up* documentation. By default, the DG/UX system identifies this port as /dev/tty00.

Setting Up the Modem

The steps in this section describe how to set up your AV/Alert modem. If you have not already connected modem cabling, complete all of the steps; begin with step 7 if you connected the cabling between modem and computer while installing your hardware. Skip this section if your modem is already installed.

1. Position the modem within cable-distance from your AViON computer, telephone wall jack, and ac power outlet.
2. Connect one end of the modem cable to the connector labeled Computer on the modem rear panel, shown in Figure 2-1.

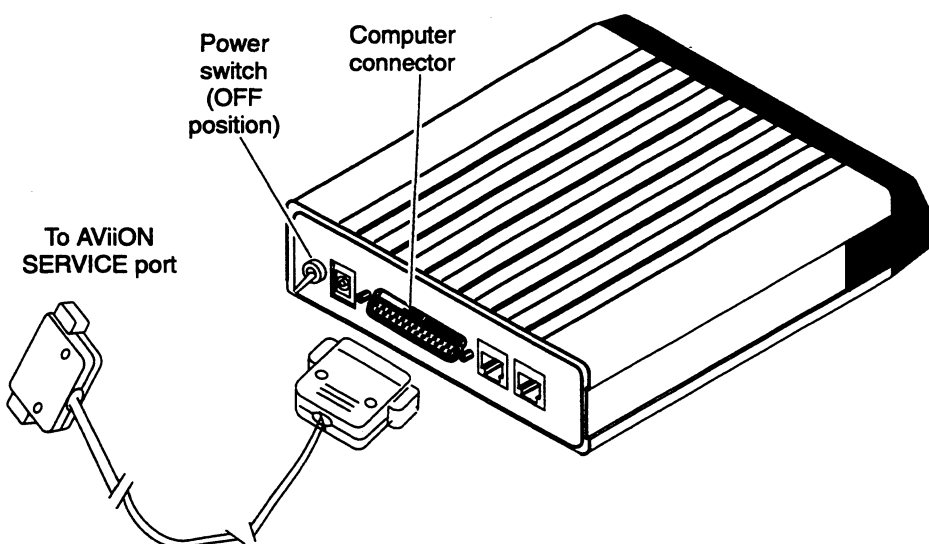


Figure 2-1 Connecting the Modem Cable

3. Skip this step and proceed with step 4 now *unless your computer modem port uses a 9-pin connector*. The rear panel modem port is labeled SERVICE. (If there is no SERVICE label, the port is labeled MODEM, or RS232-B.)

Connect together the modem cable and the 9- to 25-pin adapter cable, shown in Figure 2-2. You may also need a cable gender adapter. The adapter cabling came packaged with your computer; the modem cable came packaged with the modem.

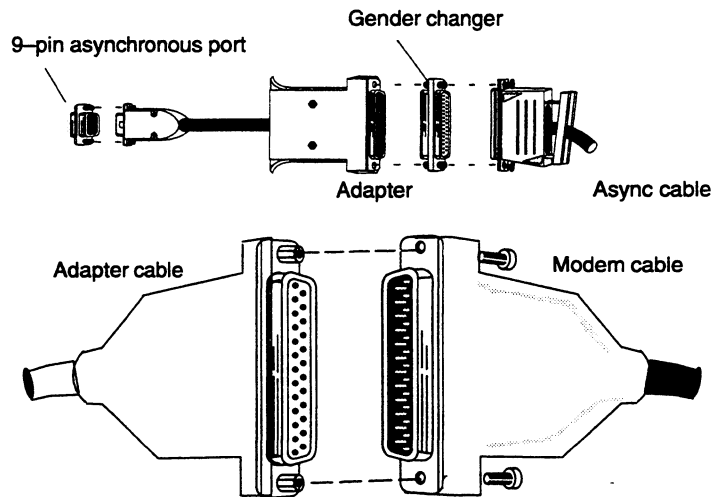


Figure 2-2 Connecting Cable Adapters to the Modem Cable

4. Connect the remaining (open) end of the modem cable to the appropriate connector on the rear panel of your AViON computer. This rear panel port is labeled SERVICE. (If there is no SERVICE port, use the port labeled MODEM or RS232-B.)
5. As seen in Figure 2-3, connect one end of the modular telephone cord (the one that came packaged with the modem) into either of the two modular connectors on the modem rear panel. Connect the other end of the same cord into the telephone wall jack. (You may need to remove a telephone cord already installed in the wall jack).
6. Connect the telephone cord into the second modular telephone connector on the back of the modem, as seen in Figure 2-3.
7. Be sure that the modem power switch is *off*. (Figure 2-3 shows the power switch in its ON position. Figure 2-1 shows the power switch in its OFF position; modem power is off when the switch is in a *downward* position.)
8. Push the bayonet connector on the power cube cable into the power connector on the rear panel of the modem; then, install the cube in an appropriate ac power outlet, as shown in Figure 2-3.

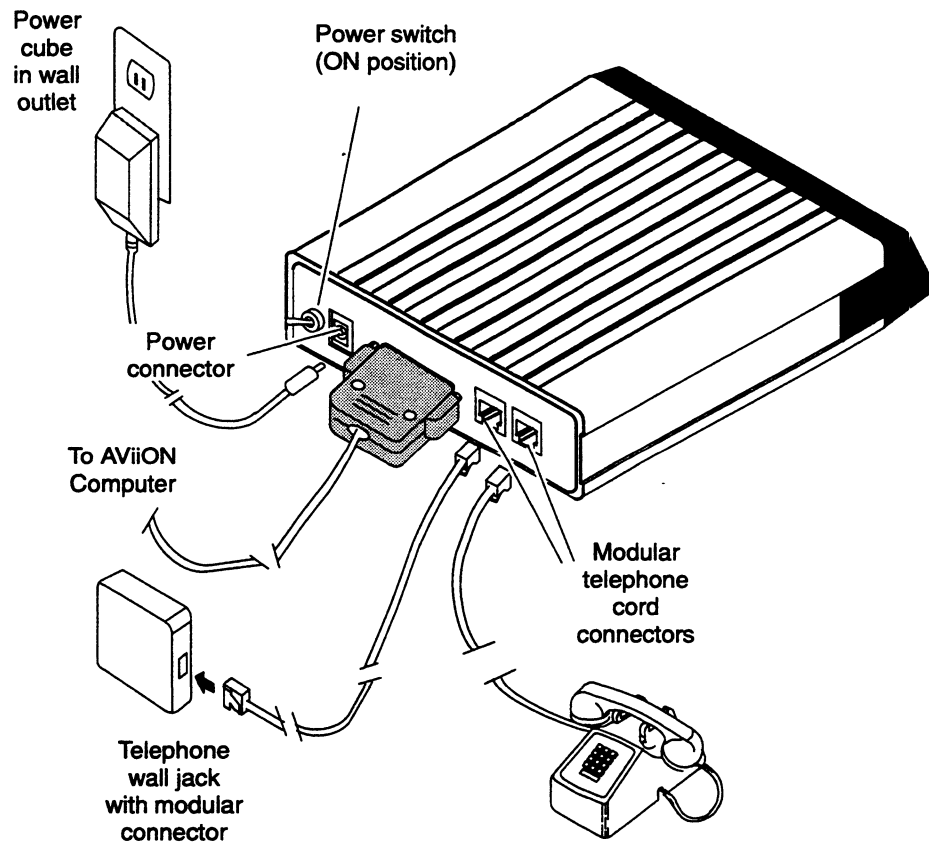


Figure 2-3 Connecting the Modem Power Cube and Telephone Cables

9. Turn on the modem power by moving the rear panel power switch *upward* to its ON position (shown in Figure 2-3).

The modem runs internal diagnostic tests; the modem ready (RD) indicator, shown in Figure 2-4, illuminates when these tests complete.

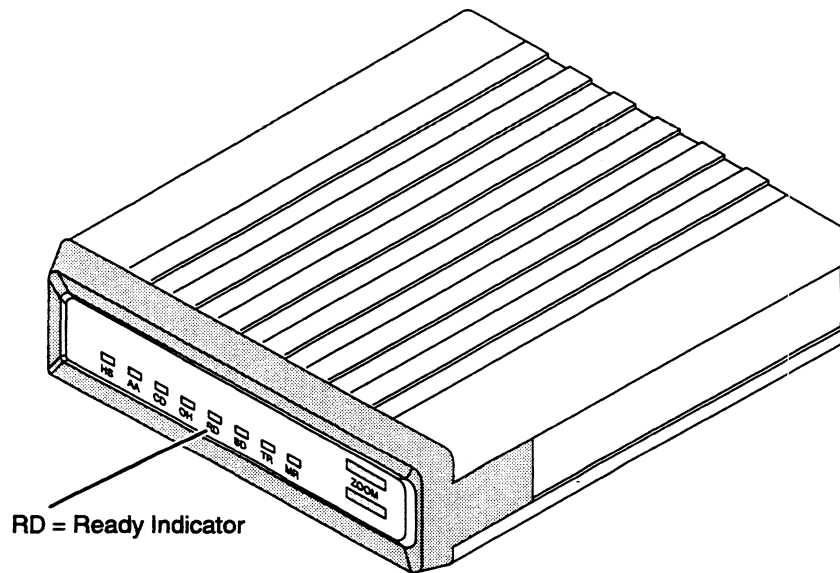


Figure 2-4 Modem Front Panel Ready Indicator

IMPORTANT: Refer to the manual that came with the modem for complete information about status indicators, as well as for troubleshooting procedures should a problem occur during modem powerup.

What Next?

Your modem is all set for use. AV/Alert lets you control how and when your computer allows remote access via the modem connection you've just set up. You'll set up AV/Alert parameters later in this chapter.

- ▶ To use the optional SVCMMGR On-line Diagnostics, proceed now with the steps in the next section "Installing SVCMMGR Software."
- ▶ If your AViON server runs a release of the DG/UX system prior to 5.4R2.10, proceed now with the steps in the next section "Installing SVCMMGR Software" to update your SVCMMGR software.
- ▶ If your AViON server runs DG/UX 5.4R2.10 or greater, and you do not wish to load the optional SVCMMGR On-line Diagnostics, proceed to the "Configuring AV/Alert Remote Access and MI Calling" section.

Installing SVCNMR Software

The steps in this section describe how to install DG/UX SVCNMR software from the AViON Diagnostics release media you receive with your AViON computer.

IMPORTANT: Beginning with DG/UX 5.4R2.10, the DG/UX system release media includes SVCNMR software (*without* On-line Diagnostics); you do not need to install SVCNMR if you have installed DG/UX 5.4R2.10 or greater and do not wish to use the On-line Diagnostics. You may use the AViON Diagnostics media to upgrade AV/Alert support in DG/UX 5.4.2 and DG/UX 5.4R2.01 systems.

Skip to the next section, "Configuring AV/Alert Remote Access and Machine-Initiated Calling," if SVCNMR Release 4.0 or greater is already installed on disk.

1. Log in to your DG/UX host as root.
2. If the host is running a multiuser system, bring the DG/UX system to init level 1.
3. Determine the amount of disk space in the target directory. For example:

```
# cd /usr )
# df -k opt )
filesystem      kbytes  used  avail capacity  mounted on
/dev/dsk/usr    120000  89025  15057   86%    /usr/opt
```

Proceed to the next step if *at least* 10 Mbytes is available.

- ▶ *If the space remaining is less than 10 Mbytes, use **sysadm** to create a logical disk partition with 10 Mbytes named **svcmgr**. Refer to the manual *Managing the DG/UX System* for instructions if you are not familiar with using the menu-driven **sysadm** program.*
4. Insert the AViON Diagnostics media in your tape or CD-ROM drive. (Documentation that came with the drive explains how to properly insert the media.)
 5. Stop the current release of DG/UX SVCNMR (if one is running), by typing:

```
# /usr/sbin/init.d/rc.dgserv stop )
```

6. Install the new release of SVCNMR under sysadm:

```
# sysadm installpackage )
```

If your system runs DG/UX 5.4R2.10 or greater, you're done. Systems running a DG/UX 5.4 release prior to 5.4R2.10 must build a new DG/UX kernel; complete the rest of the steps in this section.

7. Build a DG/UX kernel which includes the new diagnostic support:

```
# sysadm autoconfigure &
```

8. Bounce DG/UX to bring up the new kernel. You can accomplish this using the following command

```
# init 6 &
```

(Or, shut down and reboot the system as described in the manual *Managing the DG/UX System*).

9. Log in as root.

You may see some initialization messages as the DG/UX Services daemons are initialized and AV/Alert automatically sends a configuration packet to the AV/Alert Customer Support Center computer.

Configuring AV/Alert Remote Access and Machine-Initiated (MI) Calling

The steps in this section describe how to enable your computer for AV/Alert's remote access and MI features; you need them to complete setup and testing. Chapter 3 describes how to modify your system's routine use of these options if you don't want to use the default configuration.

You must complete all of the following steps before you can use AV/Alert. The steps assume that your modem is connected, powered on, and on-line; that you've installed SVCNMR on disk; and that you have created a custom kernel with the diagnostic support, as described in the previous sections.

IMPORTANT: Before you begin this section of steps, have your system's hardware contract number available. You can obtain the number from your Sales paperwork.

► Record the *Contract Number* here: _____

Starting the SVCNMR Software

1. Start the SVCNMR software using the following command line:

```
# svcnmr ↵
```

IMPORTANT: If this does not work, try the full pathname,
`/usr/sbin/svcnmr` ↵

2. The program displays its initial license information screen:

```
Licensed Material - Property of DGC  
Data General Proprietary Diagnostics
```

```
This diagnostic material contains information which is  
proprietary...
```

```
(C) DATA GENERAL CORPORATION 1992, 1993  
ALL RIGHTS RESERVED
```

```
This copyright notice does not constitute or evidence  
publication or public disclosure. Press New Line to  
proceed.
```

Press New Line when you are ready to clear the screen.

```
↵
```

3. The SVCNMR Main Menu appears, as follows:

```
Service Manager (Rev x.x)
=====
```

1. AV/Alert System Status
2. AV/Alert Setup
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics

Enter selection ('q' to quit; ^ previous menu): 2

Select item 2, "AV/Alert Configuration."

4. The AV/Alert Setup Menu appears, as follows:

```
AV/Alert Setup Menu
=====
```

1. Dynamic Password
2. Remote Access Parameters
3. Modem Parameters

Enter selection ('q' to quit; ^ previous menu):

Installing a Dynamic Password

You need a proprietary password to enable AV/Alert functions. You get this password from a Data General Customer Support Center representative, after they determine that your computer is either under warranty or has a valid hardware service contract.

The password is called *dynamic* because it has a fixed expiration date. AV/Alert service is disabled when your dynamic password expires, until you renew service by obtaining and installing a new password.

5. Select item 1, "Dynamic password." The Dynamic Password menu appears:

```
Dynamic Password
```

- 1 Install
- 2 Verify

Enter selection ('q' to quit; ^ previous menu): 1

6. Select item 1, "Install." Your screen displays a 10-digit *Maintenance Access Code*. (Each AViON computer generates its own *Maintenance Access Code*.) You're then prompted to enter a *Level 1 password*, as follows:

```
Maintenance Access Code: ABCDE12345
Enter New Level 1 Password -> _
```

The "level 1" password is the proprietary, dynamic password necessary to enable AV/Alert, as described at the beginning of this subsection.

7. Telephone your Data General AV/Alert Support Center.

IMPORTANT: Sites in the U.S. or Canada: telephone the Customer Support Center (CSC) at 1-800-DG-HELPS.
Outside the U.S. and Canada: contact your local Service Manager or Data General Sales representative.

Tell the customer service representative that you are setting up AV/Alert and need a *Level 1, dynamic password*. Be prepared to provide your maintenance access code and hardware service contract number. (Have your contract number ready and the screen in step 6 displayed. You recorded the contract number just before step 1.)

8. Type in the 24-digit password at the prompt, exactly as given. Note that the password is case sensitive:

```
Maintenance Access Code: ABCDE12345
Enter New Level 1 Password -> xxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

Press New Line; you return to the Dynamic Password menu.

9. To confirm the new password, select item 2, "Verify."

Dynamic Password

- 1 Install
- 2 Verify

Enter selection ('q' to quit; ^ previous menu): 2

The following appears if you entered a valid password in step 8:

```
FE Service Contract is Valid
Contract ends on dd/mm/yy
```

Press any key to continue ... _

Note that *Contract* in this context may refer to your warranty period; if so, the end date reflects the remainder of your warranty.

If you *don't* get this message, verify your password with the support engineer; then, return to item 1, "Install," (1 ↓) at the Dynamic Password menu, and try again. (In other words, repeat steps 6 through 9).

Enabling AV/Alert

Next, the AV/Alert support engineer needs to test remote access and enable MI calling features on your system.

Work with the support engineer to complete this quick process by following any instructions you're given. In summary, the engineer will be:

- Making sure Remote Access is enabled and functioning by calling in to your computer.
- Enabling MI Calling features.
- Installing and verifying the telephone number your modem will use for MI calls.

IMPORTANT: It is necessary to allow remote access to your computer by a Data General support representative to complete your AV/Alert setup. However, we recommend that you keep remote access *disabled* on a routine basis. With remote service temporarily disabled, there can be no unauthorized access to your computer via the AV/Alert modem. Refer to Chapter 3 to learn how to enable/disable remote access to your AV/Alert system.

What Next?

Once your support engineer tells you to proceed, continue with the steps in the next section to register your computer's hardware configuration.

Registering and Verifying Your AV/Alert System

To be sure that you receive full AV/Alert support, it is important that you register a copy of your system configuration with Data General's AV/Alert Support System. You do that by transmitting a report of your system inventory to the AV/Alert Support computer. Registering your hardware configuration ensures that configuration analysis runs properly in the event any error occurs.

These steps assume that your system console screen is displaying the UNIX superuser prompt.

1. Verify that each of the service daemons are up using the following command line:

```
# ps -ef | grep dgs
```

You should see each of the following processes running:

- dgsvc_d
- dgsvc_mid
- dgsvc_pwd
- dgsvc_timd
- dgsvc_inetd (only if a network is active)
- dgs_syslog
- dgs_strerr

Contact Data General if all the SVCNMR daemons do not appear.

Sending Test and Hardware Configuration Messages

2. Start the SVCNMR software:

```
# svcnmr (If unsuccessful, try, /usr/sbin/svcnmr)
```

3. The program displays its initial license information screen, then the Main Menu, as follows:

```
Service Manager (Rev x.x)
=====
1. AV/Alert System Status
2. AV/Alert Setup
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics
```

```
Enter selection ('q' to quit; ^ previous menu): 3
```

Select item 3, "AV/Alert Messages."

4. The AV/Alert Messages Menu appears:

```
AV/Alert Messages
=====
1. Test Call
2. System Hardware Configuration
```

```
Enter selection ('q' to quit; ^ previous menu): 1
```

Select item 1, "Test Call." SVCNMR responds with the message:

Warning: A call to the Customer Support Center will be made.

Do you wish to continue? (Y/N) [N]: **y**

5. Respond with Y (yes) to send an MI test packet to the AV/Alert Customer Support Center computer. This test packet verifies that MI calling is working properly.

IMPORTANT: You see a message indicating that AV/Alert is processing the test message, but you must examine your AV/Alert Log (as described in Chapter 3) to verify that the test went without error.

6. Select item 2, "System Hardware Configuration," to register your site. You see a list of your configuration; confirm that you want to send the configuration when prompted.
7. Return to the SVC MGR Main Menu by typing Shift-6 (^) or Enter.

The AV/Alert system is now installed on your computer and operational.

End of Chapter

3 Using AV/Alert

Read This Chapter

- ▶ To learn when to use AV/Alert features and how to navigate appropriate menus.
- ▶ When you need to view or to customize AV/Alert parameters.

IMPORTANT: To quickly respond when Data General needs remote access to your computer to resolve a problem, follow the steps in Appendix A, “Quick Steps: When Data General Needs to Access Your AV/Alert System.”

You don't really *do* anything to use the AV/Alert system once it's set up; it's an automated support system. You can, however, understand and (in some areas) manage your computer's use of AV/Alert. This chapter provides information you'll need to navigate and use interactive menu options (in firmware, within DG/UX Service Manager (SVC MGR) software, and while running the stand-alone AViON System Diagnostics) to make use of AV/Alert features.

Refer to Chapter 1 for more information about AV/Alert; Chapter 2 describes how to set up AV/Alert on your computer.

IMPORTANT: All AViON computers with model numbers *4300 and above* directly support AV/Alert.

Sections in this chapter explain how to:

- Display AV/Alert support menus and use special keyboard control features of the corresponding diagnostic products.
- View AV/Alert status and error information.
- Track Machine-Initiated (MI) calls, update incident information.
- Send test, configuration, or error information to the AV/Alert support computer at a Data General Support Center.
- Renew AV/Alert service.
- Enable, disable, limit, or manage remote access.
- Pause MI calls.
- Manage the AV/Alert modem connection.

Use the next section, “Navigating AV/Alert Support Menus,” to learn how to display and use each of the AV/Alert menus; then, refer to the section for the particular task you need to complete.

Navigating AV/Alert Support Menus

This section illustrates and describes the menu options you can access with a valid AV/Alert contract. Later sections of this chapter describe how to use the items on these menus for specific tasks.

Figure 3–2 illustrates menu options for managing AV/Alert while the DG/UX system *is* running, using SVCNMR software.

Figure 3–1 illustrates options available for managing AV/Alert *when the DG/UX system is not running*, using the following:

- System Control Monitor (SCM) **Remote Menu.**
- AViON System Diagnostics (stand-alone diagnostics) **MI Callout Menu**

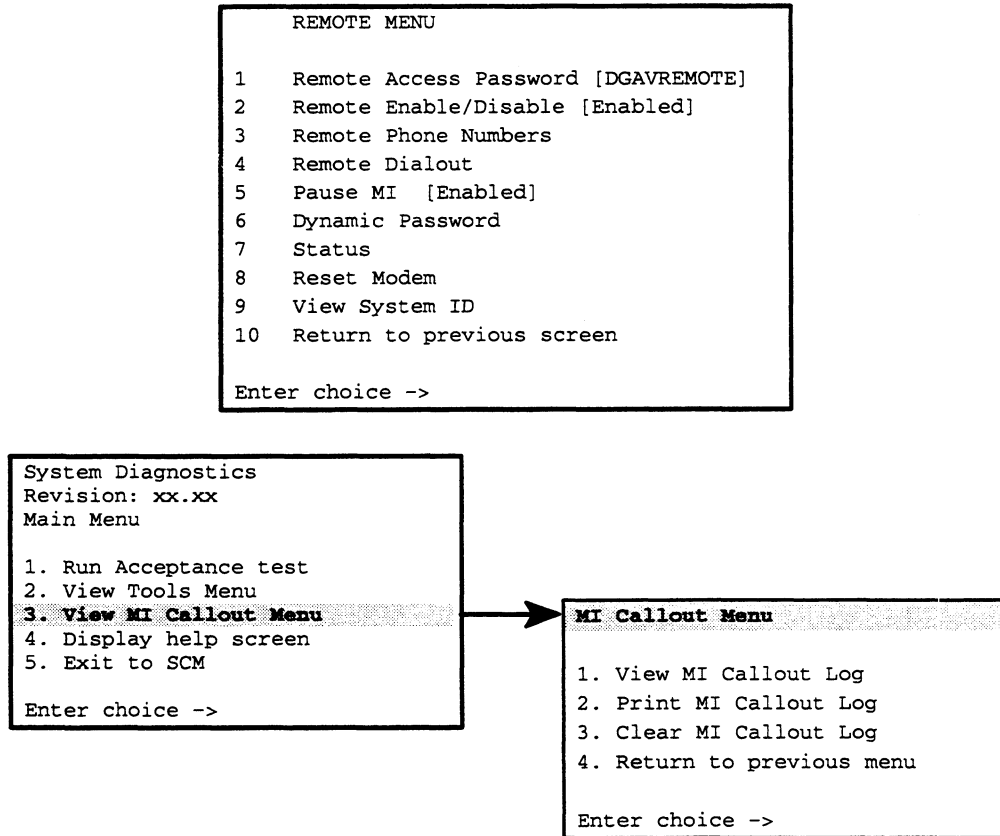


Figure 3–1 AV/Alert SCM and Stand-alone Support Menu

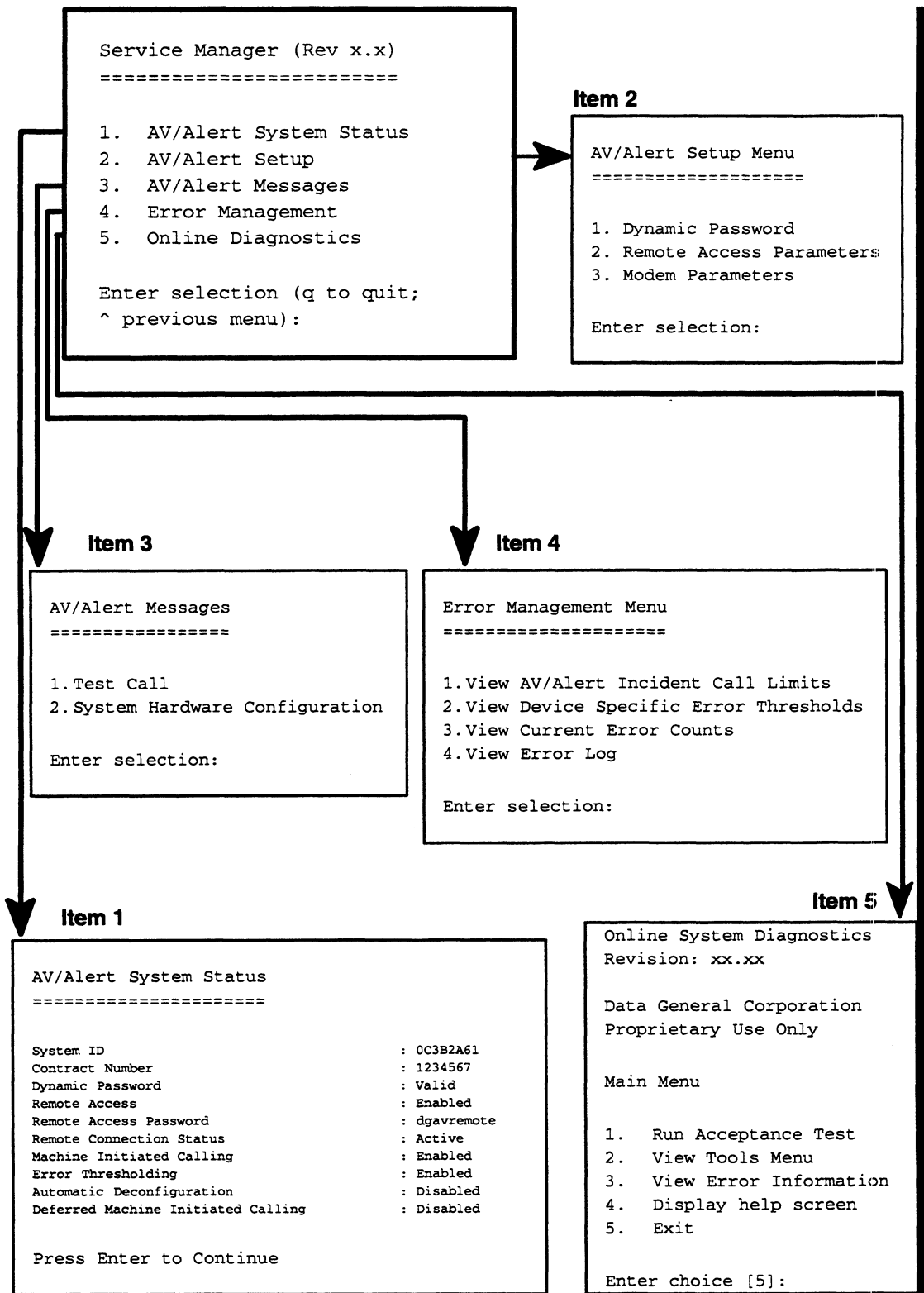


Figure 3-2 DG/UX SVCNMR: AV/Alert Support Menus

Using DG/UX Service Manager

The steps in this section describe how to start the SVCMMGR software and display its Main Menu.

1. Display the DG/UX superuser prompt; then, start the SVCMMGR software (pathname /usr/sbin/svcmmgr) using the following command line:

```
# svcmmgr ↵
```

2. The program displays its initial license information screen:

```
Licensed Material - Property of DGC  
Data General Proprietary Diagnostics
```

This diagnostic material contains information which is proprietary and confidential to Data General Corporation (DGC) and is the exclusive property of DGC. Unless there is a license agreement executed by DGC under which DGC has identified this diagnostic material and expressly licensed you, this diagnostic material is provided to you in trust under the "Data and Proprietary Rights" clause of your agreement with DGC only for use by or on behalf of DGC (including its subsidiary companies) during the warranty period and under any contract maintenance period. This diagnostic material, in whole or in part, is not to be reproduced by any means nor made available to any third party. You agree to return this diagnostic material to DGC at the end of the above identified period(s) or destroy this diagnostic material and, upon request, notify DGC in writing of such destruction.

```
(C) DATA GENERAL CORPORATION 1989 - 1993  
This copyright notice does not constitute or evidence  
publication or public disclosure.
```

Press Enter to proceed.

Press Enter when you are ready to clear the copyright screen.

```
↵
```

3. SVCMMGR checks first for a valid dynamic password.

```
Dynamic Password has been installed
```

Then, the SVCMMGR main menu appears.

Service Manager (Rev x.x)

=====

1. AV/Alert System Status
2. AV/Alert Setup
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics

Enter selection (q to quit; ^ previous menu):

Table 3–1 shows how you can use certain keys and key sequences to control the SVCMGR software while it is running.

Table 3–1 Keyboard Control Functions: DG/UX SVCMGR Software

Keyboard Entry	Result
↵	Begin execution of input; select the default at prompts; return to the previous menu.
q	Quit SVCMGR altogether and return to the DG/UX superuser prompt (#).
<SHIFT-6>	The caret, or uparrow key (^). Exits current screen and returns to previous menu.

Using the Stand-alone Diagnostics MI Callout Menu

AViON System Diagnostics maintains a log of MI calls made while running the stand-alone diagnostics. Refer to Chapter 5 for information about the stand-alone diagnostic operating system and displaying the AViON System Diagnostic Main Menu. Refer to the “Working With the AViON System Diagnostics MI Callout Log” section, later in this chapter, for instructions on displaying and using the MI Callout Menu to work with the AViON System Diagnostics MI Callout Log.

Using SCM Remote Service Menus

Refer to your model-specific hardware *Setting Up* or *Installing* manual to learn how to access the System Control Monitor (SCM) prompt and to learn about SCM commands and menus.

To display the SCM Remote Menu (Remote Service Interface, RSI), type the RSI command at the SCM prompt:

```
Jp#n/SCM> rsi
```

```
REMOTE MENU
```

- 1 Remote Access Password [DGAVREMOTE]
- 2 Remote Enable/Disable [Enabled]
- 3 Remote Phone Numbers
- 4 Remote Dialout
- 5 Pause MI [Enabled]
- 6 Dynamic Password
- 7 Status
- 8 Reset Modem
- 9 View System ID
- 10 Return to previous screen

```
Enter choice ->
```

IMPORTANT: If your dynamic password has expired (or, if there has never been one installed before), you need to install a dynamic password; refer to the “Installing a Dynamic Password” section later in this chapter. (You need a new password at initial AV/Alert installation and when renewing a service contract.) Complete the steps in Chapter 2 if you have never configured your system to use AV/Alert.

Your menu appears as follows:

```
REMOTE MENU
```

1. Dynamic Password
2. Return to previous screen

```
Enter choice -> 1
```

Getting Status on AV/Alert Functions

You can get information about how your AV/Alert system is currently configured, and how it is functioning. This section describes how to get status on the components of AV/Alert. Table 3-2 summarizes the status available on specific AV/Alert features and where you can get it.

Refer to the next section for information of how to track AV/Alert incidents and errors.

Table 3-2 Where to Get AV/Alert Configuration Status

Item	Status Supplied	Accessible From
System ID	Computer ID Number	SVCMGR AV/Alert System Status menu; SCM Remote menu (item 9).
Service Contract	Contract Number	SVCMGR AV/Alert System Status menu.
Dynamic Password Status	Valid/Invalid	SVCMGR AV/Alert System Status menu
Remote Access	Enabled/Disabled	SVCMGR AV/Alert System Status menu; SCM Remote menu (item 2).
Remote Access Password	Password	SVCMGR AV/Alert System Status menu; SCM Remote menu (item 1).
Remote Connection	Active/Inactive	SVCMGR AV/Alert System Status menu; SCM Remote menu (item 7).
MI Calling	Enabled/Disabled	SVCMGR AV/Alert System Status menu; SCM Remote menu (item 7).
Error Thresholds	Enabled/Disabled	SVCMGR AV/Alert System Status menu
Automatic Deconfiguration	Enabled/Disabled	SVCMGR AV/Alert System Status menu
Deferred MI Calling	Enabled/Disabled	SVCMGR AV/Alert System Status menu; SCM Remote menu (item 5).

Viewing the SVCNMR System Status Display

While DG/UX is running, you can view complete status of your computer's AV/Alert functions using the SVCNMR AV/Alert System Status menu item.

To see the current AV/Alert status, select item 1, "AV/Alert System Status" from the SVCNMR Main menu.

IMPORTANT: Refer to the "Navigating AV/Alert Support Menus" section (near the beginning of this chapter) if you need to learn how to display the SVCNMR Main Menu.

```
Service Manager (Rev. x.x)
=====
```

1. **AV/Alert System Status**
2. AV/Alert Setup
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics

```
Enter selection (q to quit; ^ previous menu): 1
```

You see a complete status screen, similar to the following:

```
AV/Alert System Status
=====
System ID                : 0C3B2A61
Contract Number         : 123456789
Dynamic Password        : Valid
Remote Access           : Enabled
Remote Access Password  : dgavremote
Remote Connection Status : Active
Machine Initiated Calling : Enabled
Error Thresholding      : Enabled
Automatic Deconfiguration : Disabled
Deferred Machine Initiated Calling : Disabled
```

Press Enter to Continue

You can change the status of some of these items; refer to later sections of this chapter to learn how:

- Remote Access (you can disable/enable)
- Remote Access Password (you can change the password)
- Remote Connection (you can change to Inactive by closing a connection, to Active by initiating a connection)

Only an authorized Data General Representative may alter the status of other items.

Displaying Status Information from the SCM

You can also view the status of most AV/Alert functions when DG/UX is *not* running, using the SCM Remote Service Interface (RSI). The next section describes these Remote Menu options.

Current AV/Alert Status

To see the current status of the AV/Alert modem and of remote access, machine-initiated calling, and remote dial-out components *when the DG/UX system is not running*, select item 7, "Status" at the SCM Remote menu.

IMPORTANT: Refer to the "Navigating AV/Alert Support Menus" section (near the beginning of this chapter) if you need to learn how to display the Remote menu from the SCM prompt.

REMOTE MENU

- 1 Remote Access Password [DGAVREMOTE]
- 2 Remote Enable/Disable [Enabled]
- 3 Remote Phone Numbers
- 4 Remote Dialout
- 5 Pause MI [Enabled]
- 6 Dynamic Password
- 7 Status**
- 8 Reset Modem
- 9 View System ID
- 10 Return to previous screen

Enter choice -> 7

You see a report indicating the current status of your AV/Alert modem and whether MI calling, remote access, and remote dial-out are enabled or disabled.

In the example of screen display below, MI and remote functions are enabled and the AV/Alert modem is ready, but currently idle:

```
*** Remote Status ***
*** Date 04-24-93 ***
*** Modem - ON LINE - No Carrier ***
*** Machine Call Out - ENABLED ***
*** Remote Access - ENABLED ***
*** Remote Dialout - ENABLED ***
```

System Identification Number

Each AViON computer has a unique hexadecimal identification number. AV/Alert uses this number to recognize each computer; you may need to supply the number while working with a Data General support engineer.

To view your system's ID number *when the DG/UX system is not running*, select the item 9, "View System ID," from the SCM Remote menu (9).

REMOTE MENU

- 1 Remote Access Password [DGAVREMOTE]
- 2 Remote Enable/Disable [Enabled]
- 3 Remote Phone Numbers
- 4 Remote Dialout
- 5 Pause MI [Enabled]
- 6 Dynamic Password
- 7 Status
- 8 Reset Modem
- 9 View System ID**
- 10 Return to previous screen

Enter choice -> **9**

Your unique system identification number appears, as follows:

System Identification Number: 0C3B2A61

Getting Status on Errors and Tracking AV/Alert Incidents

Table 3-3 summarizes where you can get status on errors and MI calls.

Table 3-3 Where to Get AV/Alert Error and Incident Status

Item	Status Supplied	Accessible From
AV/Alert Incident Call Limits	Maximum MI calls per day; maximum MI calls per hour.	SVCMGR Error Management Menu, (item 1).
Current Errors	Number of errors	SVCMGR Error Management Menu, (item 3).
Previous Errors	Date, description of MI calls.	SVCMGR Error Management Menu, (item 4); Stand-alone Diagnostics MI Callout Menu.
Device Error Thresholds	Limit for soft/hard errors	SVCMGR Error Management Menu, (item 2).
MI Callout History	Fault code, Incidents Reference Number (log of past 15 calls).	Stand-alone Diagnostics MI Callout Menu

Using the SVCMGR Error Management Menu

You can view information about how AV/Alert handles errors, and track MI incidents in the current AV/Alert Error log using the SVCMGR Error Management Menu.

To get to the Error Management Menu, select item 4 from the SVCMGR Main menu.

IMPORTANT: Refer to the “Navigating AV/Alert Support Menus” section (near the beginning of this chapter) if you need to learn how to display the SVCMGR Main Menu.

Service Manager (Rev. x.x)

=====

1. AV/Alert System Status
2. AV/Alert Setup
3. AV/Alert Messages
- 4. Error Management**
5. Online Diagnostics

Enter selection (q to quit; ^ previous menu): 4

The Error Management Menu appears as follows:

Error Management Menu

=====

1. View AV/Alert Incident Call Limits
2. View Device Specific Error Thresholds
3. View Current Error Counts
4. View Error Log

Enter selection (q to quit; ^ previous menu):

Incident Call Limits

Select item 1, "View AV/Alert Incident Call Limits." The current setting for maximum incidents per hour and per day appears. Factory defaults appear as follows:

Maximum Incident Calls Per Hour: 6
Maximum Incident Calls Per Day: 12

Device Error Thresholds

Select item 2, "View Device Specific Error Thresholds." For each component, you see the current setting for the number of soft and hard errors per hour the system will allow before sending an MI incident call.

The following represents default threshold settings for an AViON server:

```

Device Specific Error Thresholds
=====
                                Soft/Hours  Hard/Hours
1. 005-040013 33MHz Quad CPU Mother Board  [10  2  0  0]
2. 005-038750 33MHz CPU Complex (Deep Caches) [10  2  0  0]
3. 005-035592 VME 4/16 MB Token Ring Contrlr [10  2  0  0]
4. 118-014068 VME IEEE 802.3 CMC LAN Contrlr [10  2  0  0]
5. 118-010119 VME Terminal Controller      [10  2  0  0]
6. 000-000000 Undefined Part Number          [10  2  0  0]
7. 005-038911 Integrated Device            [10  2  0  0]
8. 118-010962 5 GB 4MM Helical SCan Tape Drv [10  2  0  0]
9. 118-007562 320/525 MB Cartridge Tape Drive [10  2  0  0]
10. 118-015462 520 MB Half Height SCSI DISK  [10  2  0  0]
11. 005-039463 SCSI Disk Array Fan Module    [10  2  0  0]
12. 005-039643 SCSI Disk Array VSC Module    [10  2  0  0]
    
```

-----Press Enter to Continue -----

Default soft error thresholds allow SIMM modules and disk/tape devices 12 occurrences of a soft error in a 24-hour period before AV/Alert sends an MI call and restarts the count.

► **Soft Errors include:**

- Memory ECC errors
- Disk retries
- Tape retries

Default hard error thresholds initiate an MI call after every hard error. There is, however, a system-level threshold that limits the number of messages to 12 in a 24-hour period and 6 incidents per hour.

► **Hard Errors include all failures (not soft errors).**

Current Error Counts

Select item 3, "View Current Error Counts." You see a report of the number of soft and hard errors received to date on each system component.

The following report represent an error-free AViON server:

```

Device Specific Error Counts
=====
1. 005-040013 33MHz Quad CPU Mother Board      [0]  [0]
2. 005-038750 33MHz CPU Complex (Deep Caches)     [0]  [0]
3. 005-035592 VME 4/16 MB Token Ring Contrlr        [0]  [0]
4. 118-014068 VME IEEE 802.3 CMC LAN Contrlr        [0]  [0]
5. 118-010119 VME Terminal Controller          [0]  [0]
6. 000-000000 Undefined Part Number       [0]  [0]
7. 005-038911 Integrated Device           [0]  [0]
8. 118-010962 5 GB 4MM Helical SCan Tape Drv [0]  [0]
9. 118-007562 320/525 MB Cartridge Tape Drive [0]  [0]
10. 118-015462 520 MB Half Height SCSI DISK [0]  [0]
11. 005-039463 SCSI Disk Array Fan Module  [0]  [0]
12. 005-039643 SCSI Disk Array VSC Module  [0]  [0]

```

-----Press Enter to Continue -----

Viewing the Error Log

Select item 4, "View Error Log." You see a list of all MI calls your computer has recently transmitted, with a date and timestamp.

IMPORTANT: Date and Time information reflect UTC (Greenwich Mean Time) values; your time zone offset is not used.

The following represents the contents of an AViON server's log:

```

Error Log Information
=====
(05-05-93 18:10:14) dgsvc_mid: could not connect to xxxxxx
(05-05-93 18:11:09) dgsvc_mid: going down on signal
(05-05-93 18:15:02) dgvc_s_mid: restarting
(05-05-93 18:32:38) dgsvc_mid: error with MODEM
(05-05-93 18:32:49) dgsvc_mid: checking for connect...NO CARRIER
(05-05-93 18:37:51) dgsvc_mid: Retrying.....
(05-05-93 18:37:57) dgsvc_mid: callout successful, Reference #DIB:0:724
(05-05-93 18:38:18) dgsvc_mid: callout successful, Reference #DIB:0:751

```

-----Press Enter to Continue -----

Note that the Reference Number information for successful MI calls is available in your log.

Using the Stand-alone AViiON System Diagnostics MI Callout Menu

AViiON System Diagnostics maintains a log of MI incident calls to the computer at a Data General AV/Alert Support Center sent while running the stand-alone diagnostics. The log contains a record of the last 15 (newest) calls. The stand-alone diagnostics MI Callout Menu allows you to access the log by viewing, printing, or clearing its contents.

Refer to the subsections below to use the MI Callout Log to work with a history of MI calls made while the stand-alone diagnostics are running.

Accessing the MI Log

1. Display the System Diagnostic Main Menu.

```
System Diagnostics
Revision: xx.xx
```

```
Data General Corporation
Proprietary Use Only
```

```
Main Menu
```

1. Run Acceptance test
2. View Tools Menu
- 3. View MI Callout Menu**
4. Display help screen
5. Exit to SCM

```
Enter choice [1]: 3)
```

2. From the stand-alone diagnostics Main Menu, select item 3, "View MI Callout Menu." The MI Callout Menu appears:

```
MI Callout Menu
```

1. View MI Callout Log
2. Print MI Callout Log
3. Clear MI Callout Log
4. Return to previous menu

```
Enter choice [4]:
```

Viewing the Log

- ▶ Select item 1, "View MI Callout Log" to see the first 15 entries in your log. The log display appears as follows:

```
MI CALLOUT LOG
(Log of first 15 callouts)
```

```
Faultcode           Incidence Reference Number
aa-bb-cc-dd-eee-ffff U12345678
```

```
Press New Line to return to the previous menu
```

IMPORTANT: The AV/Alert support computer at a Data General Support Center assigns an *incidence reference number* upon receipt of each MI call; it then transmits the number back to your computer and stores it in this log. Use this number if you need to contact Data General regarding a particular service call.

Printing the Log

- ▶ Select item 2, "Print MI Callout Log," to send the *View MI Callout Log* display to the parallel printer port.

Clearing (Resetting) the Log

- ▶ Select item 3, "Clear MI Callout Log," to empty and restart the log after viewing or printing.

Verifying or Installing a Dynamic Password

AViiON computers support two levels of diagnostic service and error reporting: *standard* and *enhanced* support. Refer to Chapter 1 for a description of standard and enhanced support levels.

To use the features of AV/Alert, you enable enhanced diagnostic support; unless your computer is within its warranty period, you must have a valid hardware service contract to do this. You activate AV/Alert by installing a proprietary password. Since the password automatically expires and must be renewed at the end of your warranty or contract period, it is called a *dynamic* password (as opposed to a static password that remains fixed until you decide to change it). You must install a new password to retain enhanced diagnostic support each time the existing dynamic password expires.

At initial AV/Alert installation, you installed the dynamic, level 1 password; this password is valid until the expiration of your warranty period. To renew AV/Alert support, you must renew your hardware service contract and install a new level 1 password.

You verify an existing level 1, dynamic password or install a new one using the "Dynamic Password" menu. Use this menu from the SVCMMGR AV/Alert Setup menu if DG/UX is running; if DG/UX is not running, access the Dynamic Password menu from the SCM Remote menu.

IMPORTANT: The steps in this section assume that you have already installed a dynamic password during your initial AV/Alert installation (described in Chapter 2).

1. Display the appropriate menu as described below. Refer to the "Navigating AV/Alert Support Menus" section (earlier in this chapter) if you need to learn how to display any of the AV/Alert support menus.

► If DG/UX is running:

- a. Display the SVCMMGR Main Menu.

```
Service Manager (Rev. x.x)
=====
1. AV/Alert System Status
2. AV/Alert Setup
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics
```

Enter selection (q to quit; ^ previous menu):

- b. Select item 2, "AV/Alert Setup." The AV/Alert Setup Menu appears:

```
AV/Alert Setup Menu
```

```
=====
```

1. **Dynamic Password**
2. Remote Access Parameters
3. Modem Parameters

```
Enter selection (q to quit; ^ previous menu):
```

- c. Select item 1, "Dynamic Password."

- If DG/UX is *not* running:

Display the SCM Remote Menu.

```
REMOTE MENU
```

- 1 Remote Access Password [DGAVREMOTE]
- 2 Remote Enable/Disable [Enabled]
- 3 Remote Phone Numbers
- 4 Remote Dialout
- 5 Pause MI [Enabled]
- 6 Dynamic Password
- 7 Status
- 8 Reset Modem
- 9 View System ID**
- 10 Return to previous screen

```
Enter choice -> 9)
```

Select item 4, "Dynamic Password."

IMPORTANT: If your dynamic password has expired (or, if there has never been one installed before), you see only the "Dynamic Password" and "Return to previous screen" items. Select item 1, as follows:

```
REMOTE MENU
```

1. Dynamic Password
2. Return to previous screen

```
Enter choice -> 1)
```

2. The Dynamic Password Menu appears:

```
Dynamic Password
```

- ```
1 Install
2 Verify
```

```
Enter selection (q to quit; ^ previous menu):
```

3. To verify that an existing password is still valid, skip to step 6.  
To set a new level 1, dynamic password, select item 1, "Install" (1↓).

Your screen displays a 10-digit *Maintenance Access Code*, followed by the prompt for entering a new dynamic password:

```
Maintenance Access Code: ABCDE12345
Enter New Level 1 Password -> _
```

Every AViON computer generates its own Maintenance Access Code. You'll need to supply this number in the next step.

4. Telephone your Data General Customer Support Center (CSC) and tell the customer service representative that you are setting up AV/Alert and need a *Level 1, dynamic password*.

**IMPORTANT:** Sites in the U.S. or Canada: telephone 1-800-DG-HELPS.  
Outside the U.S. and Canada: contact your country Service Manager or Data General Sales representative.

Before receiving the password, you'll need to provide your maintenance access code and your contract (or warranty) information and expiration.

5. Type in the password (exactly as given) at the Enter New Level 1 Password -> prompt. Note that the password is case sensitive. It consists of 28 alphanumeric characters; it may be easiest to write down the numbers in pairs.

```
Maintenance Access Code: ABCDE12345
Enter New Level 1 Password -> XX XX XX XX XX XX X)
```

Press Enter to return to the Dynamic Password menu.

6. To confirm that the dynamic password is valid and AV/Alert functions are enabled, select item 2, "Verify" (2↓). The following appears:

```
FE Service Contract is Valid
Contract ends on dd/mm/yy
```

```
Press any key to continue ... _
```

**IMPORTANT:** *Contract* in this context may refer to your warranty period; if so, the end date reflects the remainder of your warranty.

Press a key to return to the Dynamic Password menu.

If you *don't* get this message, verify your password with the CSC support engineer; then, return to item 1, "Install," (1) at the Dynamic Password menu, and try again. (In other words, repeat these steps).

## Viewing or Changing Default AV/Alert Setup Configurations

Configuration parameters determine how AV/Alert works on your system. The “Viewing AV/Alert Status” section described how to get a quick look at your configuration. It also mentioned the parameters you may control, as follows

- Remote Access (you can disable/enable access, or change the password)
- Remote Connection (you can change to Inactive by closing a connection, to Active by initiating a connection)
- Machine Initiated Calling (you can pause MI calling from the SCM Remote menu)

**IMPORTANT:** Only an authorized Data General Representative may alter the status of other AV/Alert features.

You receive your AViON server computer configured with defaults; if you followed the steps in Chapter 2 to enable AV/Alert and if you use the modem that came with your AViON computer, you do not need to make any configuration changes. However, you might choose to make changes, as described in this section.

### Enabling or Disabling Remote Access

With Remote Access disabled, a modem cannot connect with your computer via the AV/Alert modem connection. Unless you specifically want to allow a remote call (when Data General needs to resolve a problem with your computer, for example), we recommend that you keep remote access *disabled* during routine system use.

To *view* the status of Remote Access to your computer, examine the “Remote Enable/Disable” item on either the SVCMGR Remote Access Parameters or the SCM Remote menu. The menu item shows the current default ([Enabled] or [Disabled]).

To *change* the status of Remote Access, complete the following steps:

1. Display the appropriate menu as described below. Refer to the “Navigating AV/Alert Support Menus” section (earlier in this chapter) if you need to learn how to display any of the AV/Alert support menus.

► If DG/UX is running:

a. Display the SVCMGR Main Menu.

```
SVCMGR (Rev. x.x)
=====
1. AV/Alert System Status
2. AV/Alert Setup
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics
```

Enter selection (q to quit; ^ previous menu):

b. Select item 2, "AV/Alert Setup." The AV/Alert Setup Menu appears:

```
AV/Alert Setup Menu
=====
1. Dynamic Password
2. Remote Access Parameters
3. Modem Parameters
```

Enter selection (q to quit; ^ previous menu):

c. Select item 2, "Remote Access Parameters." The Remote Access Parameters Menu appears:

```
Remote Access Parameters
=====
1. Remote Access Enable/Disable
2. Remote Telephone Numbers
3. Remote Access Password [DGAVREMOTE]
```

Enter selection (q to quit; ^ previous menu):

- If DG/UX is *not* running:

Display the SCM Remote Menu.

REMOTE MENU

```
1 Remote Access Password [DGAVREMOTE]
2 Remote Enable/Disable [Enabled]
3 Remote Phone Numbers
4 Remote Dialout
5 Pause MI [Enabled]
6 Dynamic Password
7 Status
8 Reset Modem
9 View System ID
10 View Service Contract Number
11 Return to previous screen
```

Enter choice -> 2)

2. To change the status of Remote Access, toggle the value from Enabled to Disabled (or, the reverse) by selecting item 2 until the default you want appears on the menu.

## Installing Remote Telephone Numbers

Your computer uses the AV/Alert modem to call back authorized sites after an incoming attempt for remote connection, and to dial out to remote modems when you initiate a call. You need to install the modem telephone numbers that your computer uses when dialing out to remote sites.

You can install up to seven telephone numbers (dial strings) on your computer's Remote Telephone Numbers list. A *dial string* is a string of alphanumeric characters; it consists of a modem dial command (to specify Touch-Tone® or pulse operation), the complete telephone number of the modem you are calling, and an optional security check required before allowing a remote connection. This section explains how to enter valid dial strings for callback and dial-out modem numbers.

*Callback* numbers provide an important security feature; they ensure that your computer allows incoming modem connections only from authorized remote computers. When a remote computer attempts to make a modem connection, your computer allows only enough access to determine whether the call is coming from a site whose number you have entered in the Remote Phone Numbers menu. Your computer then returns the call using the authorized callback number; it therefore maintains control over the remote connection.

*Dial-out* numbers allow you to use your modem for automatic access to external computer modem services such as Data General's DASH (Direct Access for Service Help) facility, the DG Bulletin Board and Help Desk, or other public services such as CompuServe.

Follow these steps to view existing callback or dial-out remote telephone numbers or to install new numbers.

1. Display the appropriate menu as described below. Refer to the "Navigating AV/Alert Support Menus" section (earlier in this chapter) if you need to learn how to display any of the AV/Alert support menus.

► If DG/UX is running:

- a. Display the SVCMGR Main Menu.

```
Service Manager (Rev. x.x)
```

```
=====
```

1. AV/Alert System Status
- 2. AV/Alert Setup**
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics

```
Enter selection (q to quit; ^ previous menu):
```

- b. Select item 2, "AV/Alert Setup." The AV/Alert Setup Menu appears:

```
AV/Alert Setup Menu
```

```
=====
```

1. Dynamic Password
- 2. Remote Access Parameters**
3. Modem Parameters

```
Enter selection (q to quit; ^ previous menu):
```

- c. Select item 2, "Remote Access Parameters." The Remote Access Parameters Menu appears:

```
Remote Access Parameters
```

```
=====
```

1. Remote Access Enable/Disable
- 2. Remote Telephone Numbers**
3. Remote Access Password [DGAVERMOTE]

```
Enter selection (q to quit; ^ previous menu):
```



► If DG/UX is *not* running:

Display the SCM Remote Menu.

REMOTE MENU

- 1 Remote Access Password [DGAVREMOTE]
- 2 Remote Enable/Disable [Enabled]
- 3 Remote Phone Numbers**
- 4 Remote Dialout
- 5 Pause MI [Enabled]
- 6 Dynamic Password
- 7 Status
- 8 Reset Modem
- 9 View System ID
- 10 View Service Contract Number
- 11 Return to previous screen

Enter choice -> **3**

2. To access the list of remote access modem telephone numbers (callback and dial-out dial strings) in memory, select the "Remote Telephone Numbers" (item 3 on the SCM Remote menu; item 2 on the SVCNMR Remote Access Parameters menu).
3. The Remote Access Phone Numbers menu appears, with existing numbers displayed next to their corresponding menu item. In sites in the U.S. and Canada, the menu appears as follows:

View/Change Remote Access Phone Numbers

- 1 [T180035810<95>,,,,,,69367]
- 2 []
- 3 []
- 4 []
- 5 []
- 6 []
- 7 []
- 8 Return to previous screen

Enter choice ->

**IMPORTANT:** The default value for item 1 is the callback number for your Data General AV/Alert support computer at a Data General Support Center. Please do not change or delete the value for item 1 unless a Data General representative instructs you; removing this number disables the AV/Alert callback feature.

To install a new modem dial string, type the number beside the first available item number (an item with empty space between the [ ] brackets). For example, type **3** to enter a value for the third menu item.

4. The next prompt appears as follows:

```
Use '<' and '>' to indicate check portion.
Enter New Dialstring ->
Confirm? [N]
```

At the Enter New Dialstring -> prompt, type the dial string for a modem you want to be able to access from your AV/Alert service port, as shown in the following example.

```
Use '<' and '>' to indicate check portion.
Enter New Dialstring -> T1456789<1234>,,,,,,5678
Confirm? [N]
```

Where (using the example above):

| Portion of Example Dial String | Indicates                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>T</b>                       | Dial Command: <b>T</b> for Touch-Tone or <b>P</b> for pulse. (Mandatory for Touch-Tone telephones; optional for pulse systems).<br><i>Note: Many corporate telephone systems require the number 9 to dial out. At these sites, enter <b>T9</b>, or <b>P9</b>.</i>                                                                                                                                                                   |
| <b>1</b>                       | Long Distance Code (optional).                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>456</b>                     | Telephone Area Code (optional).                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>7891234</b>                 | Telephone Number (7 digits).                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>&lt;1234&gt;</b>            | Left and right brackets (< and >) surround the portion of a dial string you want a remote operator to provide in a security check before a callback connection. In this example, we placed brackets around the last four digits of the telephone number. You do not use brackets for dial-out dial strings.                                                                                                                         |
| <b>,,,,,,</b>                  | Adding a comma (,) to a dial string inserts a two-second delay. Use six to eight commas to insert a 12- to 16-second pause between the telephone number and an extension number in your callback and dial-out dial strings; this correctly instructs the modem to wait for a receiving dial tone before sending the extension number. (Contact DG if you have trouble adding commas). You don't add a delay for direct modem lines. |
| <b>5678</b>                    | Modem Extension Number (optional).                                                                                                                                                                                                                                                                                                                                                                                                  |

To enable the AV/Alert callback function, you specify a *check portion* of the dial string by inserting angle brackets around at least one number. (Use Shift-comma for the left bracket, <, and Shift-period for the right bracket, >.) During the callback sequence, AV/Alert prompts remote users for the check portion of the dial string before allowing the connection. This assures the greatest level of security from unauthorized access through your computer's service port.

5. Type **y** and press Enter to confirm the dial string entry: type **n** and press Enter to enter it again.

```
Use '<' and '>' to indicate check portion.
Enter New Dialstring -> T1456789<1234>5678
Confirm? [N] y
```

You return to the Remote Phone Numbers VIEW/CHANGE menu. If you entered an incorrect dial string, you'll get one of the following error messages first:

```
*** Invalid dialstring ***
```

```
*** Unmatched brackets ***
```

```
*** Dialstring too long ***
```

```
*** Illegal Dialstring ***
```

Start these steps over if you get an error.

If the dial string was valid, it appears on the menu entry:

```
Remote Phone Numbers VIEW/CHANGE
```

```
1 [T180035810<95>,,,,,,69367]
2 [T1456789<1234>,,,,,,5678]
3 []
4 []
5 []
6 []
7 []
8 Return to previous screen
```

```
Enter choice ->
```

6. Repeat steps 3 through 5 for subsequent item numbers, until you've entered all the remote numbers you will use.

## Viewing or Setting the Remote Access Password

The remote access password provides security against unauthorized remote access to your computer system. Whenever AV/Alert Remote Access is *enabled*, your computer prompts for the Remote Access password before allowing a modem connection via the SERVICE port.

**IMPORTANT:** In addition to preventing *unauthorized* access, changing the default remote access password also prevents Data General from accessing your computer for authorized purposes until you have communicated your password to a support engineer.

You can change the remote access password once, never, or after every remote call to your computer; it's up to you. However, you should never have a null (blank) Remote Access password; this allows unprotected entry to your system.

With remote access *disabled*, there is no access to your computer via the AV/Alert modem, regardless of password knowledge.

The factory-installed default for the remote access password is DGAVREMOTE. The current password value appears in the following locations:

- item 3 on the Remote Access Parameters menu
- the AV/Alert System Status screen (select item 1 from SVCMMGR Main menu)
- item 1 on the SCM Remote menu

Examine any of these screens to *view* the Remote Access password.

To *change* the Remote Access password, complete the following steps:

1. Display the appropriate menu as described below. Refer to the "Navigating AV/Alert Support Menus" section (earlier in this chapter) if you need to learn how to display any of the AV/Alert support menus.

► If DG/UX is running:

- a. Display the SVCMMGR Main Menu.

```
Service Manager (Rev. x.x)
=====
1. AV/Alert System Status
2. AV/Alert Setup
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics
```

Enter selection (q to quit; ^ previous menu):

- b. Select item 2, "AV/Alert Setup." The AV/Alert Setup Menu appears:

AV/Alert Setup Menu

=====

1. Dynamic Password
- 2. Remote Access Parameters**
3. Modem Parameters

Enter selection (q to quit; ^ previous menu):

- c. Select item 2, "Remote Access Parameters." The Remote Access Parameters Menu appears:

Remote Access Parameters

=====

1. Remote Access Enable/Disable
2. Remote Telephone Numbers
- 3. Remote Access Password [DGAVREMOTE]**

Enter selection (q to quit; ^ previous menu):

- If DG/UX is *not* running:

Display the SCM Remote Menu.

REMOTE MENU

- 1 Remote Access Password [DGAVREMOTE]**
- 2 Remote Enable/Disable [Enabled]
- 3 Remote Phone Numbers
- 4 Remote Dialout
- 5 Pause MI [Disabled]
- 6 Dynamic Password
- 7 Status
- 8 Reset Modem
- 9 View System ID
- 10 View Service Contract Number
- 11 Return to previous screen

Enter choice -> 1)

2. Select the "Remote Access Password" item (item 3 in SVCMMGR; item 1 in SCM).

The following prompt appears:

Enter New Password ->

3. Type up to 12 alphanumeric characters; then, press Enter (↵). The password is *case-sensitive*; keep this in mind while entering upper- or lowercase letters. To keep the existing password, you must re-type it *exactly* as it appeared on your menu.

**IMPORTANT:** With remote access enabled, a null remote access password allows any modem to access your computer without password prompting.

4. You have a chance to confirm the new password, or to enter another one:

Confirm? [N]

If you didn't type your password correctly, or simply want to choose a different password, select no (N) by pressing Enter (↵). Repeat steps 2 through 4.

If the new password is the one you want, type **y**↵ to confirm it. Your menu display reappears with the new password shown as the default.

## Viewing or Changing Modem Parameters

The baud rate and character length settings for your AV/Alert modem port (SERVICE) are set at the factory to match the requirements of the ZOOM™ modem you receive with server model AViON computers.

You can change the factory defaults for the modem port using DG/UX SVCMGR. (If your operating system is not running, you can change the modem port settings with an option on the SCM View or Change System Configuration menu; refer to your model-specific hardware documentation).

**CAUTION:** *Your AV/Alert system is set up with appropriate configuration defaults at installation; do not change the default values described in this section unless your site's configuration warrants the change.*

1. Display the Modem Parameters menu as described in steps 1a through 1c, below.

**IMPORTANT:** Refer to the "Navigating AV/Alert Support Menus" section (earlier in this chapter) if you need to learn how to display any of the AV/Alert support menus.

a. Display the SVC MGR Main Menu.

```
Service Manager (Rev. x.x)
=====
1. AV/Alert System Status
2. AV/Alert Setup
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics
```

Enter selection (q to quit; ^ previous menu):

b. Select item 2, "AV/Alert Setup." The AV/Alert Setup Menu appears:

```
AV/Alert Setup Menu
=====
1. Dynamic Password
2. Remote Access Parameters
3. Modem Parameters
```

Enter selection (q to quit; ^ previous menu):

c. Select item 3, "Modem Parameters." The Modem Parameters Menu appears:

```
Modem Parameters
=====
1. Baud Rate [2400]
2. Data Bits [8 bits, no parity]
3. Modem Type [HAYES]
4. Modem Initialization String []
```

Enter selection (q to quit; ^ previous menu):

2. To view or change the baud rate for your modem port, select item 1, "Baud Rate."

The Change Baud Rate menu appears:

```
Baud rate [2400]
```

```
1 300
2 600
3 1200
4 2400
5 4800
6 9600
7 19200
```

Enter selection (q to quit; ^ previous menu):

- a. If the baud rate is already correct, press Enter to return to the Modem Parameters menu.
  - b. If the baud rate shown in brackets ([2400] in the example above) is not correct for your modem (it should 2400 baud if you are using the Zoom modem), you can change it by selecting the item number of the rate you want (for example, item 3, "1200" (3)) to set the baud rate to 1200 baud).
3. To view or change the data bits for your modem port, select item 2, "Data Bits."

If you need a value *other* than 8 bit, no parity (for example, if you are using the service modem to contact a modem unrelated to your AV/Alert service, such as CompuServe), select item 2 (2). Each time you select item 2, the character length and parity change. Toggle the value by repeatedly selecting item 2 until the data bit/parity combination you need appears.

**IMPORTANT:** Character length and parity for the modem port should be 8 bit, no parity if you are using the Zoom modem that came with your computer.

4. To change the modem type, select item 3, "Modem Type." The type toggles from Hayes to CCITT modem.

**IMPORTANT:** The modem type should be HAYES if you are using the modem that came with your computer. Although SCM-based diagnostics support CCITT V.25 bis modems, AViiON Diagnostics do not provide automated AV/Alert support using CCITT modems.

5. To add an initialization string for dialing with your modem, select item 4, "Modem Initialization String."

At most sites, an initialization string is not necessary. If you do need string to modify modem characteristics, enter the appropriate Hayes AT command string here.



## Pausing Machine-Initiated Calls

Even though AV/Alert MI calling is enabled by default, you can (if you need to) temporarily disable machine-initiated calling by specifying a pause (a period between zero and 100 hours). If your computer discovers an error or condition (*incident*) that results in a MI call during this time, AV/Alert does not send the call until the specified delay period is complete. Such a pause allows the completion of test or maintenance procedures before the MI calls are automatically sent.

You can pause machine-initiated calling only from the SCM Remote menu. For routine use, we recommend that you use the default value of zero, no pause.

**CAUTION:** *Your AV/Alert system is set up with appropriate configuration defaults at installation; do not change the default values described in this section unless your site's configuration warrants the change.*

Item 5 on the SCM Remote menu indicates the current status of Machine-Initiated (MI) calling. Refer to the "Navigating AV/Alert Support Menus" section (near the beginning of this chapter) if you need to learn how to display this menu from the SCM prompt.

Your menu display indicates one of three states for MI calling:

- [Disabled], indicates that MI calling is disabled.
- [Enabled], indicates that MI calling is enabled and ready.
- [Paused - Enabled], indicates that MI calling is enabled, but is currently paused, temporarily holding any packets to be sent.

Item 5 appears as follows:

### REMOTE MENU

```
1 Remote Access Password [DGAVREMOTE]
2 Remote Enable/Disable [Enabled]
3 Remote Phone Numbers
4 Remote Dialout
5 Pause MI [Enabled]
6 Dynamic Password
7 Status
8 Reset Modem
9 View System ID
11 Return to previous screen
```

Enter choice ->

Your menu indicates that MI calling is enabled if you have a valid dynamic password installed.

1. To view, change, add, or remove an MI pause time, select item 5 on the SCM Remote menu (5 ↵). You see the following prompt:

```
Enter length of time to pause MI calling HH:MM
Enter 0:0 to terminate a pause or <Enter> to return.
->
```

**IMPORTANT:** You cannot select item 5 if MI calling is disabled. Contact Data General if item 5 shows that MI calling is disabled and you think your AV/Alert system should be enabled.

2. Type the desired pause time at the -> prompt in hours and minutes, using the form hh:mm, where hh is the number of hours and mm is the number of minutes. Valid entries are between 0:0 and 99:59.

For example, to set a delay in MI calling of one hour, thirty minutes, type the following:

```
-> 1:30 ↵
```

To remove all delay so that MI calls initiate immediately, enter the value 0:0 ↵.

Press Enter to return to the SCM Remote menu.

Note that the *length* of the pause time does not appear on the Remote menu display, only the status of MI calling.

## Communicating With Your Data General AV/Alert Support Computer

With MI calling enabled, you can transmit the following information to your CSC support computer using AV/Alert menus:

- test MI call
- hardware configuration report

**IMPORTANT:** Under most circumstances, you will use these options only when directed by an AV/Alert service engineer.

You can also use your AV/Alert modem to connect to a Data General on-line service such as DASH (Direct Access for Service Help).

### Displaying the AV/Alert Messages Menu

1. Start SVCNMR and display its Main Menu.

```
Service Manager (Rev. x.x)
=====
1. AV/Alert System Status
2. AV/Alert Setup
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics
```

Enter selection (q to quit; ^ previous menu):

2. Select item 3, "AV/Alert Messages." The AV/Alert Messages Menu appears:

```
AV/Alert Messages
=====
1. Test Call
2. System Hardware Configuration Parameters
```

Enter selection (q to quit; ^ previous menu):

### Sending an MI Test Call

To verify that the machine-initiated features of AV/Alert are working properly, you can send a test call to the AV/Alert support computer at a Data General Support Center.

Select item 1 on the AV/Alert Messages menu, "Test Call." The following screen prompt appears, just to avoid an unintentional call:

```
Warning: A call to the Customer Support Center
will be made. Do you wish to continue? [N]
```

Type **Y** and press Enter to send the test call. The system provide the following confirmation:

```
Callout Request Initiated...
```

## Sending a Hardware Configuration Packet

To initially register your AV/Alert system with DGC, and whenever you modify your system hardware, you need to let the AV/Alert support computer at a Data General Support Center know about your hardware configuration; you do this by sending an AV/Alert hardware configuration packet. Without accurate information, AV/Alert may not be able to effectively diagnose system problems.

Select item 2 on the AV/Alert Messages menu, "System Hardware Configuration." You see a screen display with information about each hardware component in your system.

The configuration report for an AViON server might appear as follows:

```
System Hardware Configuration
=====
```

| Part Number | Qty | Description                       |
|-------------|-----|-----------------------------------|
| 005-040013  | 1   | 33MHz Quad CPU Mother Board       |
| 005-038750  | 2   | 33MHz CPU Complex (Deep Caches)   |
| 005-035592  | 1   | VME 4/16 MB Token Ring Controller |
| 118-014068  | 1   | VME IEEE 802.3 CMC LAN Controller |
| 118-010119  | 2   | VME Terminal Controller           |
| 005-038911  | 1   | Integrated Device                 |
| 005-038782  | 3   | Integrated Device                 |
| 118-010962  | 1   | 5 GB 4MM Helical Scan Tape Drive  |
| 118-007562  | 2   | 320/525 MB Cartridge Tape Drive   |
| 118-015462  | 3   | 520 MB Half Height SCSI DISK      |

```
-----Press Enter to Continue -----
```

```
Send Configuration [n]:
```

If the report accurately reflects your system hardware, type **Y** and press Enter to send the configuration message. Simply press Enter (select No) to return to the AV/Alert Messages menu.

If items appear to be missing from your configuration report, contact Data General right away.

## Using the DG/UX cu Utility to Dial Out

Follow the steps in this section to make remote connection from your AV/Alert modem to a Data General Support Center computer (or with any other remote computer whose modem number you have installed in the file `/etc/uucp/Devices`).

These steps assume that you are logged in to the DG/UX system as root.

► Set up the Devices File

1. Move to directory `/etc/uucp`.

```
cd /etc/uucp
```

2. Use a text editor to modify the Devices file. Add the following line:

```
Direct tty00,M - 2400 direct
```

(In this example, the baud rate is 2400).

► Start the cu utility as follows:

```
cu -l tty00
```

(If it doesn't work, edit the `/etc/uucp/Devices` file again; add the line:  
`ACU tty00,M - 2400 hayes`).

## Dialing Out from the SCM

Follow the steps in this section to make a remote connection with a Data General Support Center, with DASH on-line services, or with any other remote computer whose modem number you have installed in the Remote Phone Numbers menu. (An earlier section of this chapter describes how to install numbers in the Remote Phone Numbers menu.)

**IMPORTANT:** Refer to the "Navigating AV/Alert Support Menus" section earlier in this chapter if you need to learn how to display the Remote menu from the SCM prompt.

1. From the Remote menu, select item 4, "Remote Dialout," (4)

## REMOTE MENU

```
1 Remote Access Password [DGAVREMOTE]
2 Remote Enable/Disable [Enabled]
3 Remote Phone Numbers
4 Remote Dialout
5 Pause MI [Enabled]
6 Dynamic Password
7 Status
8 Reset Modem
9 View System ID
10 View Service Contract Number
11 Return to previous screen
```

Enter choice ->

2. The items on the Remote Phone Numbers menu appear, as follows:

Choose number to dial

```
1 [T1456789<1234>,,,,,,5678]
2 [XXXXXXXXXXXXXXXXXXXXX]
3 [YYYYYYYYYYYYYYYYYYY]
4 [ZZZZZZZZZZZZZZZZZZZ]
5 []
6 []
7 []
8 Return to previous screen
```

Enter choice ->

If the modem number you wish to dial does not appear on this menu, complete the steps in the "Installing Remote Telephone Numbers" section to add the number before proceeding.

3. Select the item number next to the dial string to the modem you want to call. AV/Alert automatically dials the number, prompting for a PBX or other extension number after it receives a dial tone:

Enter an extension or <newline> if none:

Press Enter, or type the extension number of the modem you are calling.

4. You see screen messages as the modem makes the call. Once you see all of the following messages on your system console screen, proceed with step 5:

```

*** Resetting Modem ***
*** Type Control-C to Abort Call ***
*** DIALING xxxxxxxx ***
Press any key to continue ...

```

If you entered the wrong item number at the Choose Number to Dial menu, you'll see instead the error: \*\*\* Empty Dial String \*\*\*. Return to step 3 and select a valid item from the menu.

If the modem "Ready" indicator (RD) was not illuminated when you initiated the dial out (the modem is not powered on, or perhaps the cables were not properly connected), you'll see the error:

```

*** Modem Not Ready ***

```

Try selecting item 8, "Reset Modem," (8) at the SCM Remote menu. If the RD indicator is still not lit, power off the modem and make sure all cables are connected securely; then, power on the modem again. Wait until the RD indicator is lit; then, begin again from step 1 in this section.

6. Press any key to begin the logon process at the remote computer.

While logged on, you can use several keyboard command sequences, described in Table 3-4.

**Table 3-4** Keyboard Control Functions During AV/Alert Modem Connections

| Keyboard Entry | Result                                                                                                                                                                                                                                                                   |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <CTRL-E>       | Allows the local computer (you) to close the remote connection and reset the modem. Works at any time during connection.                                                                                                                                                 |
| <CTRL-T>       | Toggles (starts or stops) Talk mode. In Talk mode, the system considers all keyboard entry to be ASCII text; there is no command interpretation. Allows the local operator (you) and remote operator to type text messages to each other's console screens.              |
| <CTRL-V>       | Allows you to transmit special characters in Talk mode. For example, typing Ctrl-V/Ctrl-E does not reset the modem; it sends the text string Ctrl-E to the remote screen.                                                                                                |
| <CTRL-X>       | Toggles (starts or stops) system console control. Transfers system console control to the remote computer keyboard when the local computer (you) has control. Local and remote operators exchange control using this sequence. Works whether or not Talk mode is active. |

## Resetting the AV/Alert Modem

You can perform a software reset on your AV/Alert modem using the SCM Remote Service Interface.

**IMPORTANT:** Refer to the “Navigating AV/Alert Support Menus” section (near the beginning of this chapter) if you need to learn how to bring down your operating system and display the Remote menu from the SCM prompt.

To reset the modem before and/or after sending and receiving calls, select item 8, “Reset Modem” at the SCM Remote menu.

### REMOTE MENU

- 1 Remote Access Password [DGAVREMOTE]
- 2 Remote Enable/Disable [Enabled]
- 3 Remote Phone Numbers
- 4 Remote Dialout
- 5 Pause MI [Enabled]
- 6 Dynamic Password
- 7 Status
- 8 Reset Modem**
- 9 View System ID
- 10 View Service Contract Number
- 11 Return to previous screen

Enter choice -> **8**

End of Chapter



# 4 Using On-line Diagnostics

---

## *Read This Chapter*

- ▶ To learn how to use SVCNMR On-line Diagnostics.
- ▶ If you suspect a hardware error and want to check out your system.
- ▶ To run a periodic preventive maintenance check.
- ▶ To test the following hardware components: printers, workstation keyboard or mouse.

On-line diagnostics provide menu-based utilities that allow you to test your AViON computer while the DG/UX system is running.

DG/UX Service Manager (SVCNMR) diagnostic software allows you to perform many diagnostic functions you otherwise would have to bring down your operating system to access. It provides an on-line version of AViON System Diagnostics tests, as well as AV/Alert support for those with a hardware service contract.

**IMPORTANT:** An active warranty or service contract is *not* necessary to use on-line diagnostics on an AViON computer running the DG/UX system.

This chapter provides step-by-step instructions for running on-line hardware Acceptance test and diagnostic tools available with SVCNMR.

**A  
V  
/  
A  
L  
E  
R  
T**

Refer to Chapter 3 for information about using the AV/Alert features in SVCNMR.

**IMPORTANT:** If you suspect a problem with your display, you can also use stand-alone system diagnostic utilities to test a graphics monitor or asynchronous terminals.

## Displaying the Main Menu

Follow the steps in this section to start SVCMMGR software, enter the on-line diagnostics, and display the Online System Diagnostics Tools Menu.

1. Display the UNIX superuser prompt; then start the SVCMMGR software using the following command line:

```
svcmgr (or, usr/sbin/svcmgr)
```

2. The program displays its initial license information screen:

```
Licensed Material - Property of DGC
Data General Proprietary Diagnostics
```

```
This diagnostic material contains information which is proprietary and confidential to Data General Corporation (DGC) and is the exclusive property of DGC. Unless there is a license agreement executed by DGC under which DGC has identified this diagnostic material and expressly licensed you, this diagnostic material is provided to you in trust under the "Data and Proprietary Rights" clause of your agreement with DGC only for use by or on behalf of DGC (including its subsidiary companies) during the warranty period and under any contract maintenance period. This diagnostic material, in whole or in part, is not to be reproduced by any means nor made available to any third party. You agree to return this diagnostic material to DGC at the end of the above identified period(s) or destroy this diagnostic material and, upon request, notify DGC in writing of such destruction.
```

```
(C) DATA GENERAL CORPORATION 1991-1993
This copyright notice does not constitute or
evidence publication or public disclosure.
```

```
Press Enter to Continue.
```

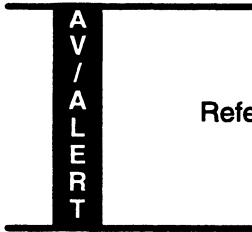
```
Press New Line when you are ready to clear the screen.
```

```
^
```

3. The SVCNMR Main Menu appears, as follows:

```
Service Manager (Rev. x.x)
=====
1. AV/Alert System Status (Customer Information)
2. AV/Alert Setup (MI,Remote,Modem,Passwd)
3. AV/Alert Messages (Test, Configuration)
4. Error Management (Thresholds, Deconfig.)
5. Online Diagnostics (System Test, Tools)
```

Enter selection (q to quit; ^ previous menu): 5)



Refer to Chapter 3 for information about items 1-4

Select item 5, "Online Diagnostics."

4. The Main Menu appears:

```
Online System Diagnostics
Revision: xx.xx
```

```
Data General Corporation
Proprietary Use Only
```

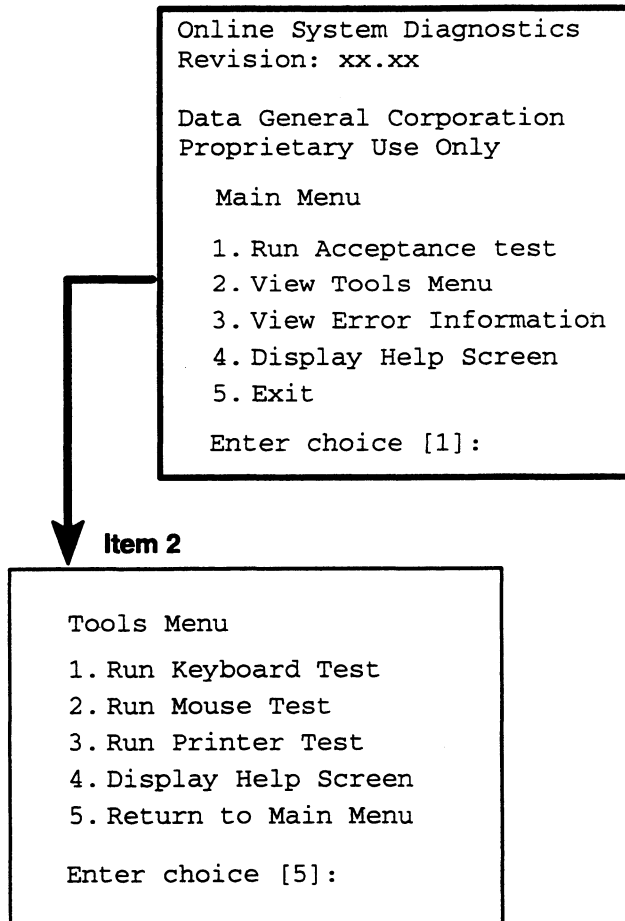
Main Menu

1. Run Acceptance test
2. View Tools Menu
3. View Error Information
4. Display help screen
5. Exit

Enter choice [5]:

## Using the Menus

Figure 4-1 shows the menu items you can use while running on-line diagnostics.



**Figure 4-1** On-line System Diagnostics Menus

You access the Tools Menu from the Online System Diagnostics Main Menu.

Press Enter to exit from any menu. You return to the previous menu or exit from the Main Menu.

Select the “Display Help Screen” item, always the next-to-last menu selection, to view a brief description of each menu option.

## Using Special Keyboard Functions

Table 4–1 shows how you can use certain keys and key sequences to control the on–line diagnostics. Refer to the Preface for information about how we use keyboard symbols in this manual.

**Table 4–1** Keyboard Control Functions: On–line Diagnostics

| <b>Keyboard Entry</b> | <b>Description</b>                                                   |
|-----------------------|----------------------------------------------------------------------|
| <b>]</b>              | Begin execution of prior input or select the default at prompts.     |
| <b>s</b>              | Update status display while the Acceptance test is running.          |
| <b>&lt;CTRL–D&gt;</b> | Interrupt execution of a test and display the previous menu.         |
| <b>&lt;CTRL–Q&gt;</b> | Resume output display that you suspended with the Ctrl–S sequence.   |
| <b>&lt;CTRL–S&gt;</b> | Suspend output display until you resume it with the Ctrl–Q sequence. |

---

## Running the On-line Hardware Acceptance Test

This section describes how to use the 15-minute hardware acceptance test included with the SVCMMGR On-line Diagnostics. The Acceptance Test sizes and verifies proper functioning of your computer's hardware components in non-destructive tests.

Run the on-line Acceptance Test whenever you want to thoroughly test your computer hardware without bringing down the operating system.

**IMPORTANT:** A similar test is available with the stand-alone AViON System Diagnostics. Run the stand-alone Acceptance Test when your computer or any individual hardware component is *new*, or when you can't boot your operating system.

### Starting the Acceptance Test

After starting SVCMMGR (as described earlier in this chapter), select the Acceptance Test from the SVCMMGR Main Menu.

```
System Diagnostics
Revision: xx.xx

Data General Corporation
Proprietary Use Only

Main Menu

1. Run Acceptance test
2. View Tools Menu
3. Display help screen
4. Exit

Enter choice [1]: ↵
```

► Press Enter to select the default, item 1, "Run Acceptance test."

### Preparing Drives for Destructive Tape Testing

The Acceptance Test begins by displaying the tape devices it found during initialization. Because tape testing is the only *destructive* portion of the Acceptance test, you must select the tape drives you want to test *and insert write-enabled scratch media* in the selected drives.

```
Acceptance Test

Do you want to Test /dev/rmt/st(ncsc@7(FFFA0000,7),4,0)
(Y/N)? [N] ↵
```

- ▶ Type **Y** and press **Enter** for each drive you want to test. Press **Enter** (accept the default response, **No**) to skip the drive.

```
Do you want to Test /dev/rmt/st(ncsc@7(FFFA0000,7),4,0)
(Y/N)? [N] y
```

Once you've selected or skipped the last tape device in your configuration, you see the following message.

Note: Absence of tape may take 5 minutes to detect.  
Hit any key to proceed.

Insert a blank (scratch) tape into each tape drive you wish to test. Make sure that scratch tapes are write-enabled, since tape tests need to record on the tape. Refer to documentation that came with the drive for information about removing, write-enabling, and inserting cartridge tapes.

Then, press any key and proceed with the steps in the "Running the Acceptance Test" section, below.

## Running the Acceptance Test

A list of non-tape devices found in your system during initialization appears, indicating the hardware that the Acceptance Test will verify. (Note that this list includes tape devices you selected previously). A DG/UX full device name appears with most devices.

```
Devices to be Tested
CPU
Memory: /dev/mem
Disk: /dev/rpdk/sd(ncsc@7(FFFA0000,7),0,0)
Disk: /dev/rpdk/sd(ncsc@7(FFFA0000,7),1,0)
Disk: /dev/rpdk/sd(ncsc@10(FFFA0000,7),0,0)
```

```
Run Acceptance Test (Y/N)? [Y]
```

**IMPORTANT:** Your screen display will reflect your particular configuration and is likely to differ slightly from the examples in this chapter.

1. Press **Enter** to start the test once you have inserted write-enabled scratch tapes in selected drives.

2. Once the test begins, you see an initial General Status Report screen, as seen in the following example.

```

General Status Report

Revision xx.xx Elapsed Time:00:00:10

CONT ID SUBSYSTEM DESCRIPTION PASSES ERRORS
 0 System Errors 0 0
 0 33 MHz Quad CPU Mother Board 0 0
 1 Memory 0 0
 2 VME 3560 SCSI Controller 0 0
 3 Integrated Device 0 0

S - Update General Status Report Ctrl-D -- Stop all Tests
1 - Controller Specific Status E - System Error Report

```

The test assigns a controller number to each component subsystem. Once testing begins, the status report indicates the number of passes completed for each, and any errors detected during testing.

The General Status Report screen automatically displays updated information every minute, but you can type **s** to view current statistics at any time during testing.

### About Errors

If the DG/UX system or a hardware subsystem encounters a serious fault while the Acceptance test is running, you'll see a brief message, as follows:

```

System Failure
Contact an Authorized Data General Representative

```

**A  
V  
/  
A  
L  
E  
R  
T**

If the MI callout feature of AV/Alert is enabled, you also see a fault code; any error initiates an automatic call to the Data General Customer Service Center computer.

After any error, the Acceptance Test stops. You can view information about the error by pressing the lowercase "E" key (e). (However, if the hard error was serious enough to halt the DG/UX system, you might see the SCM prompt on your screen.)

If an error halts the Acceptance Test and you are *not* an AV/Alert customer, be sure to write down any text displayed on your screen and contact Data General as described in the Preface.





## Using the On-line Tools

After starting SVCNMR (as described earlier in this chapter), display the Tools Menu from the SVCNMR Main Menu.

System Diagnostics  
Revision: xx.xx

Data General Corporation  
Proprietary Use Only

Main Menu

1. Run Acceptance test
2. **View Tools Menu**
3. View Error Information
4. Display help screen
5. Exit

Enter choice [1]: **2**

- **Type 2 and press New Line at the Main Menu to select item 2, "View Tools Menu".**

The on-line Tools Menu appears:

Tools Menu

1. Run Keyboard Test
2. Run Mouse test
3. Run Printer Test
4. Display help screen
5. Return to Main Menu

Enter choice [5]:

## Testing a Workstation Keyboard

This section describes how to test the keyboard attached to a workstation keyboard port.

**IMPORTANT:** The mouse test will not run if your DG/UX System is currently running X-Windows.

To test each key in your keyboard, select the Keyboard test as follows:

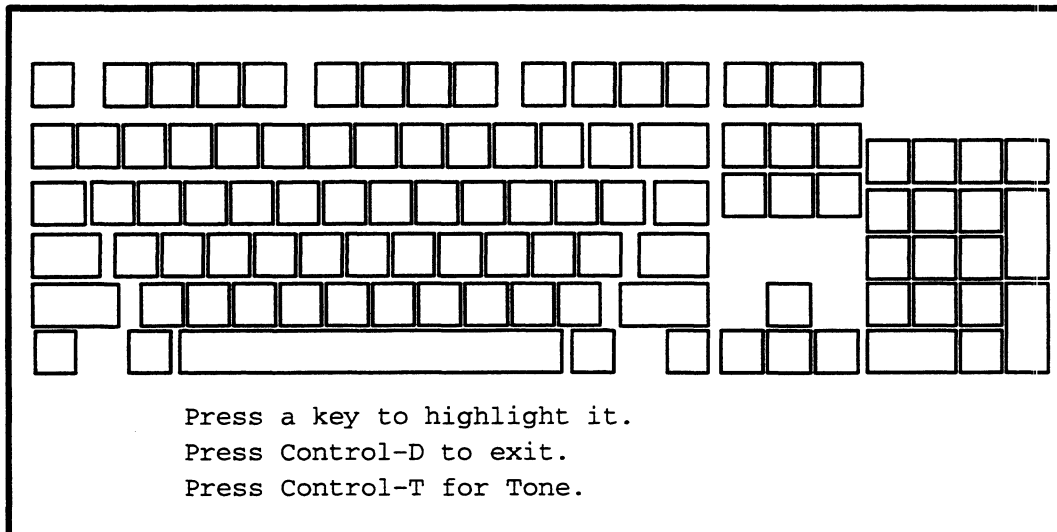
1. While in the on-line Tools Menu, type 1 and press New Line to select item 1, "Run Keyboard test."

Tools Menu

1. Run Keyboard Test
2. Run Mouse test
3. Run Printer Test
4. Display help screen
5. Return to Main Menu

Enter choice [5]: 1

The system displays a keyboard outline indicating the current keyboard language in text at the top of the screen.

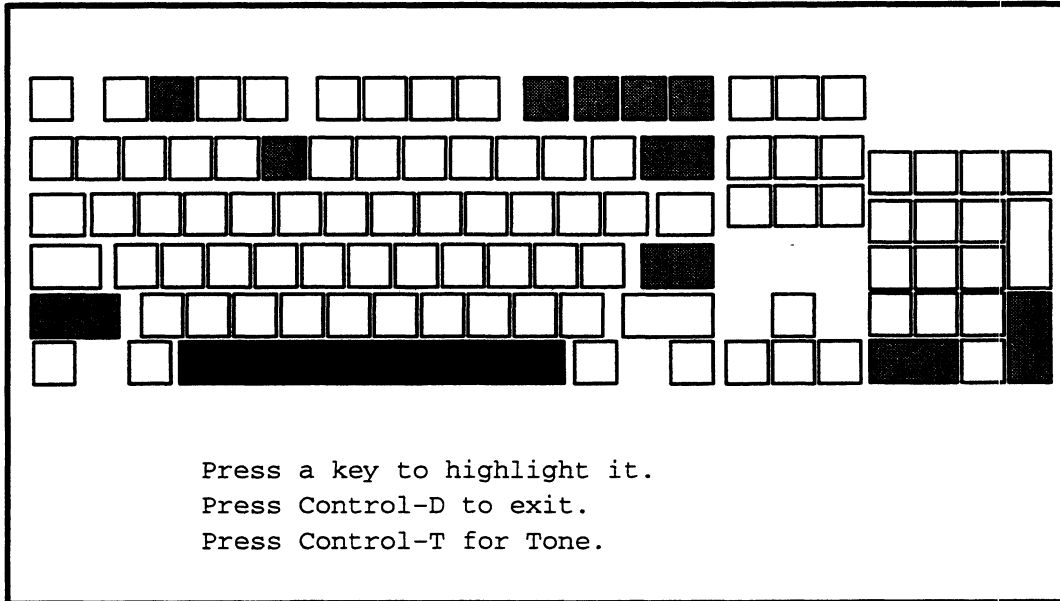


Each time you press a key on your keyboard, the corresponding key on your screen keyboard figure is highlighted. The display key remains highlighted as long as you hold down the keyboard key. Once you release the key, the tested key on your display remains highlighted in a different shade.

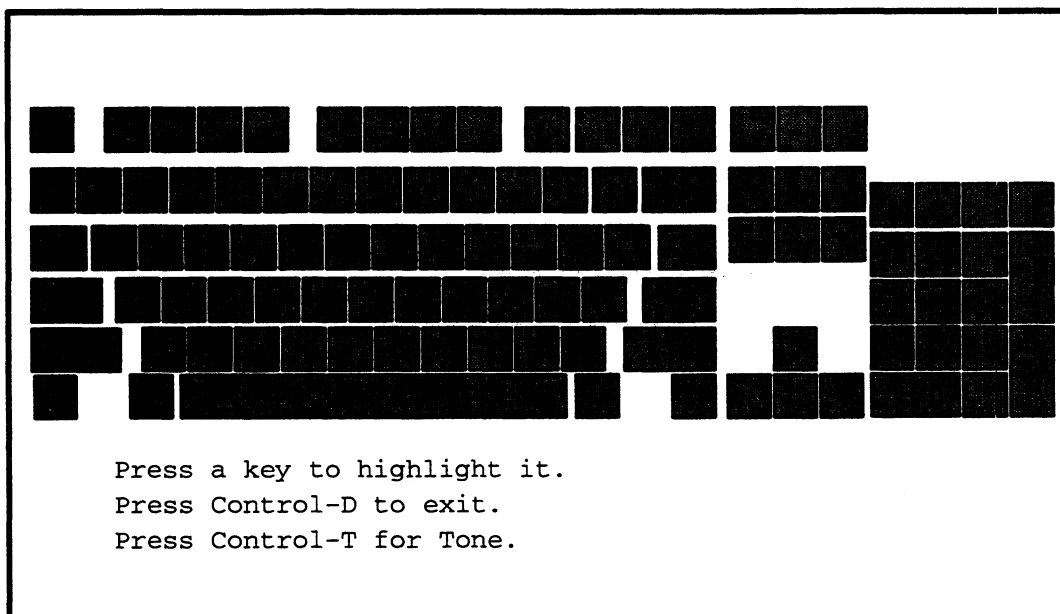
If any key does not respond as described above, you probably need to clean or replace your keyboard; contact Data General as described in the Preface.

The <Ctrl-T> sequence initiates a tone from the computer unit speaker; this verifies speaker operation.

2. Press each key on your keyboard. In the following example, several keys have been tested, indicated by shading; the space bar is currently being tested, indicated by darker shading.



Every key on the screen keyboard template should be highlighted when you complete the test, as seen below.



3. Use the <Ctrl-D> sequence to return to the Tools menu when you complete the keyboard test.

## Testing a Mouse Device

This section describes how to test a mouse device connected to an AViiON workstation mouse port.

**IMPORTANT:** The mouse test will not run if your DG/UX system is currently running X-Windows.

(If you suspect a problem with your graphics display, you can also use stand-alone system diagnostic utilities to test the graphics monitor.)

To test your mouse device, select the Mouse test as follows:

1. While in the Tools menu, type **2** and press New Line to select item 2, "Run Mouse test."

Tools Menu

1. Run Keyboard Test
2. **Run Mouse test**
3. Run Printer Test
4. Display help screen
5. Return to Main Menu

Enter choice [5]: **2**

2. Verify the mouse port:

Device name of mouse [/dev/mouse] ↵

Press Enter to select the default.

**IMPORTANT:** On some earlier AViiON workstations, the mouse port is /dev/tty00.

3. Your screen displays a 3-button mouse figure, with x and y coordinates for the current location of your mouse:

Move mouse to test screen positioning.  
Press a button to highlight it.  
Press Control-D to exit.

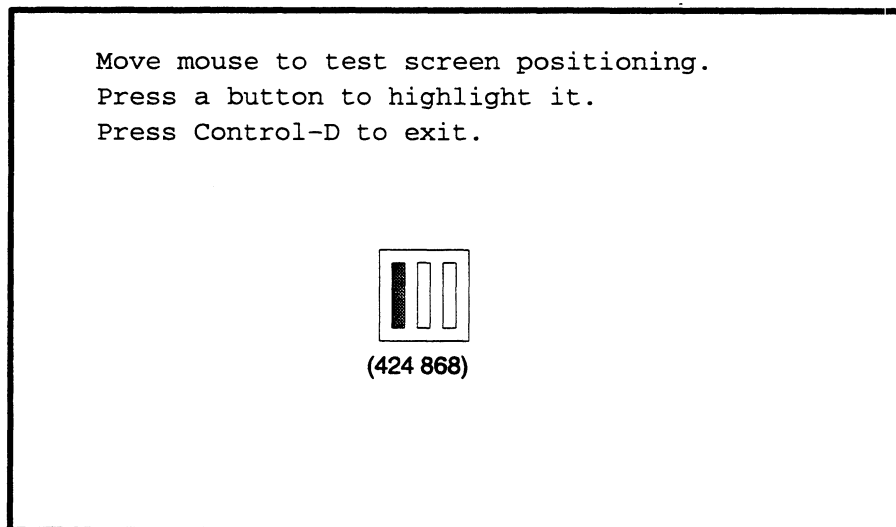


(988 1034)

4. Move your mouse around the mouse pad. The figure on your screen should move in corresponding motion. Coordinate values change as you move the mouse. The top, leftmost corner is location (0, 0).

If your screen display does not respond as described when you move your mouse, verify that the mouse cable is properly connected, that the bottom of the mouse is clean and static-free, and that the mouse pad is clean and oriented in the proper direction. If the screen mouse still does not reflect motion of the mouse device on the mouse pad, contact Data General as described in the Preface.

5. Press the left mouse button. The left button on the mouse diagram should change color. Similarly, the right and middle buttons change color when you press the right and middle mouse buttons.



If pressing mouse buttons do not change the screen display, you may need to replace your mouse. Contact Data General as described in the Preface.

6. Use the <Ctrl-D> sequence to return to the Tools menu when you complete the mouse test.

## Testing Printers

This section describes how you can test a parallel or serial printers. Follow the steps below to run a test to verify printer operation, and help determine what, if any, adjustment you should make to the printers connected to your system.

You access the Printer Test from the Tools menu.

1. Type **3** and press New Line to select item 3, "Run Printer Test."

Tools Menu

1. Run Keyboard Test
2. Run Mouse test
3. **Run Printer Test**
4. Display help screen
5. Return to Main Menu

Enter choice [5]:

2. You see a "Printer Test Parameters" screen. You must respond to these prompts before the utility begins.

Printer Test Parameters

```
Device to Test [/dev/lp]: /dev/
Enter the printer type: [default]
Rotating or Single Character Set (R/S)? [R]:
Are you sure of your choices [Y/N]? [Y]:
```

**End of Chapter**





# 5 Using Stand-alone Diagnostics

---

## *Read This Chapter*

- ▶ To learn how to start and use stand-alone diagnostics.
- ▶ If you suspect hardware error and want to check your entire system out.
- ▶ To run a periodic preventive maintenance check.
- ▶ To make a disk or tape copy of the stand-alone diagnostics.
- ▶ To test particular hardware components of your computer, such as asynchronous terminals, monitors, workstation mouse and keyboard, or LAN cabling.

AViON® System Diagnostics software (stand-alone diagnostics) provides menu-based utilities that allow you to test your AViON computer when no other system software is running.

You receive the stand-alone diagnostics with every AViON computer preloaded on disk or on removeable media labeled AViON Diagnostics.

**IMPORTANT:** An active warranty or service contract is *not* necessary to use stand-alone diagnostics.

This first part of this chapter provides information you need to use the stand-alone diagnostics:

- How to boot the stand-alone diagnostic operating system from disk, CD-ROM, tape, or over a local area network (LAN).
- How to start the stand-alone diagnostics software and how to exit from the stand-alone diagnostics to reboot your operating system.
- How to use the interactive menus and keyboard control features.
- How to copy the system diagnostic software from tape to disk, and from disk to tape.

This latter part of this chapter provides step-by-step instructions for running each of the diagnostic utilities available from the stand-alone diagnostics Main menu.

## Before You Start

Refer first to the printed *AViiON Diagnostics Release Notice* that accompanies the release media for any special instructions or information.

If your system diagnostics are on disk, you can display an electronic copy of the Release Notice. While the DG/UX operating system is running, use the following command line:

```
more /usr/release/diags.rn ↵
```

## Using the Menu

Appendix C illustrates the stand-alone diagnostic menu structure, including the items accessible from the Main Menu and the Tools menu options and submenus.

Tools submenus differ according to your AViiON model. If your computer has a graphics controller, your Tools menu includes a Graphic Tools submenu with utilities to test the controller, monitor, keyboard, and mouse. If your computer has a VME terminal controller, your Tools Menu includes a Terminal Test submenu with utilities for testing attached terminal and printer connections. Refer to the next section for information about using the Tools menu items.

You can exit from any menu by selecting its last item number, or by pressing the New Line key without selecting an item. You return to the previous menu *except* when you leave the Main Menu; when you exit from the Main Menu, you leave the diagnostics and return to the SCM (System Control Monitor) prompt.

AV/  
ALERT

To view the status of AV/Alert MI calls sent while running stand-alone diagnostic tests, use the "View MI Status" option on the Main Menu. Refer to Chapter 3 for more information.

## Using Special Keyboard Characters

Table 5-1 shows how you can use certain keys and key sequences to control the stand-alone diagnostic software while it is running. Refer to the Preface for information about how keyboard symbols are used in this manual.

**Table 5-1** Keyboard Control Functions: Stand-alone Diagnostics

| Entry                       | Description                                                                                                                                            |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>]</code>              | Begin execution of prior input or select the default at prompts.                                                                                       |
| <code>s</code>              | Update status display while the Acceptance test is running. Select a target controller for executing any test on the Tools menu or Terminal Test menu. |
| <code>d</code>              | Deselect (skip) a controller as a target for executing any test on the Tools menu or the Terminal Test menu.                                           |
| <code>q</code>              | Quit from (exit) current menu. Stop the Acceptance test from executing before it begins.                                                               |
| <code>&lt;ESC&gt;</code>    | Exit from the current menu to display the previous menu.                                                                                               |
| <code>&lt;Ctrl-D&gt;</code> | Interrupt execution of a test and display the previous menu.                                                                                           |
| <code>&lt;Ctrl-Q&gt;</code> | Resume output display that you suspended with the Ctrl-S sequence.                                                                                     |
| <code>&lt;Ctrl-S&gt;</code> | Suspend output display until you resume it with the Ctrl-Q sequence.                                                                                   |

## Exiting Stand-alone Diagnostics

Follow these steps when you are ready to leave stand-alone diagnostics and reboot your operating system:

1. While in the system diagnostics Main Menu, select item 4, "Exit to SCM" to enter the System Control Monitor (SCM).

The system displays the SCM prompt.

```
SCM>
```

**IMPORTANT:** In multiprocessor systems, the default SCM prompt appears as follows: `Jp#n/SCM>` (where `n` is the number of the attached job processor).

2. Type `r` and press New Line to reset your system by executing the **SCM RESET** command.

```
SCM> r ↵
```

The screen goes blank for a moment and then displays hardware status values, followed by the SCM prompt.

3. Boot your operating system by entering the **BOOT** command as follows:

```
SCM> b ↵
```

If your system does not include preloaded DG/UX, if you have not installed your operating system on disk, or if the default SCM boot path is not set for your operating system boot path, the boot attempt fails and the system displays the SCM prompt again.

Repeat the **BOOT** command, this time including the boot device path and the disk location and filename of your operating system as arguments. Refer to Tables 5-2 through 5-5 for boot device paths.

## Copying Stand-alone Diagnostics to Disk

If your system configuration includes both a tape drive and a hard disk drive, you can use the media labeled *AViiON Diagnostics* to load the software onto your system disk. Loading the system diagnostics to disk allows you to boot from disk each time you use the stand-alone diagnostics.

To copy the stand-alone diagnostics to a file called `diags` in the `/usr/stand` directory on your system (root) disk, use the following DG/UX commands:

```
df -k /usr/stand ↵
```

(Make sure the result shows at least 4 megabytes of disk space available in `/usr/stand`.)

```
dd if=/dev/rmt/0 of=/usr/stand/diags ibs=612b obs=512 conv=sync ↵
```

You can now follow the steps in the section “Booting Diagnostics From Disk” whenever you use the stand-alone diagnostics.

## Making a Backup Tape from Disk

If your system configuration includes both a QIC tape drive and a hard disk drive, you can copy the system diagnostics disk files onto tape. Copying the diagnostics to tape allows you to boot the system diagnostics from tape if there is ever a problem accessing your disk files.

To copy the contents of the “AV System Diagnostics” to tape media from a file called `diags` in the `/usr/stand` directory on your system (root) disk, use the DG/UX `dd` command, as follows:

```
dd if=/usr/stand/diags of=/dev/rmt/0 ibs=512 obs=612b conv=sync ↵
```

You can now follow the steps in the section “Booting Diagnostics From Tape” whenever you need to use the system diagnostic backup tape.

## Booting Stand-alone Diagnostics

If your computer came with the DG/UX™ operating system preloaded on disk, the system diagnostics software is also preloaded; you can boot from disk.

If the system diagnostic software is not installed on disk, you boot the diagnostic operating system from the *AViiON Diagnostics* media.

If you have a diskless and/or tapeless workstation connected by LAN to an AViiON server, you must download the system diagnostics to your workstation and boot over the network.

- ▶ To boot the system diagnostics, begin at the SCM (System Control Monitor) prompt; your operating system cannot be running.

On a multiuser DG/UX system, shut down the operating system as follows:

```
cd / ↵
shutdown -g0 -y ↵
halt -q ↵
```

On a stand-alone DG/UX system, use the init command:

```
init 6 ↵
```

(For a non-DG/UX operating system, refer to your operating system documentation for instructions on properly shutting down and halting.)

**IMPORTANT:** If your computer is not yet powered on, turn power on now and type <Ctrl-C> *after powerup testing completes* to interrupt the automatic boot sequence. As long as you execute the <Ctrl-C> key sequence *before* the operating system bootstrap takes control of the computer, you can access the SCM prompt in this way.

Once your system displays the SCM prompt, you can boot the stand-alone system diagnostics. Go to the appropriate section below for booting from the system disk, from tape, from CD-ROM, or over a LAN.

## Booting from Disk

**IMPORTANT:** If your system's **usr** logical disk contains more than one piece, you cannot boot from hard disk. Boot from tape, CD-ROM, or over the LAN instead.

At the SCM prompt, use the **SCM BOOT** command, specifying the device path (the controller and disk device name for the boot disk) and the file path (the name and location of the program, **usr:/stand/diags**) as arguments. Which device path you use depends upon your AViiON configuration.

If your root disk is in a factory-default configuration, you can select the appropriate device argument from Table 5-2; then, append the file path **usr:/stand/diags** to construct a **BOOT** command line, as follows:

```
JP#0/SCM> b [your_root_disk]usr:/stand/diags ↵
```

**IMPORTANT:** If you completed the Installation Planning Worksheets in the *Installing DG/UX™* manual, you recorded your boot device names there.

**Table 5-2** Default Disk Boot Arguments

| AViiON Configuration                                                                                                 | Root Disk             |
|----------------------------------------------------------------------------------------------------------------------|-----------------------|
| 100, 200, 300, 400, 3000, 4000, or 4300 series with integrated SCSI controller (insc).                               | <b>sd(insc(),0)</b>   |
| 500, 530, 4600, or 7400 series <i>and above</i> with integrated NCR SCSI controller (ncsc).                          | <b>sd(ncsc(),0)</b>   |
| 4600 or 5000 series <i>and above</i> with Data General SCSI-2 controller.                                            | <b>sd(dgsc(),0)</b>   |
| 5000 or 6000 series with Ciprico SCSI controller.                                                                    | <b>sd(cisc(),0)</b>   |
| 5000 with Ciprico ESDI controller (cied).                                                                            | <b>cied()</b>         |
| 5000 with Ciprico SMD controller (cimd).                                                                             | <b>cimd()</b>         |
| 5000 series <i>and above</i> with system disk bound in first high-availability disk-array (H.A.D.A.) storage system. | <b>da(hada(),0)</b>   |
| 5000 series <i>and above</i> with system disk bound in first CLARiiON storage system.                                | <b>sd(dgsc(),0,0)</b> |

For example, type the following and press New Line for most AViiON servers with a VMEbus chassis:

```
JP#0/SCM> b sd(dgsc(),0)usr:/stand/diags ↵
```

Or, type the following and press New Line if your SCSI disk controller is integrated on the system board.

```
SCM> b sd(ncsc(),0)usr:/stand/diags ↵
```

After booting the system diagnostics, proceed with the “Starting System Diagnostics” section.

## Booting from Cartridge Tape

Follow these steps to boot the system diagnostics from the “boot” tape (a local cartridge tape drive set at SCSI ID 4).

1. Locate the QIC (quarter-inch cartridge) tape labeled “AViiON Diagnostics.”
2. Make sure that the write-protect indicator on the cartridge tape points to “SAFE.”
3. Insert the cartridge tape into the tape drive. Orient the cartridge tape to the tape drive opening.

**IMPORTANT:** Refer to the manual that came with the drive for information about inserting and using cartridge tape media.

4. Gently push the tape into the drive opening; then, push it firmly all the way into the drive until it remains in place. Close the drive door, or slide the load/eject latch to the right (horizontally-mounted drives) or down (vertically-mounted drives) to lock the cartridge tape in place.

You hear the drive make a whirring sound as the read/write heads find the beginning of the cartridge. If you don't hear this sound, the tape is not properly inserted or the drive is not locked; remove the tape and repeat this step.

5. At the SCM prompt, use the **SCM BOOT** command, specifying the device path (the controller and SCSI ID number for your tape drive) as an argument. Which device path you use depends upon your AViiON configuration. If yours is a default configuration, you can choose the appropriate device path from Table 5-3.

**IMPORTANT:** If you completed the Installation Planning Worksheets in the *Installing DG/UX™* manual, you recorded your boot device names there.

**Table 5-3** Default Tape Boot Arguments

| AViiON Configuration                                                                    | Tape Drive            |
|-----------------------------------------------------------------------------------------|-----------------------|
| 100, 200, 300, 400, 3000, 4000, and 4300 series with integrated SCSI controller (insc). | <b>st(insc ( ),4)</b> |
| 500, 530 or 4600 series <i>and above</i> with integrated NCR SCSI controller (ncsc).    | <b>st(ncsc ( ),4)</b> |
| 4000 series <i>and above</i> with Data General SCSI-2 controller.                       | <b>st(dgsc ( ),4)</b> |
| 4000, 4600, 5000, 6000 series with Ciprico SCSI VME controller.                         | <b>st(cisc ( ),4)</b> |

For example, type the following and press New Line for most AViiON servers (SCSI devices are managed by the first SCSI-2 adapter installed in a VME option slot):

```
Js#0/SCM> b st(dgsc(),4) ↵
```

Type the following and press New Line if your SCSI controller is integrated on the system board:

```
SCM> b st(ncsc(),4) ↵
```

Refer to your computer's hardware *Installing or Setting Up and Starting* manual for detailed information about model-specific boot path arguments.

6. After booting, proceed with the next section, "Starting Stand-alone Diagnostics."

## Booting from CD-ROM

Follow these steps to boot the system diagnostics from CD-ROM.

1. Locate the CD-ROM media labeled "AViiON Diagnostics."
2. Insert the disk into the CD-ROM drive and close the drive.

**IMPORTANT:** Refer to the manual that came with the drive for information about inserting and using CD-ROM media.

3. At the SCM prompt, use the SCM **BOOT** command, specifying the device path (the controller and SCSI ID number for your CD-ROM drive) as an argument. Which device path you use depends upon your AViiON configuration. If yours is a default configuration, you can choose the appropriate device path from Table 5-4.

**IMPORTANT:** If you completed the Installation Planning Worksheets in the *Installing DG/UX™* manual, you recorded your boot device names there.



**Table 5-4** Default CD-ROM Boot Arguments

| AViON Configuration                                                                     | CD-ROM Drive        |
|-----------------------------------------------------------------------------------------|---------------------|
| 100, 200, 300, 400, 3000, 4000, and 4300 series with integrated SCSI controller (insc). | <b>st(insc(),3)</b> |
| 500, 530 or 4600 series <i>and above</i> with integrated NCR SCSI controller (ncsc).    | <b>st(ncsc(),3)</b> |
| 4600 series <i>and above</i> with Data General SCSI-2 controller.                       | <b>st(dgsc(),3)</b> |

For example, type the following and press New Line for most AViON servers (SCSI devices are managed by the first SCSI-2 adapter installed in a VME option slot):

```
Jp#0/SCM> b st(dgsc(),3) ↵
```

Type the following and press New Line if your SCSI controller is integrated on the system board:

```
SCM> b st(ncsc(),3) ↵
```

Refer to your computer's hardware *Installing or Setting Up and Starting* manual for detailed information about model-specific boot path arguments.

4. After booting, proceed with the next section, "Starting stand-alone Diagnostics."

## Booting over the Network

If your AViON computer is configured as a network client to an AViON server, you can boot the stand-alone diagnostics over the network.

**IMPORTANT:** The manual *Installing DG/UX™* (Appendix A) contains information necessary to set up your network server to allow a workstation to boot from its tape drive as a network *tape client*.

At the SCM prompt, use the **BOOT** command, specifying the device name of your LAN controller, the Internet address of the server, and the file path (the name and location of the program/*stand/diags*) as arguments. Which device path you use depends upon the type of LAN controller managing your computer's connection to the LAN. Choose the appropriate device path from Table 5-5.

**Table 5-5** Default LAN Boot Arguments

| AViiON Configuration                              | LAN Device    |
|---------------------------------------------------|---------------|
| 100, 200, 300, 400, 3000, 4000, and 4300 series   | <b>inen()</b> |
| All other with integrated Ethernet LAN controller | <b>dgen()</b> |
| VME Ethernet controller                           | <b>hken()</b> |
| VME Token Ring controller                         | <b>vitr()</b> |

*Note:* Device names in this table specify the *first* controller of each type in the system. Enter the controller number within parentheses to specify another LAN controller. (For example, **hken(1)** specifies the *second* VME Ethernet controller.)

**IMPORTANT:** You need the Internet address of the computer configured to provide services to your computer if there is more than one server on the LAN.

For example, type the following to boot the system diagnostics over a LAN connection managed by the first VLC (VME LAN controller), from the server system at Internet address **128.111.2.3**:

```
Js#0/SCM> b hken()128:111.2.3/stand/diags ↵
```

Or, type the following if your LAN connection to the only server on your LAN is managed by your computer's integrated Ethernet controller:

```
SCM> b dgen()/stand/diags ↵
```

Refer to your computer's hardware *Installing or Setting Up and Starting* manual for detailed information about booting over a LAN using the SCM **BOOT** command.

After booting the system diagnostics, proceed with the section "Starting System Diagnostics."

# Starting Stand-alone Diagnostics

After booting the diagnostics, follow the steps in this section to start the stand-alone diagnostic operating system and display the System Diagnostics Main Menu.

## A Note About Screen Examples

Please note the following as you use the stand-alone diagnostics:

- ▶ We recommend that you have a written system inventory, or know the configuration of hardware installed in your AViiON computer.
- ▶ This manual does not illustrate exact screen messages for *every* AViiON hardware model or configuration; however, the examples and instructions in this chapter do distinguish between computers with and without VMEbus support, since there are significant differences in screen display. (Some AViiON computers use a VMEbus interface for peripheral I/O; others use one or more integrated SCSI bus to manage peripherals. Many AViiON models use *both* integrated SCSI and VMEbus controllers.)
- ▶ Sections and examples marked for *workstations* apply to any AViiON model with a graphics controller, display monitor, keyboard, and mouse. Some AViiON models have both VME and graphics support.

Your screen display is not likely to match *precisely* what you see in screen display examples within this chapter; however, you should be able to use the examples given, along with corresponding text explanations, to determine how your screen display should appear.

If you have questions about your particular hardware configuration while running diagnostics that you cannot resolve using this manual, contact the Data General Customer Support Center, as described in the Preface.

1. After the boot process completes, the first thing you see is the copyright screen:

```
Licensed Material - Property of DGC
Data General Proprietary Diagnostics
```

```
This diagnostic material contains information which is
proprietary and confidential to Data General Corporation (DGC)
```

```
....
```

(C) DATA GENERAL CORPORATION 1989-1993

This copyright notice does not constitute or evidence publication or public disclosure.

Press New Line to proceed.

Press New Line to clear the copyright notice.

2. Next, your display indicates the revision of stand-alone diagnostics and the current date and time. (You will have an opportunity to modify the date and time, if necessary, later.)

System Diagnostics  
Revision xx.xx mm/dd/yy hh:mm:ss

The diagnostic operating system begins locating (*sizing*) each I/O controller in your configuration. **Skip to step 4 if your AViiON computer does not include a VMEbus.**

#### Example: VMEbus Hardware

If your AViiON computer has a VMEbus, it first looks for controllers at expected VME addresses. Then, the sizer looks for add-on SCSI and LAN controllers integrated in an optional expansion board.

Initializing Operating System

Sizing Optional Controllers:

|                                           |       |
|-------------------------------------------|-------|
| VME SCSI Controller at 0xffffc000         | Found |
| VME SCSI Controller at 0xffffc080         | Found |
| VME LAN Controller at 0xffff4000          | Found |
| VME Synchronous Controller at 0x55b00000  | Found |
| VME Asynchronous Controller at 0x60000000 | Found |
| VME Asynchronous Controller at 0x60020000 | Found |

Sizing Expansion Boards:

|                       |       |
|-----------------------|-------|
| Expansion I/O Board 0 | Found |
|-----------------------|-------|

Press New Line to proceed

**IMPORTANT:** Verify that each of your installed I/O controllers are properly sized (you see the message `Found`). You don't need to verify the addresses; simply be sure that your display indicates the correct number of each types of controller. If the diagnostics does not find a configured controller, make sure that it is properly installed (as described in the manual *Setting Up and Installing VMEbus Options in AViiON® Systems*); or, contact Data General for assistance (as described in the Preface).

3. Press New Line to continue.

4. The diagnostic operating system initializes each component in your computer's configuration.

► The following examples show screen display after sizing and initialization is complete:

**Example: VMEbus Hardware**

```
xxxxx Kbytes system memory
xxxxx Kbytes memory available for test
PROM revision xx.xx
Dual CPU System (Motorola 881x0 CPU Rev x)
2 Instruction Caches (Motorola 88xx0 CMMU Rev x)
2 Data Caches (Motorola 8xx00 CMMU Rev x)
Initializing Virtual Console
Initializing Real Time Clock
Initializing VME Async I/O Board 0
Initializing VME Async I/O Board 1
Initializing VME SCSI Controller 0
Initializing VME SCSI Controller 1
Initializing VME SCSI Controller 2
Initializing VME SCSI Controller 3
Initializing Duart
Initializing VME LAN Board 0
Initializing VME LAN Board 1
Initializing VME Sync I/O Board 0
```

**Example: No VMEbus**

```
Initializing operating system
xxxx Kbytes system memory
xxxx Kbytes memory available for test
PROM rev. xxx
Single CPU System
 881x0 CPU Rev x
Initializing Virtual Console
Initializing Real Time Clock
Initializing Integrated SCSI
Initializing Integrated LAN (00-00-xx-xx-xx-xx)
Initializing 8-bit Color Graphics Controller
Initializing Keyboard
Initializing Duart 0
Initializing Duart 1
```

5. Verify the current date and time.

```
Current time is 16:24 Monday, January 25, 1993.
Is this correct (y/n) [y]?
```

If the date and time are correct, press New Line. If you need to correct the date and time, select No and press New Line (n ↵).

**IMPORTANT:** The date and time reported by the stand-alone diagnostics is standard UTC (or, Greenwich Mean Time). Changes you make here are stored in a battery backed-up system clock. When you boot your operating system, it adjusts for any time zone offset. *Do not adjust for a UTC offset when entering the time here.*

To enter the correct date and time at the prompts, use the format **mm/dd/yy** for the date and **hh:mm** for the time. Enter the time in a 24-hour format (as in 16:24 for 4:24 p.m.) *without time zone offset.*

6. Next, the diagnostic operating system sizes peripherals connected to initialized controllers. Examine the list carefully; if a peripheral is not listed it could indicate a loose or faulty cable connection, an incorrect device ID, or a serious hardware problem within the device or its controller.

If the message `Drive is NOT READY` appears after a listed mass-storage device, place the drive on line. If it is a tape drive, place a write-enabled scratch tape in the tape drive and close the drive.

If a configured drive is missing from the peripheral sizing list, verify each of the following first; then, start the diagnostics again.

- The drive or mass-storage subsystem is powered on.
- All cabling is connected properly and the peripheral is configured according to SCSI device identification (SCSI ID) guidelines, as described in your AViiON series installation manual.
- The drive is installed correctly, as described in the drive manual.

If the device is not initialized the second time you start the system diagnostics, contact Data General as described in the Preface.

- ▶ The following screen examples show the workstation after sizing its configured peripherals.

**Example: No VMEbus**

```
Sizing Peripherals...
```

```
Integrated SCSI:
```

```
Unit 0: Microp 1578-15 UPDG02 Disk Drive found
Unit 3: TEAC 5.25 Floppy (LUN 0) Disk Drive found
Unit 4: Archive Viper 150 2147-5 Tape Drive found
```

```
Press New Line to proceed.
```

**Example: VMEbus Hardware**

Current time is xx:xx Tuesday, May 4, 1993. Is this correct (Y/N) [Y]?

Sizing Peripherals....

VME SCSI Board 0:

Unit 0: Microp 1578-15 UPDG02 Disk Drive found  
Unit 1: Microp 1578-15 UPDG02 Disk Drive found  
Unit 3: TEAC 5.25 Floppy (LUN 0) Disk Drive found  
Unit 3: TEAC 5.25 Floppy (LUN 1) Disk Drive found  
Unit 4: Archive Viper 150 21247-045 Tape Drive found

VME SCSI Board 1:

Unit (Drive Number) 0: 662 MB ESDI Disk found  
Unit (Drive Number) 1: 662 MB ESDI Disk found  
Unit (Drive Number) 2: 662 MB ESDI Disk found

VME Async Board 0:

128-line VME Host Adapter  
Model = HPS-6945  
Firmware P/N = 90-070052-3-02A

Sizing Cluster Controller Network

-----  
Net ID = 01 (hex): HPS-7088-020 (Ready)  
Net ID = 08 (hex): HPS-7088-020 (Ready)  
Net ID = 13 (hex): HPS-7082-020 (Ready)

VME Async Board 1:

16-line VME Async Board  
Model = HPS-6236  
Firmware P/N = 90-070408-8-01A

Press New Line to proceed

7. Once you are certain that the peripheral list matches your system configuration, press New Line to continue.

**The screen displays the Main Menu.**

System Diagnostics  
Revision: xx.xx

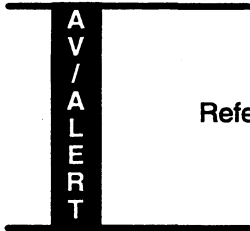
Data General Corporation  
Proprietary Use Only

Main Menu

1. Run Acceptance test
2. View Tools Menu
3. View MI Callout Menu
4. Display help screen
5. Exit

Enter choice [4]:

**Select item 4, "Display help screen" for a brief on-line description of the menu options.**



Refer to Chapter 3 for information about item 3, "View MI Callout Menu."



# Running the Stand-alone Hardware Acceptance Test

This section describes how to use the 15-minute stand-alone hardware Acceptance test. The Acceptance test sizes and verifies proper functioning of your computer's hardware components.

Run the stand-alone Acceptance test when your computer or any individual hardware component is new, when you can't boot your operating system; and, if you choose, on a periodic maintenance schedule.

**IMPORTANT:** Run the *on-line* version of the Acceptance test (in SVCNMR) whenever you want to thoroughly test your computer hardware without bringing down the DG/UX system.

## About Screen Examples

To more closely approximate accurate screen display in Acceptance test examples, this section provides separate examples for configurations with and without VME hardware. Whether your AViiON computer is a server-type model with VME hardware, or a model with no VMEbus, determines which set of screen examples you should examine within these steps.

**IMPORTANT:** With or without VMEbus hardware, your screen display will reflect your particular configuration and is likely to differ slightly even from these examples.

## Starting the Acceptance Test

After booting and starting the stand-alone diagnostics (as described earlier in this chapter), start the Acceptance from the Main Menu.

Main Menu

1. **Run Acceptance test**
2. View Tools Menu
3. View MI Callout Menu
4. Display help screen
5. Exit

Enter choice [1]: ↵

▶ Press New Line to select the default, item 1, "Run Acceptance test".

The Acceptance test begins by displaying a list of the devices found during initialization. Your screen display reflects your exact configuration.

### **Example: VMEbus Hardware**

The Acceptance Test verifies that the following system components are functioning:

Memory  
CPU0  
CPU1  
Integrated DUART Channel B  
Clock  
VME LAN Board 0  
Parallel Printer  
VME SCSI Board 0 Microp 1578-15 disk drive (unit: 0)  
VME SCSI Board 0 Microp 1578-15 disk drive (unit: 1)  
VME SCSI Board 0 TEAC 5.25 Floppy drive (LUN 0)(unit: 3)  
VME SCSI Board 0 TEAC 5.25 Floppy drive (LUN 1) (unit: 3)  
VME SCSI Board 0 ARCHIVE VIPER 150 tape (unit: 4)  
VME SCSI Board 1 Microp 1578-15 disk drive (unit: 0)  
VME SCSI Board 1 Microp 1578-15 disk drive (unit: 1)  
VME SCSI Board 1 ARCHIVE VIPER 150 tape (unit: 4)  
VME Host Adaptor 0  
16-line VME Async Board 1  
VME Sync Board 0

This test runs for 15 minutes

Press New Line to Start Acceptance Test - Press Q to Quit.

### **Example: No VMEbus**

The Acceptance Test verifies that the following system components are functioning:

Shared Memory  
Memory  
CPU  
Integrated DUART 0 Channel A  
Integrated DUART 0 Mouse Interface  
Integrated DUART 1 Channel A  
Clock  
Integrated LAN 0  
Integrated SCSI Microp 1578-15 Disk (unit: 0)  
Integrated SCSI TEAC 5.25 floppy (LUN 0)(unit: 3)  
Integrated SCSI ARCHIVE Viper 150 Tape (unit: 4)

This test runs for 15 minutes.

Press New Line to Start Acceptance Test. Press Q to Quit.

Proceed now with the "Running the Acceptance Test" section.

## Running the Acceptance Test

Follow the steps below to complete the Acceptance test. Your screen display will reflect your particular configuration, and will therefore differ in content from the examples given.

**CAUTION:** *All testing is nondestructive EXCEPT the tape drive test. If you used cartridge tape to boot the stand-alone diagnostics, remove the tape from its drive before proceeding.*

1. Press New Line to start the test.
2. Before beginning the test, the utility displays the following message:

CAUTION: Tape tests destroy all data on the tape. Please insert write-enabled scratch tapes for all tape units to be tested. Press New Line when ready to proceed.

Insert a blank (scratch) tape into each tape drive you wish to test. Make sure that scratch tapes are write-enabled, since tape tests need to record on the tape. Refer to documentation that came with the drive for information about removing, write-enabling, and inserting cartridge tapes.

3. Press New Line once you have inserted write-enabled scratch tapes.

If one or more of the tapes is not write-enabled, you'll see the following message:

Media in [unit x] is write protected.  
Please press New Line to cancel tape test or insert a write-enabled scratch tape and press New Line to proceed.

Remove the tape from the drive(s) specified and repeat steps 3 and 4; or, press New Line to cancel the tape test on that drive and start the testing.

4. Once the Acceptance test begins, you see an initial General Status Report screen, as seen in the following example.

**Example: VMEbus Hardware**

## General Status Report

```

Revision: xx.xx Total Errors: 0000
Elapsed Time: 00:00:10 Current Time: 10:26:34

TEST SUBSYSTEM PASS SOFT HARD KBYTES KBYTES
ID DESCRIPTION COUNT ERRORS ERRORS READ WRITTEN
54 Shared Memory 0 0 0 0 0
53 CPU 0 0 0 0 0
52 Integrated DUART 0 0 0 0 0 0
51 Integrated DUART 1 0 0 0 0 0
50 Clock 0 0 0 0 0
49 Integrated LAN 0 0 0 0 0 0
48 Integrated LAN 1 0 0 0 0 0
47 VME TKR Board 0 0 0 0 0 0
46 Integrated SCSI 0 0 0 0 0
45 VME VTC Board 0 0 0 0 0 0
44 VME VSC/3i Controller 0 0 0 0 0 0
43 VME VFC Controller 0 0 0 0 0 0

S - Update General Status Report Ctrl-D to Stop all Tests

```

**Example: No VMEbus**

## General Status Report

```

Revision: xx.xx Total Errors: 0000
Elapsed Time: 00:00:10 Current Time: 10:26:34

TEST SUBSYSTEM PASS SOFT HARD KBYTES KBYTES
ID DESCRIPTION COUNT ERRORS ERRORS READ WRITTEN
53 Shared Memory 0 0 0 0 0
52 Memory 0 0 0 0 0
51 CPU 0 0 0 0 0
50 Integrated DUART 0 0 0 0 0 0
49 Integrated DUART 1 0 0 0 0 0
48 Clock 0 0 0 0 0
47 Integrated LAN Board 0 0 0 0 0 0
46 Integrated SCSI 0 0 0 0 0

S - Update General Status Report Ctrl-D to Stop all Tests

```

The utility assigns a test number to each individual test. Once testing begins, the status report indicates the number of passes completed for each test, any errors detected during testing, and the number of kilobytes of data read and/or written.

The General Status Report screen automatically displays updated information every minute, but you can type **s** to view current statistics at any time during testing.

If any test encounters a serious fault, the Acceptance test halts and you see an error message and fault code or the SCM (System Control Monitor) prompt on your screen. If either of these things happen, write down any text displayed on your screen and contact Data General as described in the Preface.

**AV / ALERT**

If the MI callout feature of AV/Alert is enabled, a hard error initiates an automatic call to the Data General Customer Service Center computer. The call is recorded in the stand-alone diagnostics MI Callout Log.

The Acceptance test runs for 15 minutes. To stop testing, press <Ctrl-D> at any time; this interrupts the current test and invalidates any testing that was already complete. You must let the test run for the full 15 minutes in order to properly test your computer.

- At the end of the Acceptance test you see a Final Status Report, as seen in the examples below. You see a final status even if you have interrupted testing, but should not consider your hardware fully verified unless the Acceptance test runs for the entire 15 minutes without interruption.

**Example: VMEbus Hardware**

## General Status Report

```
Revision: xx.xx Total Errors: 0000
Elapsed Time: 00:15:10 Current Time: 10:41:34
```

| TEST ID | SUBSYSTEM DESCRIPTION   | PASS COUNT | SOFT ERRORS | HARD ERRORS | KBYTES READ | KBYTES WRITTEN |
|---------|-------------------------|------------|-------------|-------------|-------------|----------------|
| *       | Shared Memory           | 4428       | 0           | 0           | 427193      | 355974         |
| *       | CPU                     | 266661     | 0           | 0           | 0           | 0              |
| *       | Integrated DUART        | 1837       | 0           | 0           | 375         | 375            |
| *       | Clock                   | 1          | 0           | 0           | 0           | 0              |
| *       | Integrated LAN 0        | 8749       | 0           | 0           | 275         | 275            |
| *       | Integrated LAN 1        | 8749       | 0           | 0           | 275         | 275            |
| *       | VME TKR Board 0         | 6754       | 0           | 0           | 234         | 234            |
| *       | Integrated SCSI 0       | 5549       | 0           | 0           | 294857      | 1590           |
| *       | VME VTC Board 0         | 9848       | 0           | 0           | 0           | 0              |
| *       | VME VSC/3i Controller 0 | 9845       | 0           | 0           | 0           | 0              |
| *       | VME VFC Controller 0    | 29406      | 0           | 0           | 0           | 0              |

Press New Line to return to Main Menu

**Example: No VMEbus**

## Final Status Report

```
Revision: xx.xx Total Errors: 0000
Elapsed Time: 15:00:01 Current Time: 10:26:34
```

| TEST ID | SUBSYSTEM DESCRIPTION | PASS COUNT | SOFT ERRORS | HARD ERRORS | KBYTES READ | KBYTES WRITTEN |
|---------|-----------------------|------------|-------------|-------------|-------------|----------------|
| *       | Shared Memory         | 62274      | 0           | 0           |             |                |
| *       | Memory                | 1484       | 0           | 0           | 113155      | 100651         |
| *       | CPU                   | 4977       | 0           | 0           | 0           | 0              |
| *       | Integrated DUART 0    | 1540       | 0           | 0           | 409         | 409            |
| *       | Integrated DUART 1    | 762        | 0           | 0           | 197         | 197            |
| *       | Clock                 | 1          | 0           | 0           | 0           | 0              |
| *       | Integrated LAN 0      | 6971       | 0           | 0           | 163         | 163            |
| *       | Integrated SCSI       | 4370       | 0           | 0           | 30934       | 1408           |

Press New Line to return to the Main Menu

If you see errors in the SOFT ERRORS column of the Final Status Report, you should consider further testing on the indicated component. Run the Acceptance test again or, if applicable, use one of the diagnostics tools described later in this chapter. If you receive one soft error for each pass of a specific test, notify Data General. Make a note of unrepeated soft errors for future reference, and plan to run the Acceptance test periodically to monitor soft errors; they could indicate a developing problem.

If you can continue testing without receiving a *hard* error or fault code and message, continue to use your system with confidence.

6. Press New Line to return to the Main Menu.

---

## Using the Stand-alone Tools

After starting the stand-alone diagnostics (as described earlier in this chapter), display the Tools Menu from the Main Menu.

System Diagnostics

Revision: xx.xx

Data General Corporation

Proprietary Use Only

Main Menu

1. Run Acceptance test
- 2. View Tools Menu**
3. View MI Callout Menu
4. Display help screen
5. Exit to SCM

Enter choice [1]:

To display the Tools menu, type **2** and press New Line from the Main Menu to select item 2, "View Tools menu."

The Tools Menu appears, as follows:

Tools Menu

1. Format diskettes
2. Run tape adjustment utility
3. View Graphics Tools menu
4. Test network connection (TDR)
5. Run keyboard test
6. Run mouse test
7. View Terminal Test menu
8. Display help screen
9. Return to Main Menu

Enter choice [9]:

**IMPORTANT:** Depending upon your hardware configuration, you may have some combination of the items shown in the menu above. Tools Menu options and sub-menus reflect your AViiON hardware configuration. If your computer has a graphics controller, your Tools menu includes the Graphic Tools sub-menu and utilities to test the keyboard and mouse. If your computer has a VME terminal controller, your Tools Menu includes the Terminal Test sub-menu.

Refer to the subsections that follow for instructions on running the utilities available from the Tools menu.

## Maintaining Storage Media

These subsections describe how you can hardware format a diskette and adjust the tension between reels of quarter-inch cartridge (QIC) tapes. You access both utilities from the Tools menu.

This section describes the first two items on the Tools Menu, "Format diskettes" and "Run tape adjustment utility." Select the last item on the menu or press the ESC key to return to the stand-alone diagnostics Main Menu.

### Formatting Diskettes

If your system includes one or more diskette drives, you need to use diskettes that contain the proper hardware formatting for your drives. This utility hardware formats diskettes for use with the diskette drives connected to an AViON computer. You may need to format new diskettes, diskettes you have used with another computer, or used diskettes whose data integrity you suspect.

**CAUTION:** *Remember to save any data you do not want to lose on a separate medium before formatting a diskette you have already used.*

To hardware format a diskette, follow the steps below. If you have more than one diskette drive, you can simultaneously format a diskette in each drive.

1. Insert a write-enabled diskette into the drive and close the drive latch. A diskette is write-enabled when the write-enable notch is *uncovered*.

Refer to documentation that came with the drive for information about inserting and caring for diskette media.

2. Type 1 and press New Line to select item 1, "Format diskettes" from the Tools Menu.

Your system displays the manufacturer's model name or number, the drive size (5.25 or 3.5-inch), the logical unit number (LUN) of the drive, and the unit number (SCSI ID) of the drive or of the SA450/SCSI converter board for each diskette drive it finds. Drives are listed by the controller that manages the SCSI converter. The utility prompts you to select or bypass each drive for formatting.

Your screen appears as follows:

```
Target Selection:
```

```

```

```
Enter S to Select, D to Delete, New Line to retain
current value
```

```
Integrated SCSI
```

```
TEAC 5.25 floppy (LUN 0) (Unit 3) [Deleted]:
```

```
Press New Line to Start - Press Q to Exit
```



**IMPORTANT:** The SCSI controller, drive size, manufacturer, and unit numbers of diskette drives depend upon your hardware configuration. Screen displays in this chapter provide examples only.

3. To select a drive that contains a diskette to format, enter **s** after the drive listing. A drive is bypassed (deleted) by default. The message Selected appears to the right of the [Deleted]: prompt.

To skip a drive that doesn't contain a diskette to format, enter **d** after the prompt, or simply press New Line to accept the default. The message Deleted appears to the right of the prompt.

The following screen example illustrates one drive selected and one deleted as a target for formatting. The selected drive is the first diskette drive (LUN 0) on a SCSI converter board set to SCSI ID 2, managed by a workstation's integrated SCSI controller.

Target Selection:

-----

Enter S to Select, D to Delete, New Line to retain  
current value

Integrated SCSI

TEAC 5.25 floppy (LUN 0) (Unit 3) [Deleted]: **s** Selected  
TEAC 5.25 floppy (LUN 1) (Unit 3) [Deleted]: Deleted

Press New Line to Start - Press Q to Exit

4. After you have selected or deleted each target drive, press New Line to start to format the diskettes in the selected drives. The utility then displays the following message:

Initialization for selected diskette(s). Please wait.

After approximately 30 seconds, the utility lists the first selected drive and prompts you to select the format density, as follows:

Input session Integrated SCSI Unit 3:TEAC 5.25 (LUN 0)

Available densities for the 5-1/4 inch drive:

|        |                 |
|--------|-----------------|
| HIGH   | - 1.2 Megabytes |
| LOW    | - 360 Kilobytes |
| MEDIUM | - 720 Kilobytes |

Select density for format (HIGH, LOW, MEDIUM) [HIGH]

The utility sizes the drive each time it prompts you for format density. The default density is the last format chosen for that drive.

**IMPORTANT:** If a selected drive does not contain a write-enabled diskette or has an open drive latch, you see the following screen warning.

```
**** Media Maintenance Initialization Error ****

TEAC 5.25 floppy (LUN 0) (Unit 3) on the Integrated SCSI
This diskette not READY.
Cannot execute Media Maintenance for this diskette.

```

Press New Line to Proceed

**Press New Line to return to the Tools Menu. Repeat steps 1-4 after fixing the problem.**

5. Press New Line to select the default diskette density, or select a different density and then press New Line. The utility prompts you to verify that you want to format this diskette before continuing further, as shown in the following screen display. Type y and press New Line to continue.

Available densities for the 5-1/4 inch drive:

```
HIGH - 1.2 Megabytes
LOW - 360 Kilobytes
MEDIUM - 720 Kilobytes
```

Select density for format (HIGH, LOW, MEDIUM) [LOW]

Do you still want to format this disk (NO, YES) [NO] y

6. If you selected other target drives, repeat steps 4 and 5 to choose the format density and verify formatting for each diskette.

After you select the density for the last diskette drive and verify that you want to continue, you see the message  
Formatting.....until each diskette is completely formatted.

Each diskette takes approximately a minute to hardware format. Your screen appears as follows once hardware formatting is complete:

```
Formatting..... Format complete
Press New Line to Return to Previous Menu
```

7. Press New Line to return to the Tools Menu. From the Tools Menu, you can format additional diskettes, run other diagnostic tools, or return to the system diagnostics Main Menu. From the Main Menu, you can re-enter the SCM and then boot your operating system. If you choose to format additional diskettes, repeat the steps in this section.

## Adjusting Cartridge Tape Tension

To establish proper tension between the reels of a new QIC tape before writing to it, or to restore proper tension before writing to a used cartridge tape, follow the steps below.

1. Insert the cartridge tape into its drive and close the drive latch. Refer to the illustrations in Chapter 1 of how to insert a QIC tape.
2. Type **2** and press New Line to select item 2, "Run tape adjustment utility" from the Tools Menu.

Your system displays the manufacturer's tape drive model name or number, the drive size (150 megabyte), and the unit number (SCSI ID) of the drive for each tape drive it finds. Drives are listed by the controller that manages the drive. The utility prompts you to select or bypass each drive for formatting by typing **s** or **d**. Your screen appears as follows:

```
Target Selection:

Enter S to Select, D to Delete, New Line to retain
current value

Integrated SCSI

 ARCHIVE Viper 150 Tape (Unit 4) [Deleted]:

 Press New Line to Start - Press Q to Exit
```

**IMPORTANT:** The SCSI controller, drive size, manufacturer, and unit numbers of cartridge tape drives depend on your hardware configuration. Screen displays in this chapter provide examples only.

3. Type **s** to select the tape drive displayed. Type **d** or press New Line to accept the default response, deleting that drive as a target for this utility.

```
Target Selection:

Enter S to Select, D to Delete, New Line to retain
current value

Integrated SCSI

 ARCHIVE Viper 150 Tape (Unit 4) [Deleted]: d) Deleted
 ARCHIVE Viper 150 Tape (Unit 5) [Deleted]: s) Selected

 Press New Line to Start - Press Q to Exit
```

The system continues to display each drive found until you have selected or bypassed each tape drive in your system. You can select as many drives as you have configured in your system.

4. Press New Line after the last drive listed to begin tape tension adjustment to any cartridge tape in the drive(s) you selected.

In the example above, the tape in the ARCHIVE Viper 150 megabyte drive unit 5 will be adjusted; the tape in drive unit 4 will not.

Press New Line to Start - Press Q to Exit

5. Tape tension adjustment takes approximately 4 minutes. While the utility is running, the drive light is illuminated and you can hear the tape reels spin in the selected drive(s). The utility displays the following prompt:

Tape Adjustment in Progress - Please wait

As each drive completes, you see the following prompt:

Adjustment of ARCHIVE Viper Tape (Unit 5) Completed

When finished adjusting tension on the last tape, the utility prompts you to return to the Tools menu.

Press New Line to return to Tools Menu

Press New Line to return to the Tools Menu. From the Tools Menu, you can use the additional diagnostic utilities, or return to the system diagnostics Main Menu. From the Main Menu, you can enter the SCM and then boot your operating system.

## Testing LAN Connections

This section describes how you can test your local area network (LAN) connections for faults or shorts in the cabling. Follow the steps below to run a Time Domain Reflectometry (TDR) test to detect problems with the controllers and cables connected to each of your system's LANs.

**IMPORTANT:** The TDR test checks data traveling through the transceiver cabling; it does not test the LAN transceiver itself.

1. From the stand-alone diagnostics Tools Menu, select item 3, "Test network connection (TDR)" (3 ↓) and press New Line.:
2. You see a "Target Selection" screen. The system displays each LAN controller it finds in your system and prompts you to select or bypass them one by one as a target for testing. Your screen display instructs you to select or bypass controllers by typing **s** to select or **d** to delete a target LAN board.

To test the cable connections for a particular LAN board, type **s** when the cursor is positioned at the entry for that board.

To exclude a LAN board from testing, type **d** after the board listing or press New Line when the cursor is positioned at that entry to accept the default response. That board will be deleted as a target for the utility.

The following example shows a server system with two VLC (VME Ethernet LAN) controllers. The second LAN board is selected for testing:

Target Selection:

-----

Enter S to Select, D to Delete, New Line to retain current value

Integrated LAN

|                                       |          |
|---------------------------------------|----------|
| VME LAN Board 0 [Deleted]:            | Deleted  |
| VME LAN Board 1 [Deleted]: <b>s ↓</b> | Selected |

Press New Line to Start - Press Q to Exit

3. After selecting the LAN board you want to test, press New Line to start the utility. You see the following prompt:

Number of Passes to Run TDR test (1-256) [1]:

4. Select a number between 1 and 256, indicating how many times you want to run the test. The amount of time required for each pass depends on your network configuration; you should probably select a low number the first time you run this test on each LAN board.

To start by running the test twice, type **2** and press New Line. The utility displays a message after each pass of the test. The message appears as follows if the test finds no hardware faults in your LAN connection:

```
Beginning Execution of TDR Test
```

```
TDR Pass Number: 001 TDR Test Passed with NO ERROR
TDR Pass Number: 002 TDR Test Passed with NO ERROR
```

If the test finds a fault, the utility reports an approximation of the distance (in meters) from the transceiver to the cable problem. You see two distances reported. Use the first value ("Ethernet cable") to locate the fault if your LAN uses thick (Teflon®) cabling; use the second value ("Cheapernet cable") if your LAN uses thin (PVC) cabling. A thick cable is approximately 1.5 centimeters (.6 inches) in diameter; a thin cable is approximately .75 centimeters (.3 inches) in diameter. Refer to your LAN hardware installation documentation (listed in the Preface) for additional information.

The following shows the same example, this time with a detected error:

```
Number of Passes to Run TDR test (1-256) [1]: 2
```

```
Beginning Execution of TDR Test
```

```
TDR Pass Number: 001 TDR Failure - TDR Value: 7
Approximate distance to fault using Ethernet cable: 70 meters
Approximate distance to fault using Cheapernet cable: 59 m
```

```
TDR Pass Number: 002 TDR Failure - TDR Value: 7
Approximate distance to fault using Ethernet cable: 70 meters
Approximate distance to fault using Cheapernet cable: 59 m
```

You may be able to correct the fault by examining your LAN cabling and securing cable connections and straightening out twists or crimps in the cable line. You may need to replace a cable. Contact Data General as described in the Preface if you discover faults in your cabling and need assistance.

5. At the end of the test, the system prompts you as follows:

```
Press New Line to return to the previous menu.
```

Press New Line to display the Tools Menu. To test the hardware connections on another LAN, repeat the steps in this chapter. From the Tools Menu, you can use the additional diagnostic utilities, or return to the system diagnostics Main Menu. From the Main Menu, you can enter the SCM and then boot your operating system.

## Servers: Testing and Identifying Terminal Ports

This section describes how to test the asynchronous connections (*ports*) supplied by VAC/16 asynchronous controllers and VDA/128 or VDA/255 host adapters. The utilities described in this chapter are accessible only if you have an AViiON model with VMEbus support, and one or more of these controllers installed:

- ▶ VME Asynchronous Controller (VAC/16). Each VAC/16 board supports a maximum of 16 asynchronous connections; external devices such as terminals, serial printers, or modems connect to ports on attached 8-line junction boxes (*J-boxes*), mounted near your computer unit. System diagnostic sizing and Acceptance Test messages identify this controller as a *16-line Async board*.
  
- ▶ VME Distributed Host Adapter (VDA/128 or VDA/255). Each host adapter supports a maximum of 128 or 255 asynchronous connections; external devices such as terminals, printers, or modems connect to ports on attached VDC/16 and VDC/8P cluster controllers (*cluster boxes* or *nodes*), mounted up to 1000 feet from your computer unit. System diagnostic sizing and Acceptance Test messages identify these controllers as a *128-line VME Host Adapter* or a *255-line VME Host Adapter*.
  - Each VDC/16 cluster controller provides sixteen RS-232-C serial ports. You can link up to eight VDC/16 cluster boxes to a VDA/128 adapter; you can link up sixteen VDC/16 cluster boxes to a VDA/255 adapter. System diagnostic sizing messages identify the VDC/16 as model *HPS-7088*.
  - Each VDC/8P cluster controller provides eight asynchronous ports and one Centronics parallel printer port. You can link up to sixteen VDC/8P cluster boxes to a VDA/128 adapter; you can link up thirty-two VDC/8P cluster boxes to a VDA/255 adapter. System diagnostic sizing messages identify the VDC/8P as model *HPS-7082*.

Refer to the manual *Setting Up and Installing VMEbus Options in AViiON® Systems* for information about installing VME controllers and the peripherals they manage.

If you suspect a problem with one or more of the terminal or printer ports managed by your VME terminal controllers, you can use the utilities accessible from the Terminal Test Menu to verify that the lines are transmitting and receiving data properly. You can simultaneously test approximately 170 ports using these utilities. Be sure to read the “Using the Terminal Test Menu” and “Identifying and Selecting Ports” sections below before using the utilities for the first time.

## Using the Terminal Test Menu

Display the Terminal Test Menu by the “View Terminal Test menu,” from the Tools Menu.

**IMPORTANT:** Refer to the beginning of this chapter for information about starting the system diagnostics and displaying the Tools Menu.

The system displays the Terminal Test Menu, as follows:

Terminal Test Menu

1. Start scrolling characters set test
2. Start lines of characters test
3. Start keyboard echo test
4. Start port ID message test
5. Auto port identification
6. Terminate a test
7. Show executing tests
8. Display help screen
9. Return to Tools menu

Enter choice [9]:

Select the test you want to run by entering the menu item number and pressing New Line at the Enter choice prompt. Select item 8, “Display help screen,” to view a brief on-line description of each test on the Terminal Test Menu.

For the Terminal Test utilities to work properly, terminal characteristics (such as baud rate, parity, and data bit settings) for tested terminals must match those of your system console. The Terminal Test utilities expect terminals to be set to ANSI mode, 9600 baud. Your terminals must also have the auto-wrap function enabled. You can view the required terminal characteristics by selecting item 8, “Display help screen,” from the Terminal Test Menu.

You can start multiple tests on different sets of terminal lines at the same time, but only one test executes at a time on a particular terminal line. When you start a test on a series of terminal lines, the utility terminates any test currently running on those lines. You see the following message before the new test starts if there are other terminal utilities running:

Terminating currently executing tests, please wait.

If you start a test on more than approximately 170 terminal lines, or if you start so many simultaneous tests that the utility cannot keep track of all the test processes, the test utility displays the following error message:



Out of process ID's. Press New Line to Proceed

To continue testing additional lines, you need to select item 6 (described later in this chapter) on the Terminal Test Menu to stop some of the currently executing tests.

When a test completes, press New Line to return to the Terminal Test Menu. From the Terminal Test Menu, press New Line to exit from the terminal utilities and display the Tools Menu. From the Tools menu, you can use the additional diagnostic utilities, or return to the system diagnostics Main Menu. From the Main Menu, you can enter the SCM and then boot your operating system, as described in Chapter 2.

## Identifying and Selecting Ports

Each time you start or terminate one of the Terminal Test utilities, the utility prompts you for the following:

- ▶ The *board number* of the controller that manages the ports you are testing.
- ▶ The unique *port number* or channel number of each tested device.
- ▶ The network *cluster address* of the cluster controller box (if you are testing ports supplied by a host adapter).

You see each controller's board number and cluster address (displayed as NET ID) in sizing messages when the system diagnostics first initializes the boards at boot time. Refer to Chapter 2 for information about these sizing messages. The hexadecimal cluster addresses is determined on the cluster box. Refer to the manual *HPS Downloadable Cluster Controller Technical Manual*, listed in the Preface, for information about the cluster box addresses.

### Selecting Ports for Testing

Whenever you start a utility (by selecting item 1 through 6 on the Terminal Test Menu), the first prompt asks you for the number of the controller that manages the lines you want to test. On our example system with two terminal controllers (the *16-line Asynch Board 0* and *128-line Host Adapter 1*), the prompt appears as follows:

```
Board number (0,1,[ALL])?
```

Respond by entering the 0 to select the VAC/16 board only; enter 1 to select the VDC/128. To select both boards, press New Line to choose all boards.

If you selected the board number of a VDA/128 or VDA/255 host adapter, the utility prompts you next for the cluster controller's network address, then for the port number(s) of the line(s) you want to test:

```
Cluster address (xx, yy, zz, [ALL])? ↵
```

```
Port number (1-8, [ALL])?
```

Respond to the first prompt by entering the cluster address of the cluster box whose ports you want to test, or press New Line to choose all cluster boxes. Then, choose the port number(s) for each selected cluster box.

**IMPORTANT:** If you have an 8-line cluster box with a parallel printer port (VDC/8P), the parallel port number is 8. Select ALL or port number 8 to test the printer port. Make sure the printer is on line and contains paper. If you don't have a parallel printer port on your cluster box, the prompt appears as follows: Port number (1-7, [ALL])?

If you selected a VAC/16 asynchronous controller, the utility prompts you for the port number(s) only:

```
Port number (1-16, [ALL])?
```

Respond by entering the port number(s) of the lines you want to test.

Before starting any tests on the ports you selected, the utility runs a 30-second board self-test on each controller that has not been previously selected during the current test session. If you exit from the Terminal Test Menu and then return to continue testing, the utility repeats the self-test process. You'll see a message like the following:

```
Running selftest on VME Host Adapter 0
please wait.....
```

## Identifying Ports

If you don't know how to respond to the prompts to select ports for testing, you can use items 4 or 5 on the Terminal Test Menu as described below. Item 4, "Start port ID message," tells you which terminals are managed by a particular board. Item 5, "Auto port identification" gives you the board number, cluster address, and port number of any connected terminal.

## Using the Port ID Message Test

While in the Terminal Test Menu, type 4 and press New Line at your system console to select item 4, "Start Port ID Message."

You select the board(s) with ports you want to identify. The utility then identifies all active ports it finds for the board(s) you selected and displays the appropriate board number, cluster address (if applicable), and port number on each remote terminal screen (or prints the information on paper if it is a printer port). Since the port identification does not appear on your system console screen, you will need help from someone at the remote device or must view each remote terminal display yourself to record the information.

### Using the Auto Port Identification Test

While in the Terminal Test Menu, type **5** and press New Line to select item 5, "Auto port identification."

The automatic port identification test responds to keystrokes at any connected terminal to identify the port. When you press a key at any remote terminal, both the terminal and system console screen display a message identifying the board and port number of the remote terminal. If the terminal is connected via a cluster controller, the display also includes the cluster controller address.

**IMPORTANT:** Selecting item 5, "Auto port identification," stops all current terminal test processes.

After you select item 5, the utility displays the following message on the system console screen:

```
Strike any key on a remote terminal and that port
will be identified. Press ESC on this system
console to terminate the test....
```

Press any key at each terminal you want to test. The board number, cluster address (only if host adapter), and port number appear both on the system console and on the remote terminal screen, as seen in the following examples:

```
VME Host adapter 0, Cluster address: 34, port: 12
or
16-line VME Async Controller 1, port: 8
```

Use this test if you suspect trouble with particular ports; it not only identifies the correct board, cluster address, and port number to use when selecting other tests to run on that port, but is itself a test of that port's ability to transmit data from the remote terminal to the computer unit. Refer to the next section "Testing Data Input" to further test the validity of keyboard input.

## Testing Data Output

The first two tests on the Terminal Test menu (items 1 and 2) send data to selected ports and display an expected pattern on the remote terminal.

**IMPORTANT:** If the remote terminals are located a significant distance from the system console, it may be useful to have a second person help with the testing.

Whenever you select a Terminal Test utility, you first must specify the board and port numbers of the devices you want to test, as described in the “Selecting and Identifying ports” section earlier in this chapter.

If your remote terminal display does not appear as described in this section, make sure that its operating characteristics (such as baud rate, parity, and data bit settings) conform to those of your system console. To view the correct settings, select item 6, “Display help screen,” from the Terminal Test Menu. Also make sure the remote terminal is in ANSI mode, has auto-wrap enabled, and passes its self-test. If there is still a problem with the terminal display, contact Data General as described in the Preface.

### **Using the Scrolling Characters Set Test**

The “scrolling characters set” test verifies character output to selected ports by displaying a set of ASCII characters scrolling across the screen of selected remote terminals.

While in the Terminal Test Menu, type 1 and press New Line to select item 1, “Start scrolling character set test.” Select the ports you want to test as described in the “Selecting and Identifying Ports” section of this chapter. Your system console then displays the message `Press New Line to Proceed` while complete sets of ASCII characters appear, wrapping characters one by one from the *left to the right* of the screen. Each tested remote terminal screen appears as follows:

```

ABCDEFGHIJKLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?A
BCDEFGHIJKLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?AB
CDEFGHIJKLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABC
DEFGHIJKLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCD
EFGHIJKLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDE
FGHIJKLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEF
GHIJKLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFG
HIJKLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGH
IJKLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHI
JKLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJ
KLMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJK
LMNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJKL
MNOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJKLM
NOPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJKLMN
OPQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJKLMNO
PQRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJKLMNQP
QRSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJKLMNQPQ
RSTUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJKLMNQPQR
STUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJKLMNQPQRS
TUVWXYZ[]^_~abcdefghijklmnopqrstuvwxyz/0123456789:?ABCDEFGHIJKLMNQPQRST

```

Press New Line at the system console to return to the Terminal Test Menu. This test continues indefinitely, displaying the scrolling ASCII characters on remote terminals, until you run another test to that port, or terminate the test by selecting item 6 from the Terminal Test Menu from your system console. You can consider the test successful and complete when the ASCII display covers the screen of each selected remote terminal once.

### Using the Lines of Characters Test

The “lines of characters” test verifies line output to selected ports by displaying lines of ASCII characters across the screen of selected remote terminals.

While in the Terminal Test Menu, type **2** and press New Line to select item 2, “Start lines of character test.” Select the ports you want to test as described in the “Selecting and Identifying Ports” section, earlier in this chapter. Your system console then displays the message Press New Line to Proceed while one complete set of ASCII characters appears on the remote terminal, each character scrolling line by line from the *top to the bottom* of the screen.

Each tested terminal screen appears as follows:



Press New Line at the system console to return to the Terminal Test Menu. This test continues indefinitely, displaying the scrolling ASCII characters on remote terminals, until you run another test to that port, or terminate the test by selecting item 6 from the Terminal Test Menu from your system console. You can consider the test successful and complete when the ASCII display covers the screen of each selected remote terminal once.

## Testing Data Input

Items 3 and 5 on the Terminal Test Menu receive data from remote terminal lines and display an expected pattern or message. Refer to the “Selecting and Identifying Ports” section earlier in this chapter for a description of item 5, “Auto port identification.”

**IMPORTANT:** If the remote terminals are located a significant distance from the system console, it may be useful to have a second person help with the testing.

Whenever you select a Terminal Test utility, you first must specify the board and port numbers of the devices you want to test, as described in the “Identifying ports” section earlier in this chapter.

If your remote terminal display does not appear as described in this section, make sure that its operating characteristics (such as baud rate, parity, and data bit settings) conform to those of your system console. To view the correct settings, select item 6, “Display help screen,” from the Terminal Test Menu. Also make sure the remote terminal is in ANSI mode, has auto-wrap enabled, and passes its self-test. If there is still a problem with the terminal display, contact Data General as described in the Preface.



In order to test additional ports, you first must terminate some currently executing tests. Once you start tests on multiple ports, the only way to determine where tests are executing is to select item 7, "Show executing tests."

### **Stopping Tests**

Use item 6, "Terminate a test," on the Terminal Test Menu to stop one or more test. To determine which test is currently executing on a particular port or group of ports, first select item 7, "Show executing tests" for a display of all tests that are currently executing.

If you know the board number, port numbers, and (if applicable) cluster address of the ports running the tests you want to stop, type 6 and press New Line to select item 6, "Terminate a test." Select the ports, as described in the "Selecting and Identifying ports" section of this chapter. Your system console then displays the message Press New Line to Proceed while the utility ends whatever test is currently running on the port(s) you specified. Press New Line to return to the Terminal Test menu.

### **Viewing Current Tests**

While in the Terminal Test Menu, type 7 and press New Line to select item 7, "Show executing tests."

Your system console screen displays each board that the utility has identified on your system and its associated ports; it specifies which terminal test (if any) is currently running on each port.

In the example on the following page, the "port ID message test" is running on all eight ports of the cluster controller at address 01, managed by the host adapter identified as board 0. In addition, the "scrolling characters set test" is running on the first 8 lines of the 16-line asynchronous controller identified as board 1. A period character (.) indicates there are no tests running on that port.

Once you are finished viewing the status of currently executing tests, press New Line to return to the Terminal Test Menu. You can display an updated listing of currently executing tests at any time during terminal testing. However, once you exit from the Terminal Test Menu, all testing stops automatically.



```

S - scrolling character set test; L - lines of characters test;
I - port ID message test; E - keyboard echo test; . - none

 VME Host adapter 0

[CC] PORT Currently Executing Tests.....

[01] 00-07 I I I I I I I I
.
[08] 00-07
"" 08-15
[34] 00-07
"" 08-15

 16-line VME Async Controller 1

 PORT Currently Executing Tests.....

00-07 S S S S S S S S
08-15

 Press New Line to Proceed

```

**Screen Display****Indicates**

|                        |                                                                                                                                                                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S                      | Scrolling character set test is running on that port.                                                                                                                                                                                       |
| L                      | Lines of character test is running on that port.                                                                                                                                                                                            |
| I                      | Port ID message test is running on that port.                                                                                                                                                                                               |
| E                      | Keyboard echo test is running on that port.                                                                                                                                                                                                 |
| [CC]                   | Cluster controller column head.                                                                                                                                                                                                             |
| PORT                   | Port (terminal line number) column head.                                                                                                                                                                                                    |
| [xx] (in CC column)    | Cluster address.                                                                                                                                                                                                                            |
| yy-zz (in PORT column) | Terminal line numbers (ports) whose status is shown in the same row of the display. Each letter shows the current status of ports numbered between yy and zz, where the rightmost letter in the row reports the current status of port zz). |
| .(period)              | No test is running on that port.                                                                                                                                                                                                            |

## Workstations: Testing Graphics Hardware

This section describes how to test the graphics monitor, keyboard, and mouse device connected to an AViiON workstation.

If you suspect a problem with your graphics display, you can use system diagnostic utilities to test the graphics monitor, keyboard, or mouse components. You run the Keyboard test and Mouse test directly from the Tools menu. You display a Graphics Tools menu from the Tools menu which includes tests for your monochrome or color graphics monitor and the graphics subsystem.

You access the Graphics Tools menu, the Keyboard test, and the Mouse test from the Tools menu.

Display the Graphics Tools Menu by the "View Graphics Tools menu," from the Tools Menu.

**IMPORTANT:** Refer to the beginning of this chapter for information about starting the system diagnostics and displaying the Tools Menu.

### Using the Graphics Tools Menu

To run tests on your graphics monitor, do the following:

1. While in the Tools Menu, type **3** and press New Line to select item 3, "View Graphics Tools Menu."

The system diagnostics displays the menu, as follows:

Graphics Tools Menu

1. Test graphic subsystem
2. Display video adjustment BRIGHT pattern
3. Display video adjustment CONTRAST pattern
4. Display video adjustment PARALLEL pattern
5. Display video adjustment REGULATE pattern
6. Display video adjustment FLOOD pattern
7. Display CIRCLES pattern
8. Display help screen
9. Return to Tools Menu

Enter option: [9]

2. Select the test or pattern to run by entering the corresponding item number. Complete the steps in the appropriate section below for the item you select. Select item 8 to view a brief on-line description of each menu item.
3. When a test completes, select another test or pattern, or type **9** and press New Line to return to the Tools menu.

## Testing the Graphic Subsystem

Select item 1 to run a 5-minute test on the graphics hardware (bit-block transfers, graphics logic, logical operations, video timing, graphics registers, programmed transfers to graphics memory, cursor operation, and color). After you select item 1, "Test graphic subsystem," you see the following screen message:

```
This series of diagnostic tests last several
minutes. Your screen will go blank for brief
periods during testing. After each subtest a
message is displayed indicating the subtest
status.
```

Press New Line to begin.

Press New Line to start testing. Several graphics hardware components undergo subtests. You'll see color and screen changes with varied patterns throughout testing. If a subtest encounters an error, all testing halts and you see an error message with a fault code on your screen. If this happens, write down the screen message and contact Data General as described in the Preface.

When all testing completes without error, you see the following screen message:

```
Graphics subsystem diagnostic testing complete.
Press New Line to return to the Graphics Tools
Menu.
```

Press New Line to return to the Tools Menu, where you can test your monitor's display using one or more of the video adjustment patterns.

## Adjusting Video Brightness

Select item 2 to use the BRIGHT pattern to test for proper screen intensity on your graphics monitor. After you select item 2, "Display video adjustment BRIGHT pattern," you see the following instructions in a screen message. You cannot view the screen message once the test pattern appears.

If you have a monochrome monitor, your screen message appears as follows:

```
BRIGHT Pattern
```

```
Press New Line to display the test pattern.
Then, toggle the pattern shading from foreground
to background by pressing the Space Bar.
```

```
Press New Line again to return to the Graphics
Tools Menu
```

If you have a color monitor, your screen message appears as follows:

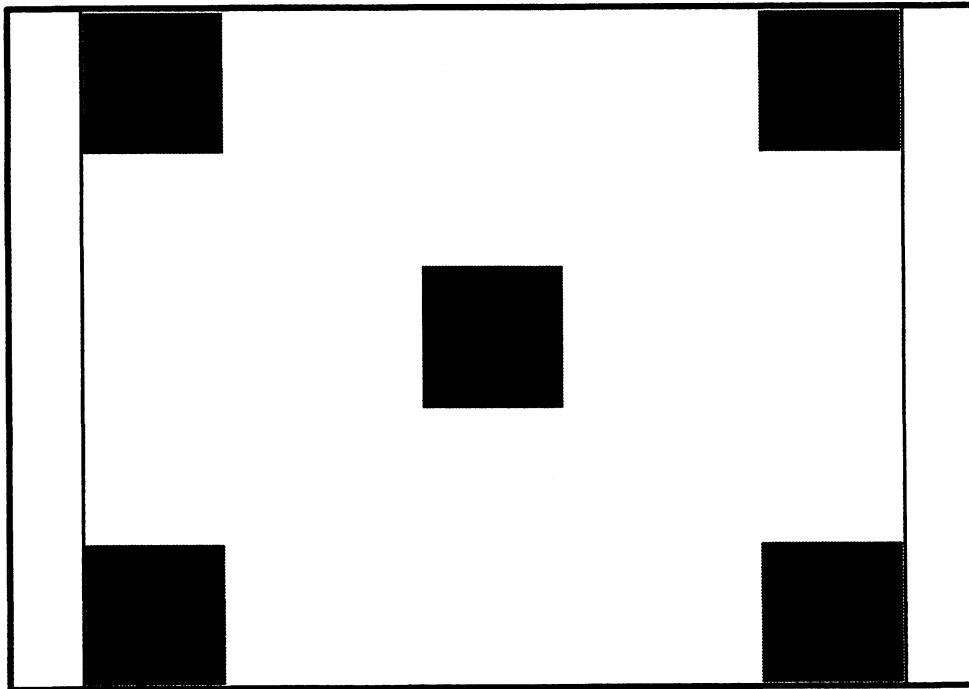
BRIGHT Pattern

R=Red  
G=Green  
C=Cyan  
B=Blue  
Y=Yellow  
W=White

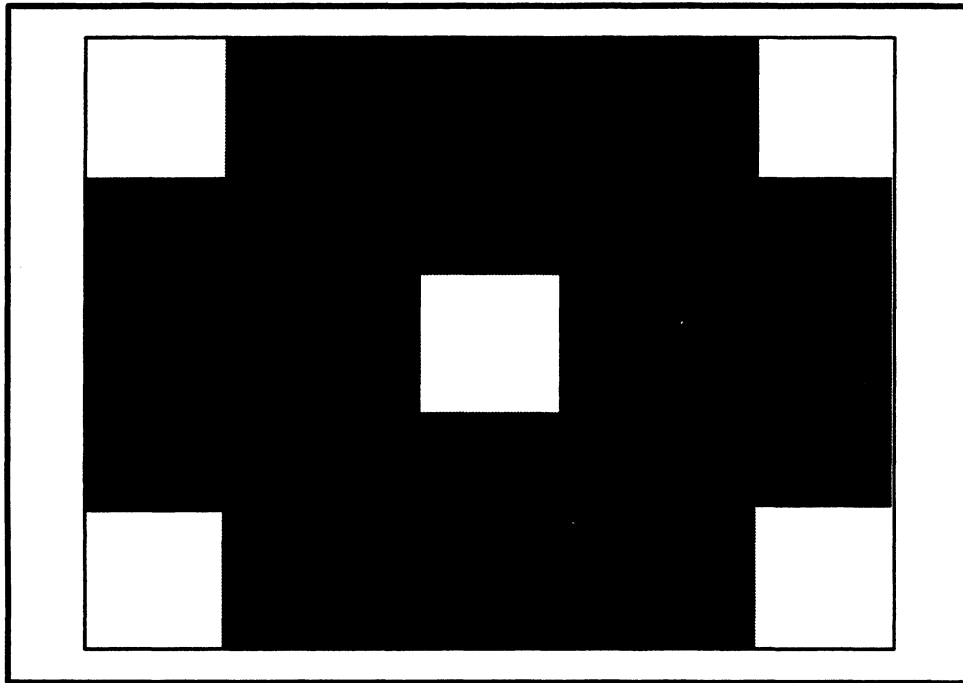
Press New Line to display the test pattern. Then, toggle the pattern shading from foreground to background by pressing the Space Bar. To change the color of shading, press keys as follows:

Press New Line again to return to the Graphics Tools Menu.

After you press New Line, you see the BRIGHT pattern displayed on your screen, as follows:



Press the space bar to switch the shading from the center and corner boxes to the spaces between them, as seen below. Press the space bar again to switch the shading back to the first pattern.



With either BRIGHT pattern displayed, press the following lowercase keys to change the pattern color (if you have a color monitor):

| <b>This Key Entry</b> | <b>Change Pattern to this Color</b> |
|-----------------------|-------------------------------------|
| <b>r</b>              | Red                                 |
| <b>g</b>              | Green                               |
| <b>c</b>              | Cyan blue                           |
| <b>b</b>              | Bright blue                         |
| <b>y</b>              | Yellow                              |
| <b>w</b>              | White (the default)                 |

All colors should appear distinct and uniform on your screen.

Rotate the brightness control left and right (located beneath the edge of the monitor screen, as shown in Figure 4-1) to adjust the screen display so that shading appears with the proper intensity in both patterns.

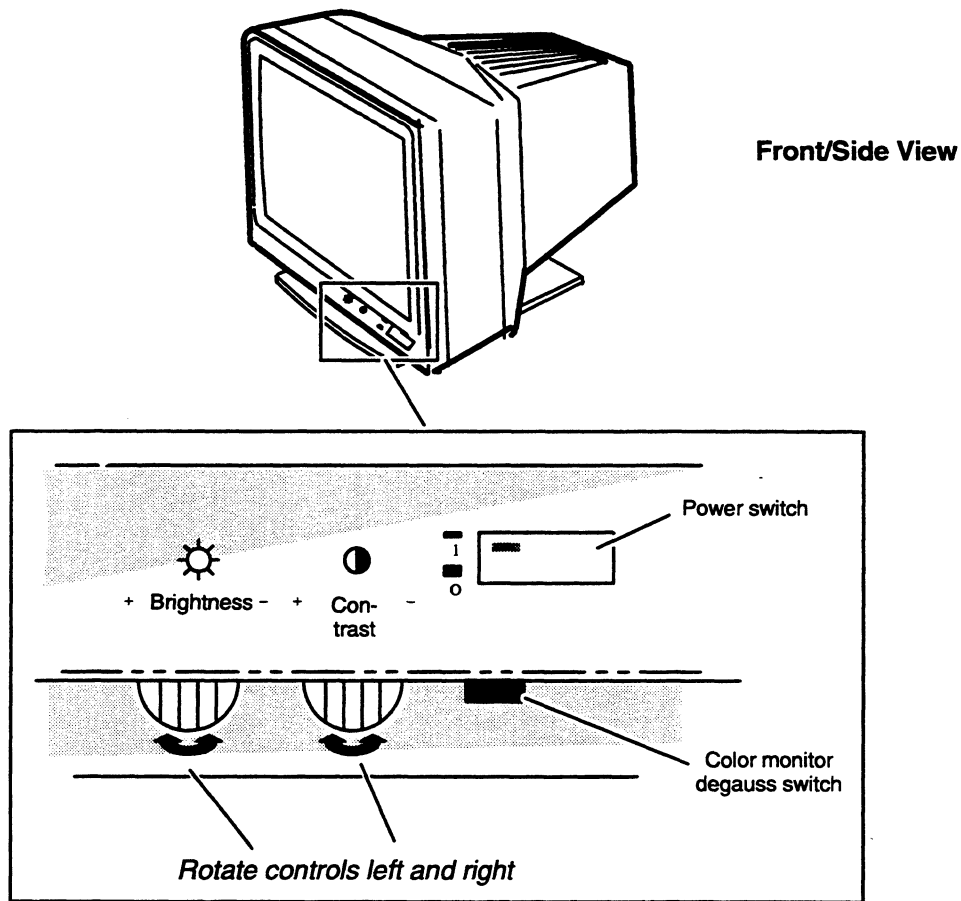


Figure 5-1 Adjusting Monitor Brightness and Contrast

Press New Line to return to the Graphics Tools menu once you have adjusted the screen display brightness to your satisfaction.

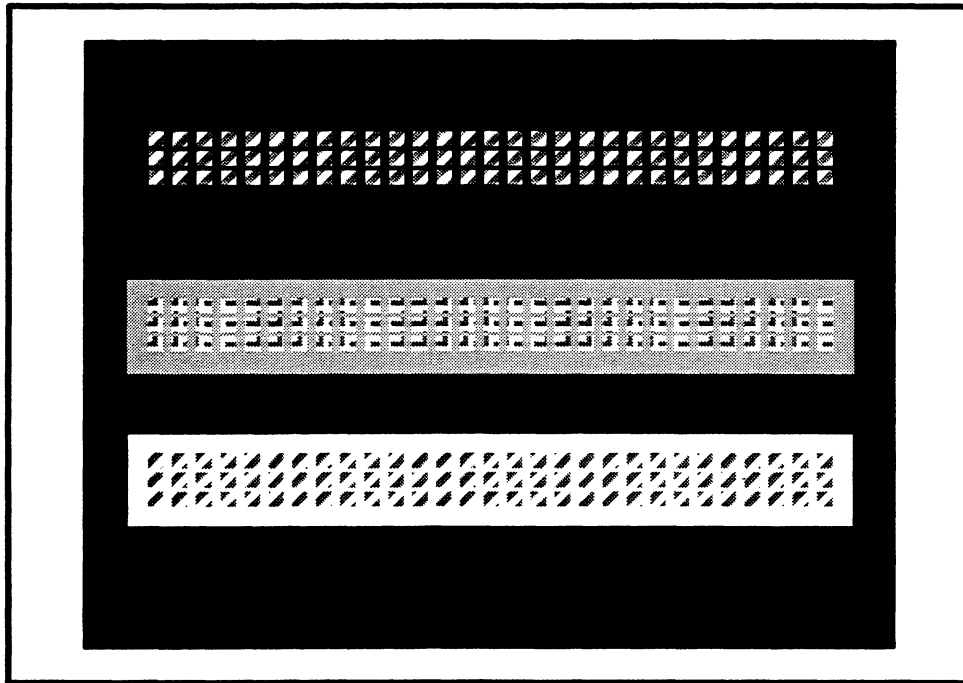
### Adjusting Video Contrast

Select item 3 to test the screen contrast and intensity of your graphics monitor. After you select item 3, "Display video adjustment CONTRAST pattern," you see the following screen message:

Press New Line to display the test pattern. Use the monitor BRIGHTNESS and CONTRAST controls to adjust the screen display until the pattern is distinct.

Press New Line to return to the Graphics Tools Menu.

After pressing New Line to begin the test, you see the following screen display:



Rotate the Contrast and Brightness controls left or right to adjust your screen display so that all three bars of shading are clear. Both controls are located beneath the edge of the monitor screen, as shown in Figure 4-1 on the previous page.

Press New Line to return to the Graphics Tools menu once you have adjusted the screen display contrast to your satisfaction.

### Testing Video Alignment

Select item 4 to test the screen aspect ratio and alignment. After you select item 4, "Display video adjustment PARALLEL pattern," you see the following instructions in a screen message. You cannot view the screen message once the test pattern appears.

If you have a monochrome monitor, your screen message appears as follows:

PARALLEL Pattern

Press New Line to display the test pattern.  
Then, toggle the pattern shading from foreground to background by pressing the Space Bar.

Press New Line again to return to the Graphics Tools Menu.

If you have a color monitor, your screen message appears as follows:

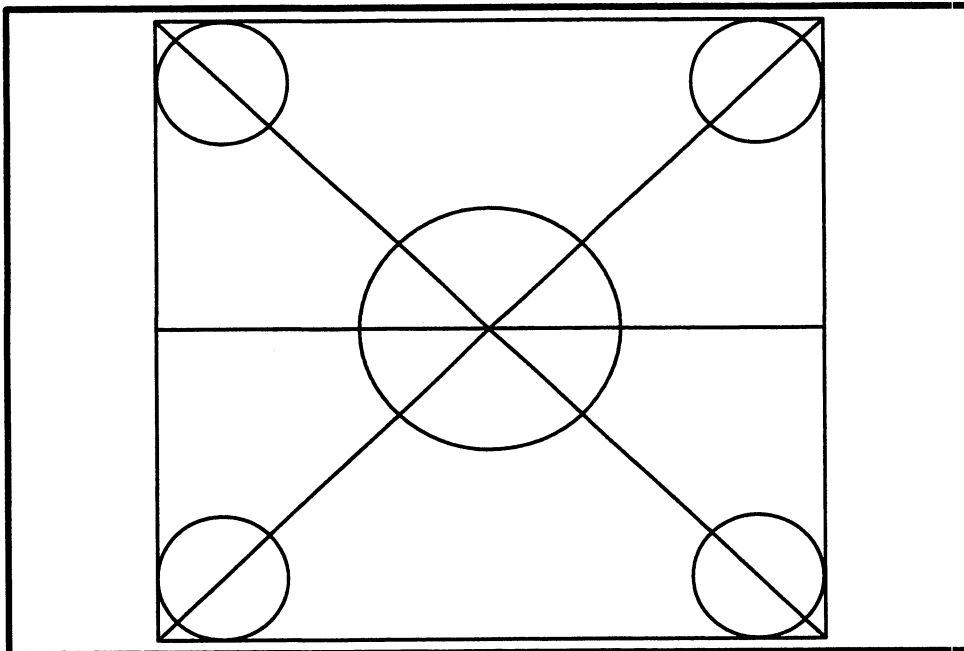
PARALLEL Pattern

Press New Line to display the test pattern.  
Then, toggle the pattern shading from foreground  
to background by pressing the Space Bar. To  
change the color of shading, press keys as  
follows:

- R=Red
- G=Green
- C=Cyan
- B=Blue
- Y=Yellow
- W=White

Press New Line again to return to the Graphics  
Tools Menu.

**After pressing New Line to begin the test, you see the following  
screen display:**



**Press the these keys to change the pattern color (if you have a color  
monitor):**



| <b>This Key Entry</b> | <b>Change Pattern to this Color</b> |
|-----------------------|-------------------------------------|
| <b>r</b>              | Red                                 |
| <b>g</b>              | Green                               |
| <b>c</b>              | Cyan blue                           |
| <b>b</b>              | Bright blue                         |
| <b>y</b>              | Yellow                              |
| <b>w</b>              | White (the default)                 |

All colors should appear distinct and uniform on your screen.

If the circles look like ellipses on your screen, or if shading, color, or pattern is not consistent across your screen, there may be a problem with your monitor; contact Data General, as described in the Preface.

Press New Line to return to the Graphics Tools Menu once you have tested the screen display to your satisfaction.

### **Testing Voltage Regulation**

Select item 5 to test for problems with the voltage regulator or the video power supply. After you select Item 5, "Display video adjustment REGULATE pattern," you see instructions in a screen message. You won't be able to view the screen message once the test pattern appears.

If you have a monochrome monitor, your screen message appears as follows:

REGULATE Pattern

Press New Line to display the test pattern.  
Then, toggle the pattern shading from foreground to background by pressing the Space Bar.

Press New Line again to return to the Graphics Tools Menu

If you have a color monitor, your screen message appears as follows:

REGULATE Pattern

Press New Line to display the test pattern. Then, toggle the pattern shading from foreground to background by pressing the Space Bar. To change the color of shading, press keys as follows:

R=Red  
G=Green  
C=Cyan  
B=Blue  
Y=Yellow  
W=White

Press New Line again to return to the Graphics Tools Menu

After pressing New Line to begin the test, your screen display fills completely with black with a white outline. Press the space bar to toggle from black to white.

Press the following lowercase keys to change the pattern color (if you have a color monitor):

| <b>This Key Entry</b> | <b>Change Pattern to this Color</b> |
|-----------------------|-------------------------------------|
| <b>r</b>              | Red                                 |
| <b>g</b>              | Green                               |
| <b>c</b>              | Cyan blue                           |
| <b>b</b>              | Bright blue                         |
| <b>y</b>              | Yellow                              |
| <b>w</b>              | White (the default)                 |

All colors should appear distinct and uniform on your screen.

Make sure that all screen shading is distinct, without interference. If shading is inconsistent, or if you notice waves in the screen display, there may be a problem with your monitor's power supply, or the monitor may be placed too close to other electronic equipment; contact Data General as described in the Preface.

Press New Line to return to the Graphics Tools menu once you have tested the screen display to your satisfaction.

## Testing Video Convergence

Select item 6 to verify uniform screen intensity and video convergence. After you select item 6, "Display video adjustment FLOOD pattern," you see instructions in a screen message, as shown below. You won't be able to view the screen message once the test pattern appears.

If you have a monochrome monitor, your screen message appears as follows:

FLOOD Pattern

Press New Line to display the test pattern.  
Then, toggle the pattern shading from foreground  
to background by pressing the Space Bar.

Press New Line again to return to the Graphics  
Tools Menu.

If you have a color monitor, your screen message appears as follows:

FLOOD Pattern

Press New Line to display the test pattern.  
Then, toggle the pattern shading from foreground  
to background by pressing the Space Bar. To  
change the color of shading, press keys as  
follows:

R=Red  
G=Green  
C=Cyan  
B=Blue  
Y=Yellow  
W=White

Press New Line again to return to the Graphics  
Tools Menu.

After pressing New Line to begin the test, your screen display  
appears white. Press the space bar to switch from a white screen to  
a completely shaded screen.

Press the following lowercase keys to change the color of shading (if you have a color monitor):

| <b>This Key Entry</b> | <b>Change Pattern to this Color</b> |
|-----------------------|-------------------------------------|
| <b>r</b>              | Red                                 |
| <b>g</b>              | Green                               |
| <b>c</b>              | Cyan blue                           |
| <b>b</b>              | Bright blue                         |
| <b>y</b>              | Yellow                              |
| <b>w</b>              | White (the default)                 |

Make sure that all screen shading is distinct, without interference. When you press the space bar to fill the screen or clear the screen of shading, make sure that shading is consistent. If you notice inconsistent areas in the screen display, there may be a problem with your monitor; contact Data General, as described in the Preface.

Press New Line to return to the Graphics Tools Menu once you have tested the screen display to your satisfaction.

### **Testing Video Stacking and Shading**

Select item 7 to test your graphics monitor's ability to display stacked colors and shading. After you select item 7, "Display CIRCLES pattern."

### **Monochrome Monitor**

If you have a monochrome monitor, you see the following screen message:

CIRCLES Pattern

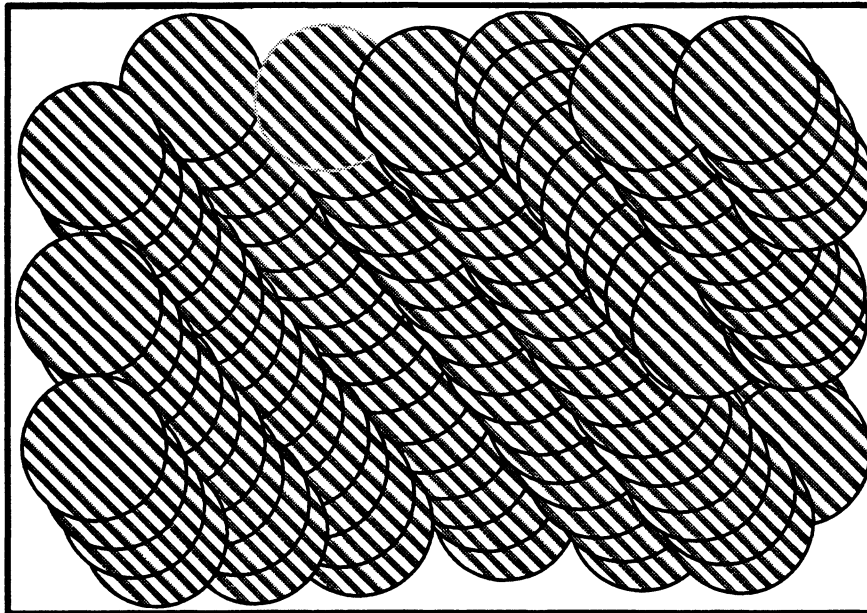
Press New Line to display a scrolling circles pattern. This test is complete when the pattern has stopped scrolling.

Press New Line again to return to the Graphics Tools Menu.

After pressing New Line to begin the test, your screen begins to fill with circles of shading. It takes at least one minute for the pattern to complete.

**IMPORTANT:** Do not press New Line more than *once* after the scrolling starts. Pressing New Line once returns you to the Graphics Tools Menu after the pattern is complete. If you press the New Line key more than once, you will exit back through the menu structure, accepting a menu default for each New Line you pressed.

When complete, your screen appears as follows:



If the circles do not appear on your screen at a consistent rate, or if each circle does not contain a distinct color or shade, contact Data General as described in the Preface.

Press New Line to return to the Graphics Tools Menu.

### **Color Monitor**

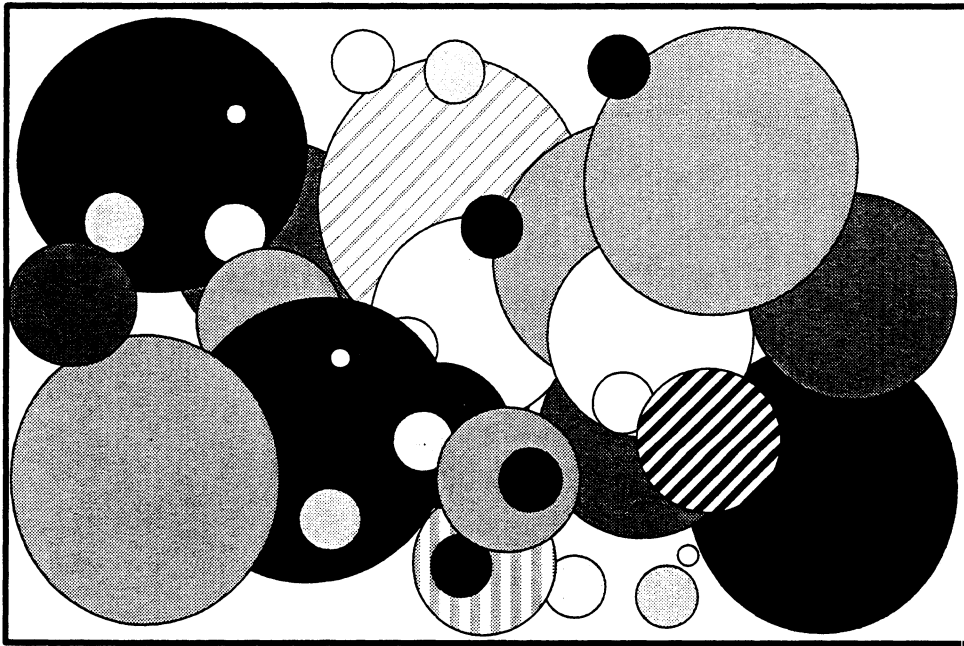
If you have a color monitor, you see the following screen message:

CIRCLES Pattern

Press New Line to display a scrolling circles pattern. When circle drawing stops, press New Line to redisplay the circles in 'transparent' mode.

Press New Line again to return to the Graphics Tools Menu.

After pressing New Line to begin the test, your screen begins to draw filled and unfilled circles of random sizes and colors. It takes about a minute for the pattern to complete. Your monitor display appears something like the following (yours, of course, looks much more colorful):



Press New Line to redraw the screen, this time in *transparent* mode. The circle patterns appear again, this time overlapping one another to create abundant shades and patterns.

If circles do not appear on your screen at a consistent rate, or if each circle does not contain a distinct color or shade, contact Data General as described in the Preface.

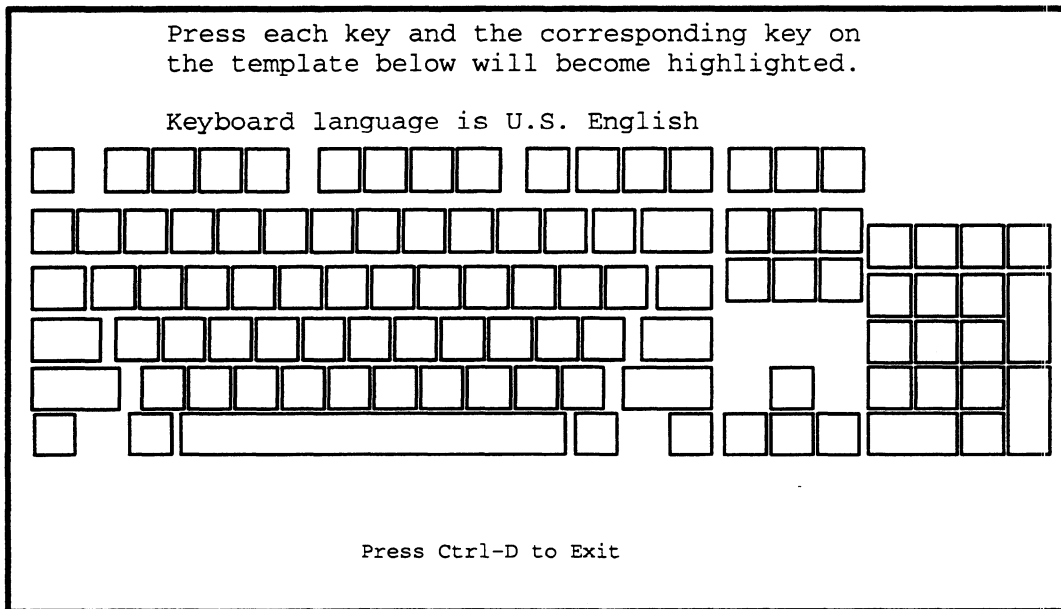
Press New Line to return to the Graphics Tools Menu.

## Testing the Keyboard

To test each key in your graphics keyboard, select the Keyboard test as follows:

1. While in the Tools Menu, type **5** and press New Line to select item 5, "Run Keyboard test."

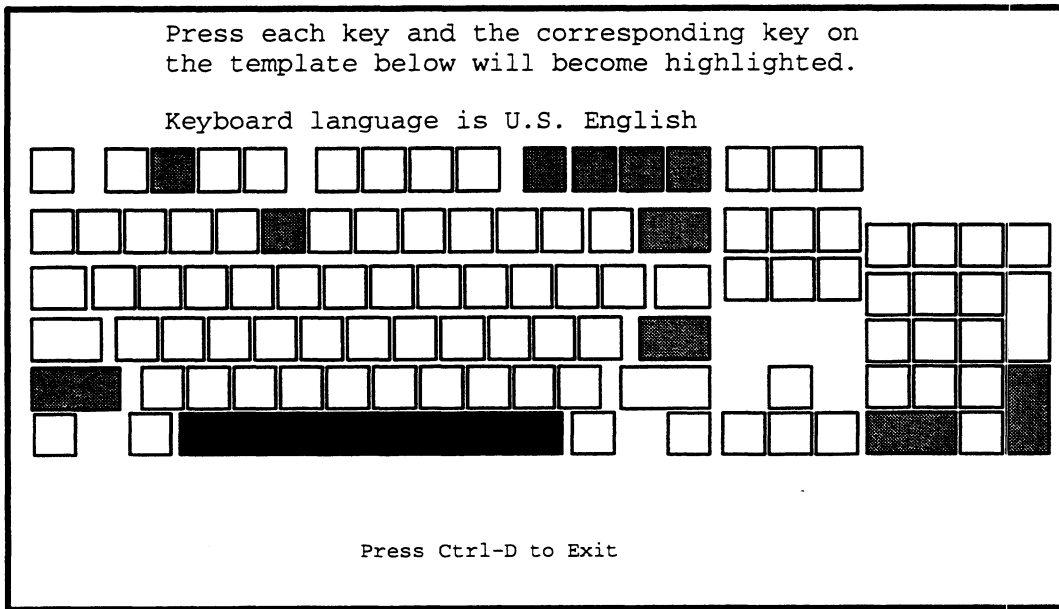
The system displays a keyboard outline like that of a PC AT, indicating the current keyboard language in text at the top of the screen.



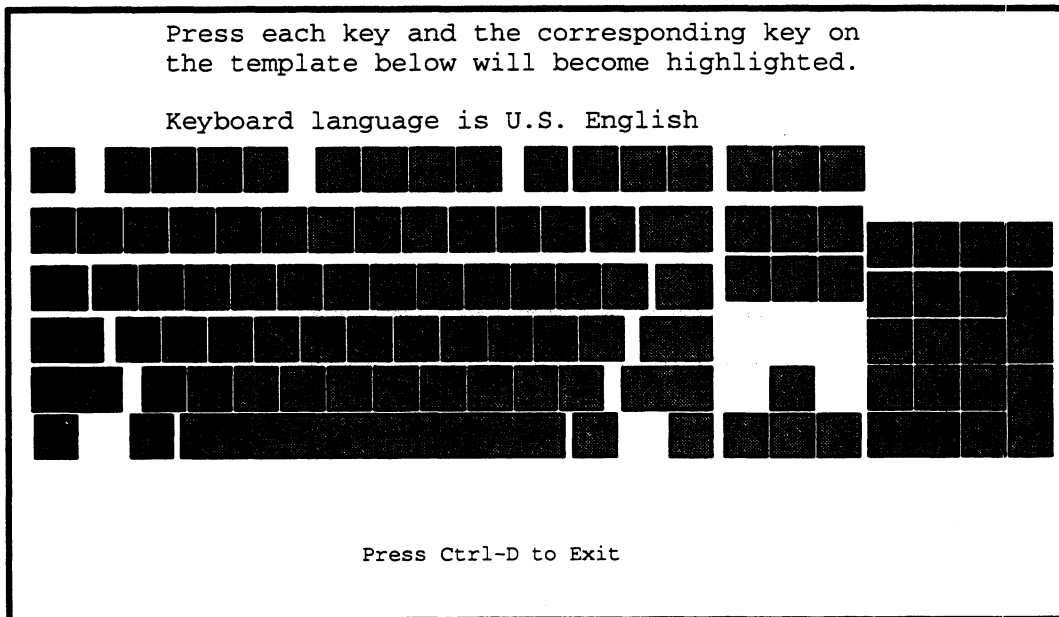
Each time you press a key on your keyboard, the corresponding key on your screen keyboard figure is highlighted and you hear a tone from the computer unit speaker. The display key remains highlighted as long as you hold down the keyboard key. Once you release the key, the tested key on your display remains highlighted in a different shade.

If any key does not respond as described above, you probably need to clean or replace your keyboard; contact Data General as described in the Preface.

2. Press each key on your keyboard. In the following example, several keys have been tested, indicated by shading; the space bar is currently being tested, indicated by darker shading.



Every key on the screen keyboard template should be highlighted when you complete the test, as seen below.



3. Press <Ctrl-D> to return to the Tools menu when you complete the keyboard test.

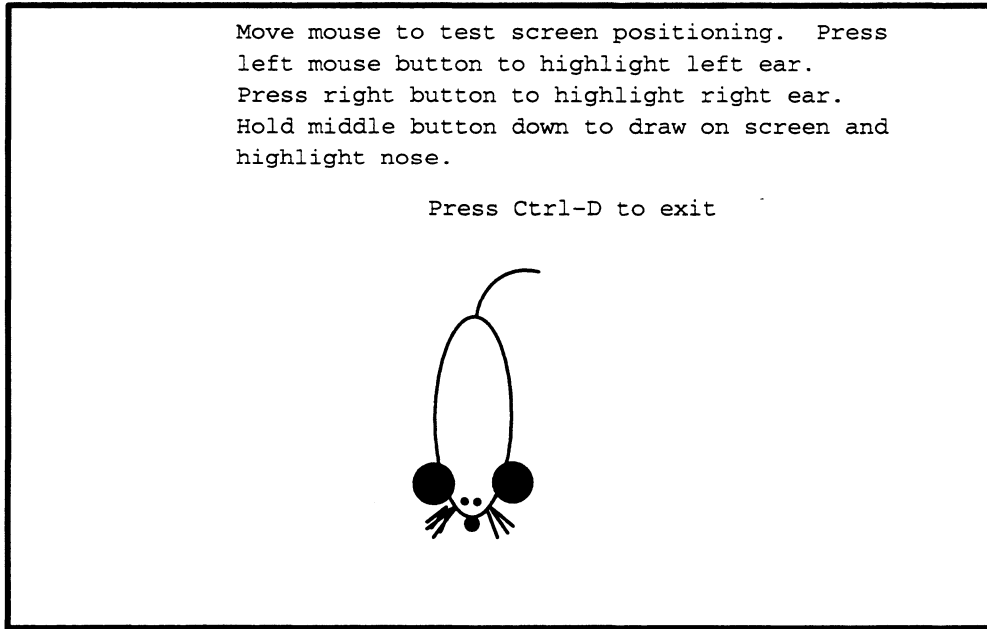


## Testing the Mouse

To test your mouse device, select the Mouse test as follows:

1. While in the Tools menu, type **6** and press New Line to select item 6, "Run Mouse test."

The system diagnostics displays the following screen:



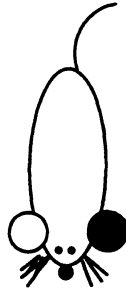
2. Move your mouse device around the mouse pad. The mouse figure on your screen should move in corresponding motion. You hear a beeping sound if you try to move the mouse off the screen.

If your screen display does not respond as described above when you move your mouse, verify that the mouse cable is properly connected, that the bottom of the mouse is clean and static-free, and that the mouse pad is clean. If the screen mouse still does not reflect motion of the mouse device on the mouse pad, contact Data General as described in the Preface.

3. Press the left mouse button. The left ear of the mouse figure on your screen should change color. Similarly, the right ear changes color when you press the right mouse button. If pressing the left or right buttons do not change the screen mouse ears, contact Data General as described in the Preface.

Move mouse to test screen positioning. Press left mouse button to highlight left ear. Press right button to highlight right ear. Hold middle button down to draw on screen and highlight nose.

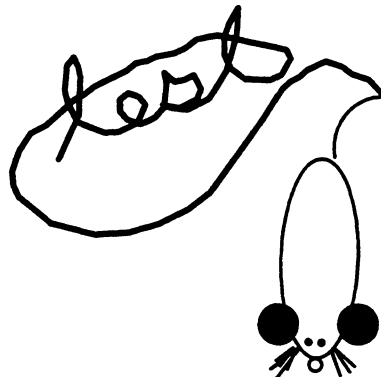
Press Ctrl-D to exit



4. Press and hold down the middle mouse button. The nose of the mouse figure on your screen turns white and you can draw on the screen with the tail of the screen mouse by moving your mouse around the mouse pad. If you cannot draw with the middle button pressed, contact Data General as described in the Preface.

Move mouse to test screen positioning. Press left mouse button to highlight left ear. Press right button to highlight right ear. Hold middle button down to draw on screen and highlight nose.

Press Ctrl-D to exit



5. Press <Ctrl-D> to return to the Tools menu when you complete the mouse test.

End of Chapter

# A Quick Steps: When Data General Needs To Access Your AV/Alert Computer

---

Refer to this section when a Data General support engineer has notified you that there is a problem with your system and it's necessary for a Data General AV/Alert Support Engineer to access your system remotely to resolve the problem.

## Displaying AV/Alert Support Menus

First, start the DG/UX SVCMMGR software, or display the SCM Remote menu, as described below; which subsection of steps you follow depends on whether your operating system is still running properly or not.

Then, with the appropriate AV/Alert support menu displayed, proceed to the steps that follow, "Working With the Support Engineer."

### If DG/UX Is Running

As root or superuser, start the DG/UX Service Manager (SVCMMGR) software (pathname /usr/sbin/svcmmgr) as follows:

```
svcmmgr ↵
```

The program first displays a copyright information screen. Press New Line to clear the screen.

```
↵
```

SVCMMGR checks for a valid dynamic password, then displays the Service Support Menu:

```
Service Manager (Rev x.x)
=====
1. AV/Alert System Status
2. AV/Alert Setup
3. AV/Alert Messages
4. Error Management
5. Online Diagnostics
```

```
Enter selection ('q' to quit; ^ previous menu): 1 ↵
```

To see the current AV/Alert status, select item 1, "AV/Alert System Status" from the Service Manager Main menu.

You see a complete status screen, similar to the following:

```
AV/Alert System Status
=====
System ID : 0C3B2A61
Contract Number : 123456789
Dynamic Password : Valid
Remote Access : Enabled
Remote Access Password : dgavremote
Remote Connection Status : Active
Machine Initiated Calling : Enabled
Error Thresholding : Enabled
Automatic Deconfiguration : Disabled
Deferred Machine Initiated Calling : Disabled
```

Press Enter to Continue

Leave this screen displayed, and proceed with the “Working With the Support Engineer” section.

## If DG/UX Is *NOT* Running

Display the SCM Remote Menu using the SCM RSI (Remote Service Interface) command, as follows:

```
Jp#n/SCM> rsi)

REMOTE MENU

1 Remote Access Password [xxxxxxxxxxxx]
2 Remote Enable/Disable [Disabled]
3 Remote Phone Numbers
4 Remote Dialout
5 Pause MI [Disabled]
6 Dynamic Password
7 Status
8 Reset Modem
9 View System ID
10 Return to previous screen
```

Enter choice ->

With the menu displayed, proceed with the “Working With the Support Engineer” section, below.

## Working with the Support Engineer

Follow the instructions you get from your Support Engineer. Most information the support engineer will need appears on the SVCMMGR “AV/Alert System Status” screen, or on the SCM REMOTE menu.

The engineer is likely to need to know the following:

#### 4. Is Remote Access Enabled?

- ▶ If the default on your AV/Alert support menu indicates that remote access is currently disabled, toggle the setting from [Disabled] to [Enabled].

(The status of Remote Access appears on the AV/Alert System Status Screen, or next to item 2 on the SCM Remote menu).

#### 5. What is your Remote Access Password?

- ▶ If you’ve changed the remote access password from the factory default (DGAVREMOTE), tell the support engineer the new remote access password.

(The Remote Access Password appears on the AV/Alert System Status Screen, or next to item 1 on the SCM Remote menu).

**IMPORTANT:** The password *is* case-sensitive; specify whether letters are upper- or lowercase.

#### 6. What is your AV/Alert modem telephone number?

- ▶ Tell the support engineer which portion of your callback dial string is marked by left and right brackets, (<>).

Select item 2, “AV/Alert Setup” from the SVCMMGR Main Menu. Then, select item 2, “Remote Access Parameters,” to display the Remote Access Parameters Menu. From there, select item 2, “Remote Telephone Numbers,” to view your callback number.

Item 3, “Remote Telephone Numbers,” (3↓) on the SCM REMOTE menu enables you to view the list of numbers as well.

## During the Remote Connection

- ▶ The support engineer initiates a data connection to your computer. You'll see the following:

```
*** Remote Connection Detected ***
*** Prompting for Info ***
*** Type Control-C to abort ***
```

Your computer prompts for your remote access password and for the check portion of the callback number. If the support engineer enters an incorrect password or does not respond quickly enough, AV/Alert breaks the data connection immediately; the engineer must initiate the call again.

The support engineer initiates a callback from your computer. Your computer breaks the telephone connection, hangs up the modem, and then automatically dials the stored dial string to call back to the support center modem line.

- ▶ You'll see the following sequence of messages displayed while this is happening:

```
*** Hanging Up Modem ***
*** Delaying Before Call-back ***
*** Resetting Modem ***
*** Type Control-C to abort ***
```

```
*** DIALING T12345678901 ***
```

- ▶ When the CSC receives the modem callback, the support engineer must re-enter your remote access password. You see the request on your screen:

```
*** Verify password ***
```

- ▶ Once your computer verifies the password and allows the remote connection, you see this message:

```
*** Remote Operator is now Present***
*** System Control - REMOTE ***
```

The following keyboard control functions are available to you (and to the remote engineer) during a remote connection. You can use the <Ctrl-E> sequence to break the connection at any time.

| Keyboard Entry | Result                                                                                                                                                                                                                                                                   |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <CTRL-E>       | Allows the local computer (you) to close the remote connection and reset the modem. Works at any time during connection.                                                                                                                                                 |
| <CTRL-T>       | Toggles (starts or stops) Talk mode. In Talk mode, the system considers all keyboard entry to be ASCII text; there is no command interpretation. Allows the local operator (you) and remote operator to type text messages to each other's console screens.              |
| <CTRL-V>       | Allows you to transmit special characters in Talk mode. For example, typing <Ctrl-V/Ctrl-E> does not reset the modem; it sends the text string Ctrl-E to the remote screen.                                                                                              |
| <CTRL-X>       | Toggles (starts or stops) system console control. Transfers system console control to the remote computer keyboard when the local computer (you) has control. Local and remote operators exchange control using this sequence. Works whether or not Talk mode is active. |

### If DG/UX Is Running

If the DG/UX system is running on your computer, the support engineer has system console control of your computer via the AV/Alert remote on-line interface. The operator chooses from the following menu options, which you see echoed on your system console screen:

```
AViiON Remote Online
=====
```

- 1). Virtual Console
- 2). User Login
- 3). Disconnect

Enter choice:

The support engineer chooses item 1, "Virtual Console" for access to your computer's SCM interface or logs in to DG/UX using a valid, authorized account.

**If DG/UX Is NOT Running**

If your system is not running the DG/UX system, you will see the System Control Monitor prompt displayed, as follows:

```
*** System Control - REMOTE ***
Jp#n/SCM>
```

This means that the support engineer's computer has direct control of your computer via the SCM interface.

**End of Appendix**



# B Quick Troubleshooting Guide

---

Use Table B-1 for assistance in trying to resolve common problems with your AViON computer.

---

## AV/ALERT

When AV/Alert detects an error or problem, it sends a machine-initiated incident packet (*MI call*) to Data General for call handling. Suggestions for responding to problems in this appendix are self-help measures; automated AV/Alert error handling is *not* reflected in Table B-1. There are, however, entries for handling problems with your AV/Alert configuration.

---

If a symptom of your system problem does not appear in this table, if you encounter additional trouble while attempting to resolve a problem, or if you cannot resolve your situation using the information in this or other manuals, contact Data General as described in the Preface of this manual.

**CAUTION:** *It is very important that you record any screen display and special circumstances following an error condition before taking any action that could remove a visible indication of the error's cause.*

**Table B-1** Responding to AViiON System Problems

| Symptom                                                                                                                                                              | Action to Take                                                                                                                                                                                                                                                                                                                              | Where Described                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AV/Alert remote functions not working.                                                                                                                               | <ol style="list-style-type: none"> <li>1. Make sure modem cabling is secure.</li> <li>2. Check for modem READY indicator.</li> </ol> <p>Make sure REMOTE access is enabled on AV/Alert support menu.</p> <p>Make sure your computer's AV/Alert service port baud rate matches that of the modem you are using.</p>                          | <p>Chapter 2 (Figures 2-1 and 2-4).</p> <p>Chapter 3, "Enabling or Disabling Remote Access."</p> <p>Chapter 3, "Viewing or Changing Modem Parameters."</p>                                                              |
| You receive this message: AV/Alert Shutting Down....                                                                                                                 | Contact Data General immediately.                                                                                                                                                                                                                                                                                                           | Preface                                                                                                                                                                                                                 |
| AV/Alert MI functions not working (and you know for certain that Data General has not disabled the MI feature while diagnosing a problem or at your site's request). | <ol style="list-style-type: none"> <li>1. Make sure modem cabling is secure.</li> <li>2. Check for modem READY indicator.</li> </ol> <p>Verify that your dynamic password is valid.</p> <p>See whether MI calling is enabled.</p> <p>Make sure your computer's AV/Alert service port baud rate matches that of the modem you are using.</p> | <p>Chapter 2 (Figures 2-1 and 2-4).</p> <p>Chapter 3, "Verifying or Installing a Dynamic Password."</p> <p>Chapter 3, AV/Alert System Status screen.</p> <p>Chapter 3, "Viewing or Changing Modem Port Parameters."</p> |
| AViiON computer won't power on.                                                                                                                                      | <ol style="list-style-type: none"> <li>1. Make sure all power cabling is secure.</li> <li>2. Check power source.</li> <li>3. Repeat powerup procedure as described in hardware documentation.</li> </ol>                                                                                                                                    | Your model-specific hardware <i>Installing</i> manual, "Solving Powerup Problems."                                                                                                                                      |

Continued

**Table B-1** Responding to AViiON System Problems

| <b>Symptom</b>                                                                 | <b>Action to Take</b>                                                                                                                                                                                                                                                                                           | <b>Where Described</b>                                                                                         |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| AViiON computer fails powerup testing.                                         | <ol style="list-style-type: none"> <li>1. Turn all power off.</li> <li>2. Reconnect and/or secure all cabling.</li> <li>3. Turn power back on (in the correct order – peripherals first).</li> <li>4. If failure repeats, contact Data General; indicate your screen display at the time of failure.</li> </ol> | Your model-specific hardware <i>Installing</i> manual, "Solving Powerup Problems."                             |
|                                                                                | Run the stand-alone Acceptance test                                                                                                                                                                                                                                                                             | Chapter 5                                                                                                      |
| New or replaced part is not sized at powerup.                                  | <ol style="list-style-type: none"> <li>1. Turn all power off.</li> <li>2. Reconnect or re-install the new part.</li> <li>3. Secure all cabling.</li> <li>4. Turn power back on (in the correct order – peripherals first.)</li> </ol>                                                                           | Your model-specific hardware <i>Installing</i> manual, and/or the hardware manual that came with the new part. |
|                                                                                | Run the stand-alone Acceptance test                                                                                                                                                                                                                                                                             | Chapter 5                                                                                                      |
| LAN connections are not working consistently; you've ruled out software error. | Run the stand-alone Acceptance test                                                                                                                                                                                                                                                                             | Chapter 5                                                                                                      |
|                                                                                | Run the stand-alone TDR test                                                                                                                                                                                                                                                                                    | Chapter 5, "Testing LAN Connections."                                                                          |
| New or used diskette(s) require hardware formatting.                           | Run the stand-alone Format Diskette utility                                                                                                                                                                                                                                                                     | Chapter 5, "Maintaining Storage Media."                                                                        |
| New or used cartridge tape(s) reels require adjustment.                        | Run the stand-alone Tape Tension utility                                                                                                                                                                                                                                                                        | Chapter 5, "Maintaining Storage Media."                                                                        |

Continued

**Table B-1** Responding to AViiON System Problems

| Symptom                                               | Action to Take                                                                                                                                                                                                                                                                                                             | Where Described                                                                                                                                                                |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Printer not working; you've ruled out software error. | Run on-line Printer test.<br>Run stand-alone Terminal tests on printer port (if printer is managed by a VME controller).                                                                                                                                                                                                   | Chapter 4<br>Chapter 5, "Testing and Identifying Terminal Ports."                                                                                                              |
| Stand-alone Diagnostics hangs or fail while running.  | <ol style="list-style-type: none"> <li>1. Try to exit to the SCM prompt.</li> <li>2. Reboot and restart the diagnostic operating system.</li> <li>3. Turn power off and back on (in the correct order – peripherals first).</li> <li>4. If failure repeats, contact Data General.</li> </ol>                               | Chapter 5, "Exiting from Stand-alone Diagnostics" and "Booting Stand-alone Diagnostics."<br>Your model-specific hardware <i>Installing</i> manual, "Solving Powerup Problems." |
| SVCMGR hangs while testing.                           | <ol style="list-style-type: none"> <li>1. Terminate the svcmgr process.</li> <li>2. Restart the operating system.</li> <li>3. Turn power off and back on (in the correct order – peripherals first).</li> <li>4. If failure repeats, contact Data General; indicate your screen display at the time of failure.</li> </ol> | <i>Managing DG/UX™</i> or another manual in the DG/UX system administrator set.<br>Your model-specific hardware <i>Installing</i> manual, "Solving Powerup Problems."          |
|                                                       | Run the on-line or stand-alone Acceptance test                                                                                                                                                                                                                                                                             | Chapter 4 or 5                                                                                                                                                                 |

Continued

**Table B-1** Responding to AViiON System Problems

| <b>Symptom</b>                                                                                                                                        | <b>Action to Take</b>                                                               | <b>Where Described</b>                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------|
| Terminal(s) managed by an asynchronous controller won't work, show inaccurate or inconsistent screen display, or produce inconsistent keyboard input. | Run stand-alone Terminal tests to identify port number(s) and test the terminal(s). | Chapter 5, "Testing and Identifying Terminal Ports." |
| Time for a Routine maintenance check.                                                                                                                 | Run the on-line or stand-alone Acceptance test                                      | Chapter 4 or 5                                       |
| Workstation graphics appear distorted or unusual.                                                                                                     | Run stand-alone Graphics tests                                                      | Chapter 5, "Using the Graphics Tools Menu."          |
| Workstation keyboard seems to be missing keys or producing inconsistent input.                                                                        | Run on-line Keyboard test<br>Run stand-alone Keyboard test                          | Chapter 4<br>Chapter 5                               |
| Workstation mouse input seems inaccurate or inconsistent.                                                                                             | Run on-line Mouse test<br>Run stand-alone Mouse test                                | Chapter 4<br>Chapter 5                               |

End of Appendix



# C Summary of Diagnostic Menus

---

This appendix provides a brief reference of the menus available to you when testing and troubleshooting AViiON computers. Figures in this appendix illustrate menu and submenu paths of the following diagnostic products:

- DG/UX Service Manager (SVC MGR) software
- AViiON System Diagnostics (stand-alone diagnostics)
- Firmware Service Support in the System Control Monitor (SCM)

Refer to Chapter 1 for an overview of each of these diagnostic components.

---

## AV/ALERT

All AViiON server model computers (*except* 3200, 4000, and 4100 series) support AV/Alert features during the warranty period, or with a valid hardware service contract. (You enable AV/Alert as described in Chapter 2.)

With the AV/Alert system enabled, every menu and option shown in this appendix is available to you.

---

**IMPORTANT:** Most features of the on-line diagnostics and stand-alone AViiON System Diagnostics are available for all AViiON computers, regardless of warranty or service contract status. ■

# DG/UX Service Manager (SVCMMGR)

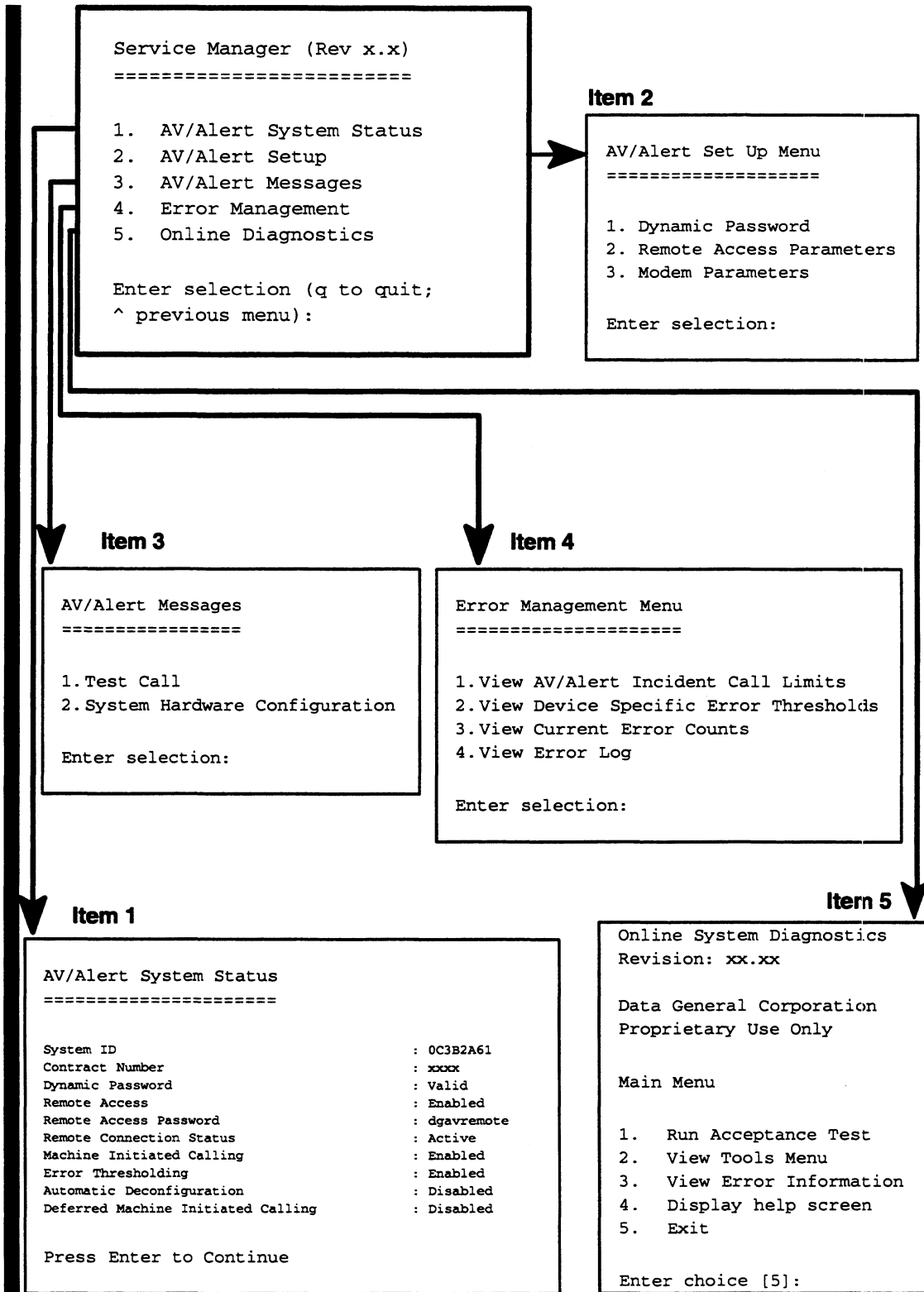


Figure C-1 SVCMMGR Main Menu



## AV/ALERT Configuration Set-up Menus

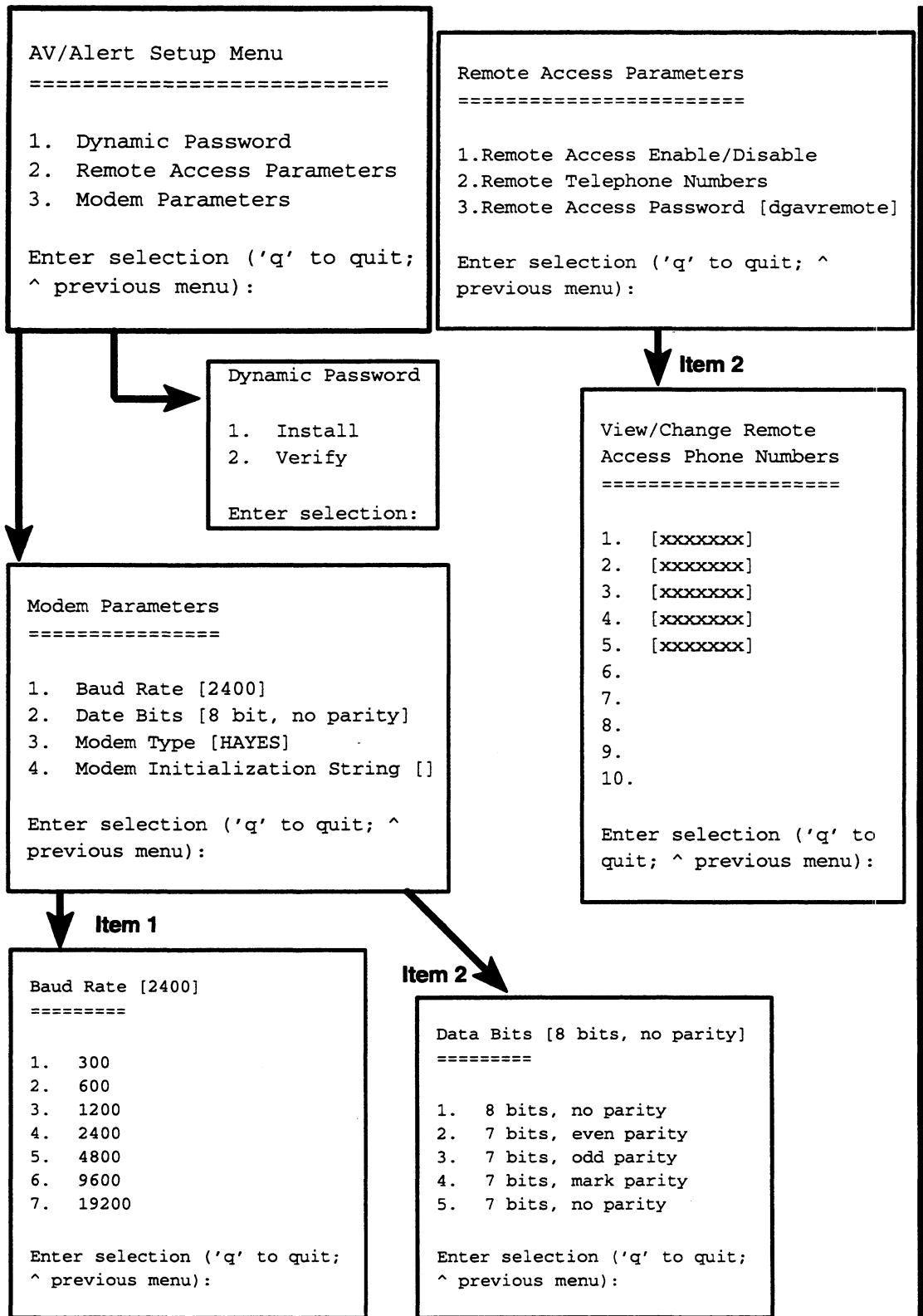


Figure C-2 AV/Alert Configuration Menus

## On-line System Diagnostics

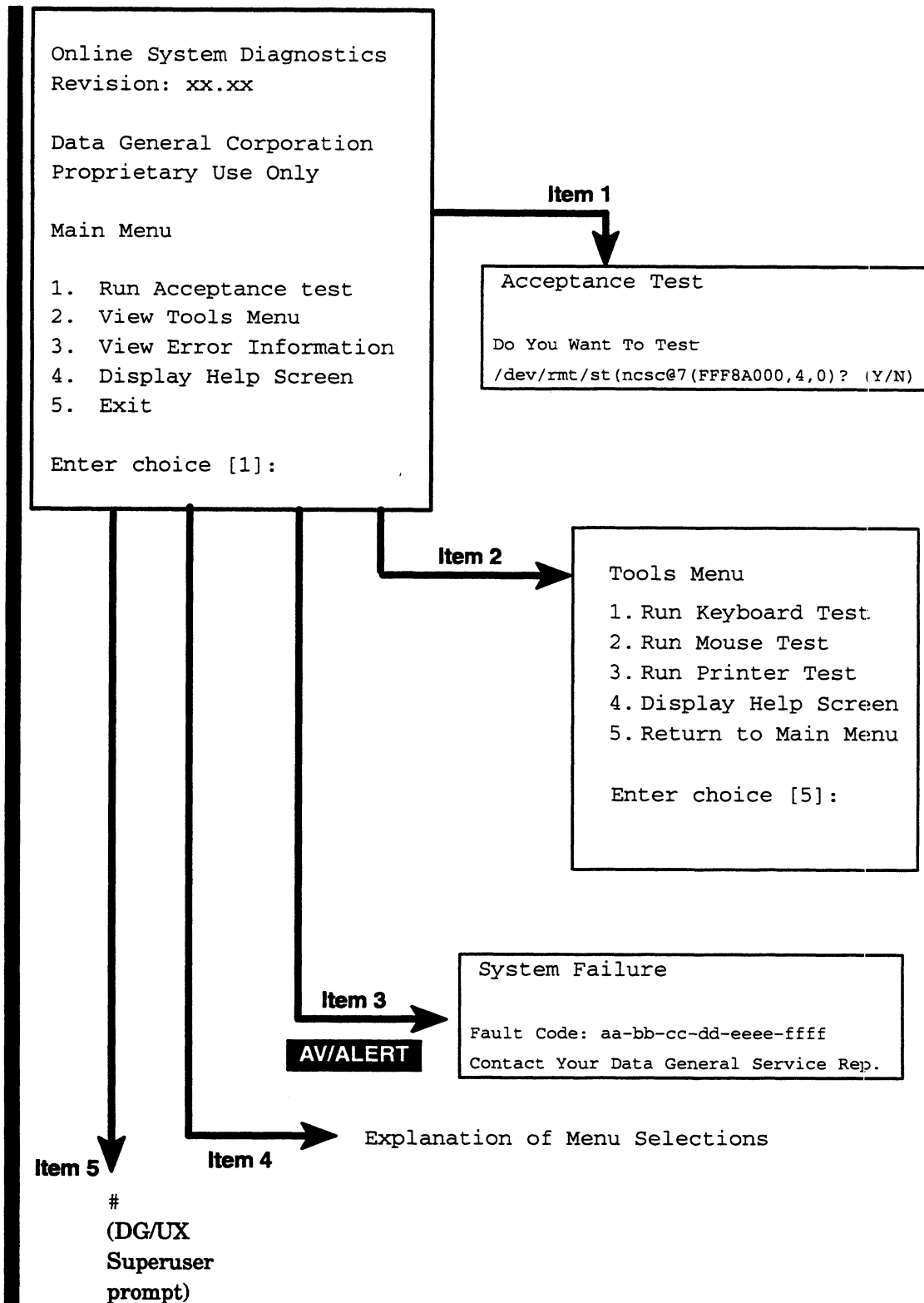


Figure C-3 On-line System Diagnostics Main Menu

# Stand-alone AViiON System Diagnostics

## Main Menu

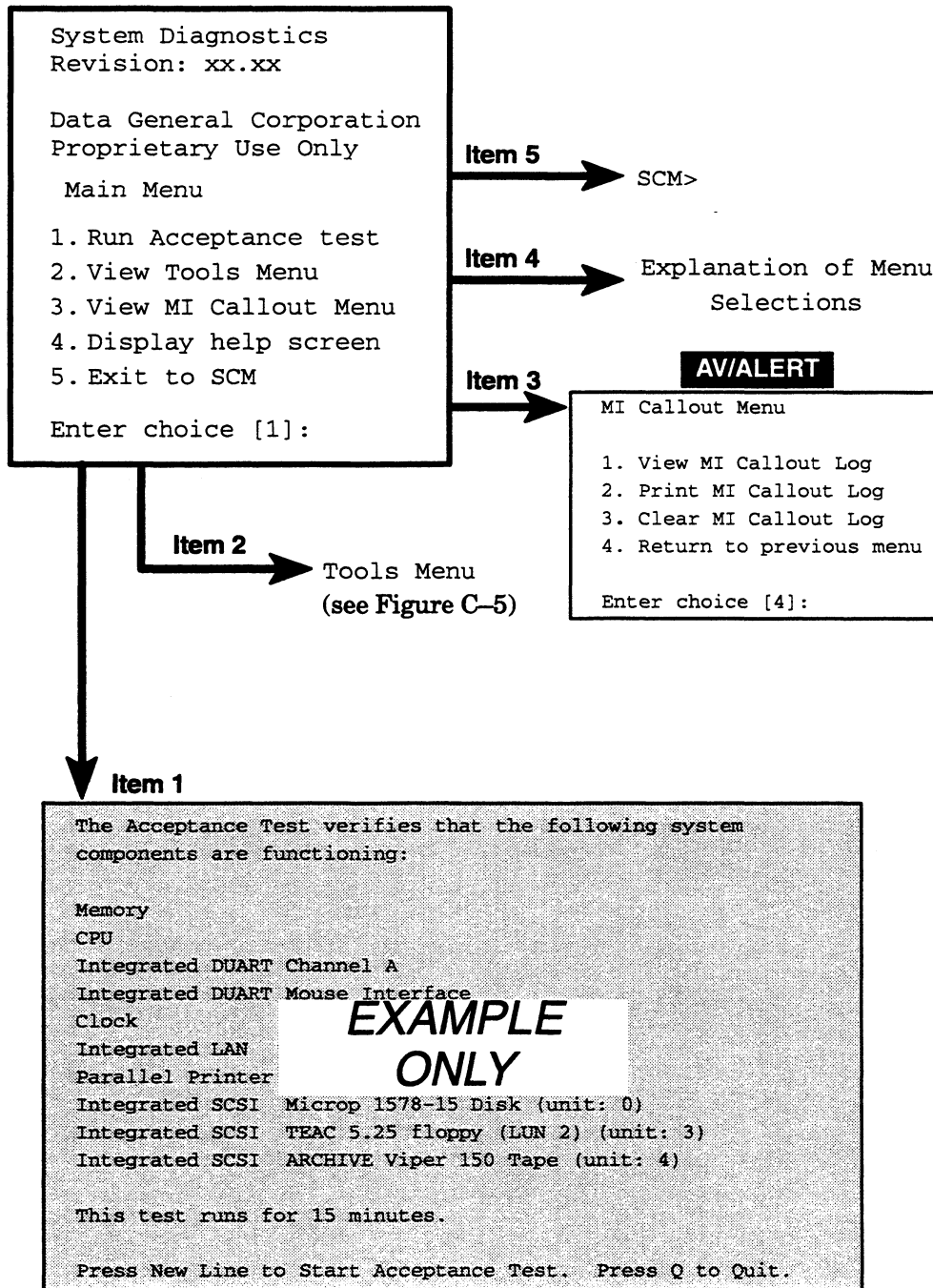


Figure C-4 Stand-alone Diagnostics Main Menu

## Stand-alone Tools Menu

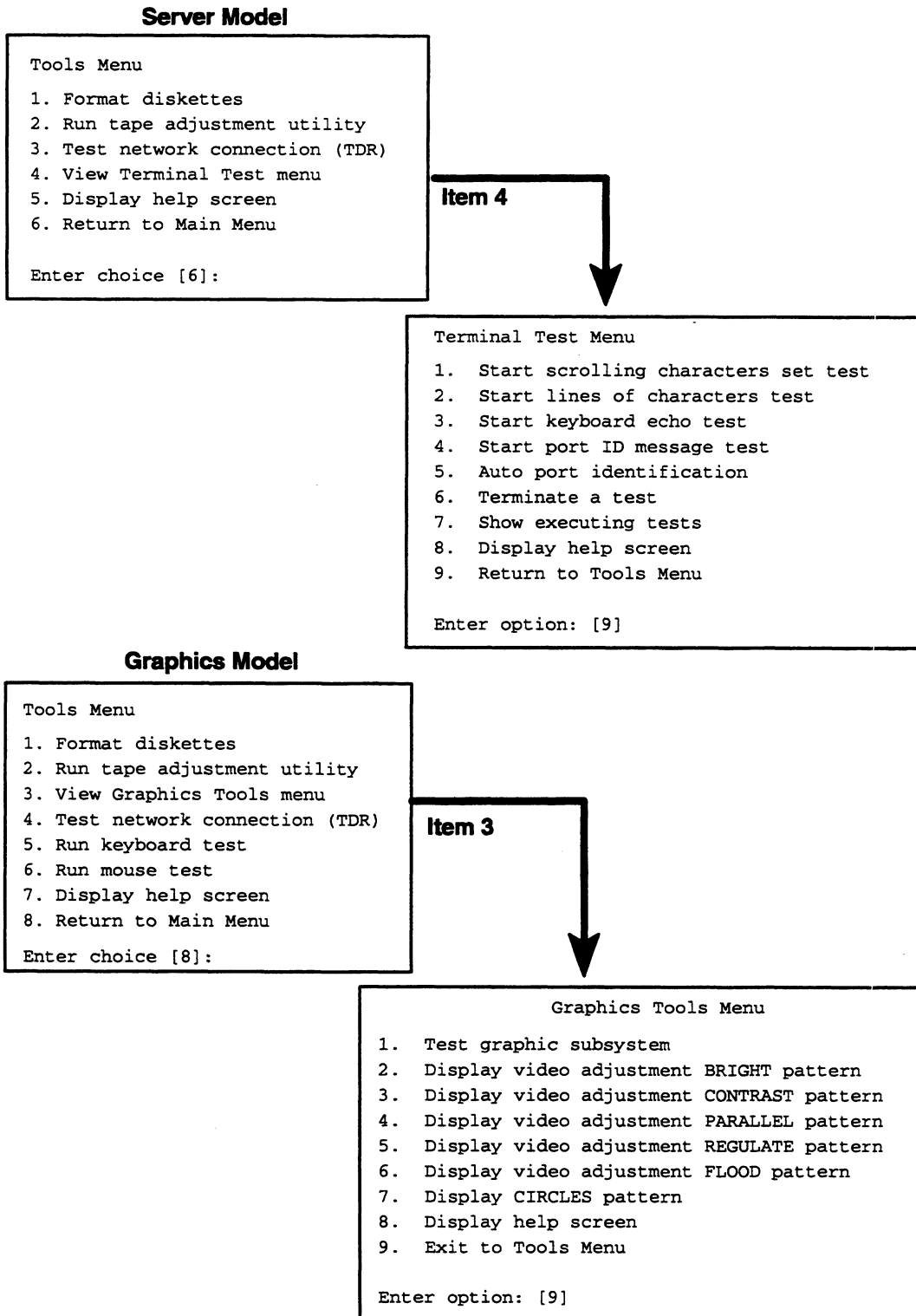


Figure C-5 Stand-alone Diagnostics Tools Menu

# System Control Monitor (SCM)

## RSI (Remote Service Interface) Menu **AV/ALERT**

```
REMOTE MENU

1 Remote Access Password [DGAVREMOTE]
2 Remote Enable/Disable [Enabled]
3 Remote Phone Numbers
4 Remote Dialout
5 Pause MI [Enabled]
6 Dynamic Password
7 Status
8 Reset Modem
9 View System ID
10 View Service Contract Number
11 Return to previous screen

Enter choice ->
```

**Figure C-6** SCM Remote Service Interface Menus

End of Appendix



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