Data General

AViiON

Installing and Operating the AViiON® AV 3600R System

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014–511646–01

Notice

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Revision History:

Original Release – December, 1996
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A vertical bar in the margin of a page indicates substantive technical change from the previous revision.

NOTE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference in which case the user will be required to correct the interference at his own expense. Testing was done with shielded cables. Therefore, in order to comply with the FCC regulations, you must use shielded cables with your installation.

WARNING

This product complies with EN55022 Class A. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe (A) prescrites dans la norme sur le matériel brouilleur : "Appareils Numériques", NMB-003 édictée par le ministre des Communications.

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で商工業地域での電波障害防止を目的とした情報処理装置等電波障害自主規制
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Manufacturer's Declaration of Conformity

This equipment has been tested and found to comply with the requirements of European Community Council Directives 89/336/EEC and 73/23/EEC relating to electromagnetic compatibility and product safety respectively.

Important safety instructions

In addition to following anti-static procedures, do the following when you perform any work on your system:

1. Follow all instructions marked on the system and in the documentation.

2. Turn off the primary cabinet circuit breaker before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

3. Do not use this product near water. Do not spill liquid on the product.

4. Do not place this product on an unstable surface.

5. Openings in the system chassis are for ventilation. Do not block or cover these openings. Do not place the system near or on a radiator or heat register.

6. Use only the type of power source indicated on the power supply. If you are not certain about your power source, contact Data General as detailed in the preface of this manual or the local power company.

7. This system has a 3-wire grounding type plug (a plug with a third/grounding pin). This plug will only fit into a grounded power outlet. This is a safety feature. If the cabinet outlet does not accommodate a 3-wire plug, contact your electrician to replace it.

8. Do not walk on the power cord or allow anything to rest on it.

9. If you use an extension cord with this product, make sure the total ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating. Also, the total ampere requirements for all products plugged into the wall outlet must not exceed 15 amperes.

10. Never insert objects of any kind into the system ventilation slots.

11. Do not attempt to service the system yourself except as explained elsewhere in the manual. Adjust only those controls covered in the instructions. Opening or removing covers marked **Do Not Remove** may expose you to dangerous voltages or other risks. Refer all servicing of those compartments to qualified service personnel.

12. Under the following conditions, unplug this product from the wall outlet and refer servicing to qualified service personnel:

    • The power cord or plug is damaged.

    • Liquid has been spilled into the system.

    • The system does not operate properly when the operating instructions are followed.

    • The system was dropped, or the cabinet is damaged.

    • The product exhibits a distinct change in performance.

IMPORTANT   The cabinet's circuit breaker serves as the main disconnect for the computer, and must be easily accessible by the operator.

WICHTIG   Der Stromkreisunterbrecher des Schranks dient als Hauptverbindungsunterbrechung für den Computer und muß daher für den Bediener leicht erreichbar sein.

WARNING   **Do not pull out any more than one CPU drawer from the cabinet at a time. Doing so could cause the cabinet to tip over.**

ACHTUNG   **Ziehen Sie nie mehr als eine CPU Schublade auf einmal aus dem Schrank heraus, sonst könnte der Schrank umkippen.**

Preface

This manual describes how to install and operate your AViiON® AV 3600R. It provides detailed instructions and illustrations to help you do the following:

- set up and power up the system

- install an SCA drive

- troubleshoot the system

- use System Control Monitor commands and menus

How this manual is organized

This manual contains six chapters and one appendix. The following list gives an overview of what you will find in these chapters:

Chapter 1   Explains how to install and set up the AV 3600R. It also explains how to power up the system.

Chapter 2   Explains system features. It describes system architecture and lists supported operating systems.

Chapter 3   Describes how to expand and upgrade the AV 3600R by installing SCA drives.

Chapter 4   Provides troubleshooting tips for common problems and explains the different diagnostic tools that come with the AV 3600R. It also tells you about the AV 3600R exTended Service Board (TSB).

Chapter 5   Explains how to use the EISA Configuration Utility (ECU) and BIOS Setup to configure the AV 3600R.

Chapter 6   Tells you how to use the System Control Monitor commands and menus.

Appendix A   Tells you how to boot the DG/UX operating system.

Related Data General manuals

For a complete description of DG/UX® documentation available for your system, refer to the *Quick Start Guide for Viewing DG/UX® Documentation* (069–701129). Your system might also include operating system diagnostics and other applications from parties other than Data General.

Additional related Data General manuals include:

Installing the DG/UX® System (093–701087). It describes how to install the DG/UX system on AViiON computers.

Managing the DG/UX® System (093–701088). It discusses the concepts and tasks related to DG/UX system management, and provides general administration orientation. It also explains how to use the **sysadm** facility.

Using the AViiON® Diagnostics and the AV/Alert^sm Diagnostic Support System – DG/UX® Environment (014–002512). For system managers and responsible operators running DG/UX R4.11 and later revisions. It explains how to enable and use the AV/Alert remote and machine-initiated assistance system. It also explains how to use the AViiON In-Service Diagnostics (ISD) with the DG/UX operating system.

Installing and Setting Up the NTAlert^sm Diagnostic Support System (014–002598). For system managers and responsible operators. It explains installation and setup procedures for NTAlert software. It also explains how to view NTAlert information logs that contain hardware and error information.

Managing Mass Storage Devices and DG/UX® File Systems (093–701136). It explains how to manage disk and tape drives. It also explains DG/UX file systems, virtual disks, mirrors, and caching.

Format conventions

We use the following format conventions in this manual:

Convention	Meaning
boldface	Indicates text (including punctuation) that you type verbatim.
	All DG/UX commands, pathnames, and names of files, directories, and manual pages appear in this typeface.
monospace	Represents a system response (such as a message or prompt), a file or program listing, or a menu path.
italic	Represents variables for which you supply values; for example, the name of a directory or file, your username or password, and explicit arguments to commands.
{ }	Braces indicate a choice of arguments. You must enter one of the enclosed arguments. Do not type the braces; they only set off the choices.
[ ]	These brackets surround an optional argument. Don't type the brackets; they only set off what is optional.

[ ]	Boldface brackets are literal characters that you must type.
...	Means you can repeat the preceding argument as many times as appropriate.
⏎	Represents the Enter key. (On some keyboards this key is called Return or New Line.)
< >	Angle brackets distinguish a command sequence or a keystroke (such as <Ctrl-D>, <Esc>, and <3dw>) from surrounding text. Don't type the angle brackets.

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, telephone support is available with your hardware warranty and with Support Plus and Hotline Software Support service contracts. 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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Internet users can reach Data General's web server at **http://www.dg.com**. In addition, you can send us e-mail at aviion@dg.com.

Data General's Customer Support Center (CSC) provides Internet users with access to a Service Request Menu, Electronic Search Program, a Bulletin Board, Monthly Newsletters, Weekly Bulletins, Maintenance Updates, patches, and important information on a variety of operating systems. An active support contract may be required for certain features.

Internet users can reach the CSC web at **http://www.csc.dg.com**.

Joining our users group

NADGUG, the North American Data General Users Group, is a unique network of Data General users who wish to discover more about working computer environments and how to use them. As a professional, user-run organization, NADGUG enables members to make contacts with colleagues, share expertise and perspectives, and influence the companies that provide products and services. The Users Group is your connection to expert users of Data General products, including AViiON® open systems, CLARiiON® advanced storage solutions, PCs, and ECLIPSE® MV/Family systems. Getting just one solution from a fellow member can more than pay for the cost of belonging to NADGUG. To join or for more information, call 1-800-253-3902, extension 1222, or 508-443-3330, extension 1222.

End of Preface

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Chapter 1 – Getting started

Chapter 2 – System features

Chapter 3 – Installing SCA hard drives

Chapter 4 – Troubleshooting

Chapter 5 – Configuring the AViiON AV 3600R

Chapter 6 – Using SCM commands and menus

Appendix A – Specifying boot paths for the DG/UX operating system

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1 Getting started

This chapter describes how to do the following:

- Prepare the installation area and inspect the product carton's contents
- Connect peripherals to the AViiON® AV 3600R
- Power up the system and boot the operating system

Before you assemble your system

Before you unpack the product carton and assemble your system, prepare the area where you will install it and inspect the contents of the product carton.

Preparing the installation area

Do the following before you unpack the product carton:

1. Prepare a clean, flat, and firm surface or area for your computer. Allow at least three inches at the rear of the chassis for cabling and air circulation.

2. Protect your computer from extreme temperature and humidity. Do not expose it to direct sunlight, heater ducts, and other heat-generating objects.

3. Keep your system away from equipment that generates magnetic fields. Even a telephone placed too closely to the system may cause interference.

4. Use a 3-prong, 115-volt or 230-volt (depending on the voltage supplied in your locality) ac surge control outlet station. A surge control station protects against ac line spikes. The minimum system configuration requires two outlets, preferably on a separate circuit.

5. If you want to use remote service features such as AV/Alert^sm for the DG/UX® operating system or NTAlert^sm for Windows NT®, you may need to dedicate a phone line to your computer modem.

Inspecting the contents

The AV 3600R system includes the following standard components:

- AV 3600R chassis with:
    - CD-ROM
    - 3.5-inch diskette drive
    - LAN controller
    - SCSI controller
    - Video controller
    - TSB
    - FAX modem (U.S. only)
- power cable
- keyboard
- mouse
- diskettes for system configuration and system diagnostics
- manuals for operating, expanding, maintaining, and configuring the computer

Keys for the hot-swap cage are attached to the front of the chassis.

Check the packing list and make sure that all equipment and manuals are in your shipment. Inspect everything carefully. If an item is missing or has been damaged from shipping, contact Data General immediately as detailed in the preface of this manual.

Connecting peripherals

This section tells you how to connect a keyboard, video monitor, and power cable to the AV 3600R.

To connect peripherals to the AV 3600R, refer to Figures 1–1 and 1–2 and do the following:

1. Connect the keyboard plug to the keyboard port.

2. Connect the mouse plug to the mouse port.

3. Connect the video monitor cable to the video adapter.

4. Connect the monitor power cable to an outlet.

CAUTION   *Make sure you set all voltage selector switches to the correct*
           voltage. If you set them to the wrong voltage, you may cause
           permanent damage to your system.

5. Connect the system power cable(s) to the power connector on the rear of the chassis.

6. Connect the other end of the system power cable(s) to the cabinet's outlet. We recommend that you plug each power supply cable into an outlet on a separate circuit, if one is available.

7. Data General has installed and configured an internal modem in systems going to North American customers. Connect the internal modem to the dedicated phone line.

   IMPORTANT Powerup diagnostics will not detect the keyboard and VGA controller if they are not properly connected. The system BIOS will bypass the video monitor and send console output to COM1 instead. Sending console output to COM1 (labeled as serial port 1) is called *COM1 redirection*.
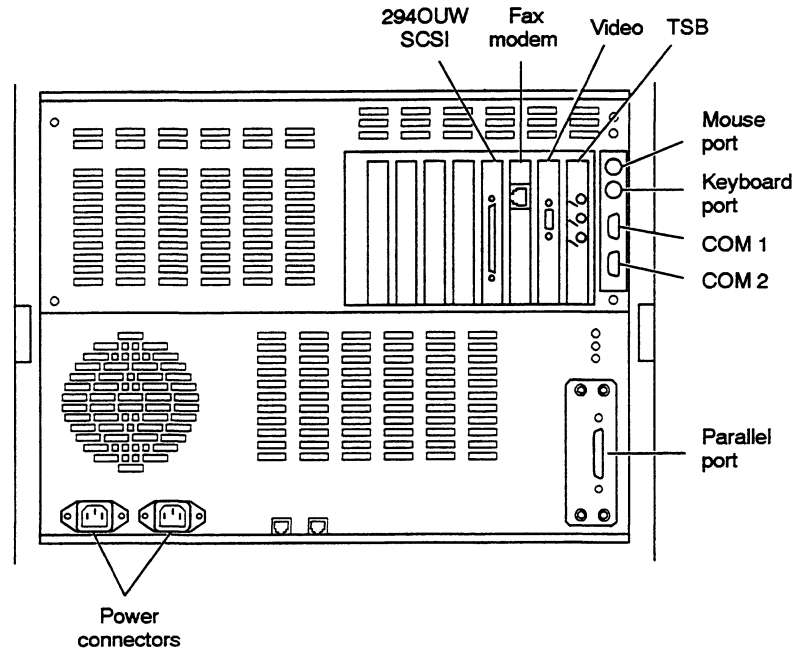
Figure 1-1   AV 3600R, rear view
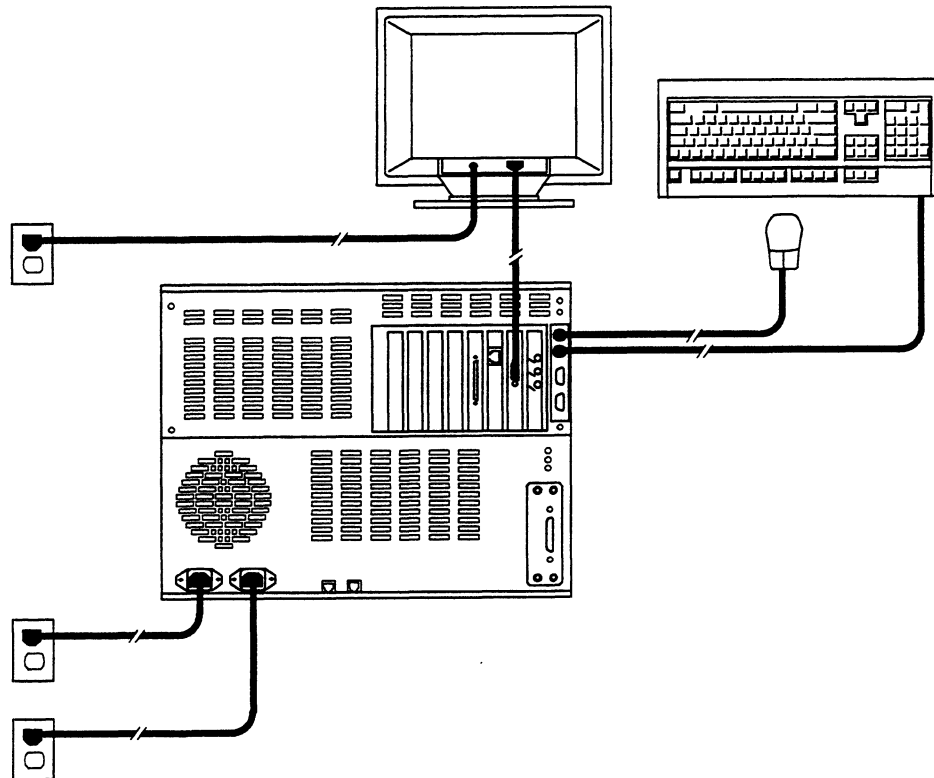
Figure 1-2   Connecting peripherals

Powering up the system

Before you power up the AV 3600R, check the voltage selection switch on the system's power supplies. Switches should reflect the correct source voltage (115 V ac or 230 V ac).

CAUTION   *If you set the system's voltage selection switches to the wrong voltage, you may cause system failure and permanent system damage.*

To power up the system, do the following:

1. Turn the cabinet's primary circuit breaker off (see Figure 1-3).

2. Turn on the monitor and any additional devices or drawers that are installed in the cabinet or connected to the CPU drawers.

3. Set the AV 3600R power switch to ON (see Figure 1-3). You access the power switch by inserting a small blunt instrument through an access hole in the front panel. Press the power switch to turn on the power.

    IMPORTANT   Under normal circumstances, you should use the cabinet's primary circuit breaker (Figure 1-3) to turn system power off and on, not the power switch.

1-4
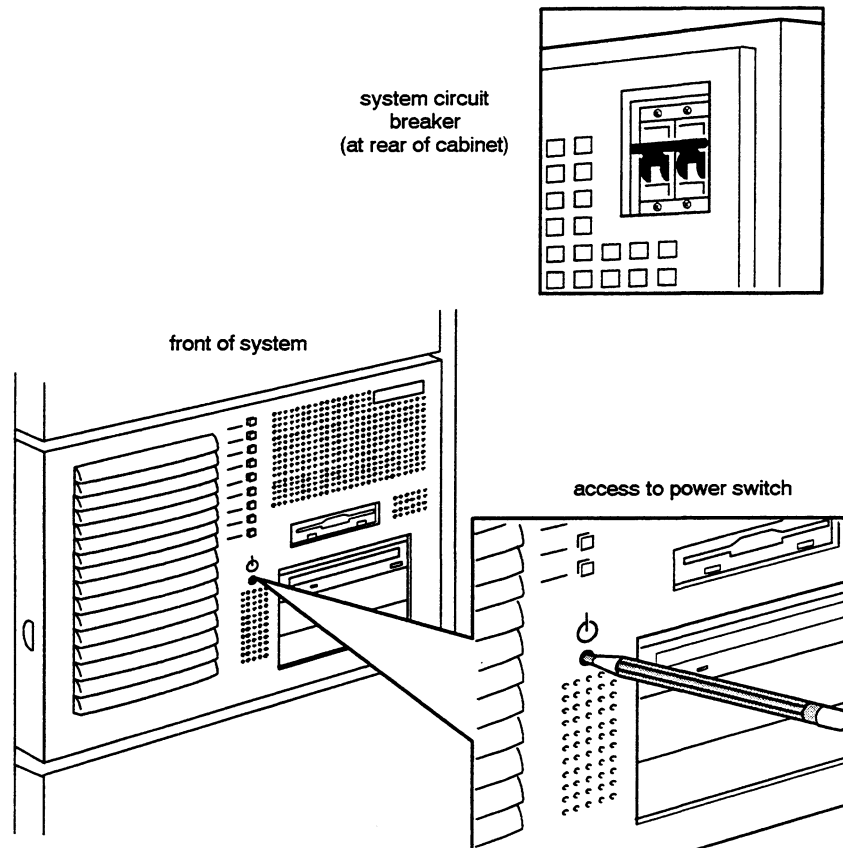
Figure 1-3 Powering up the system

4. Turn the cabinet's primary circuit breaker on. The green LED on the front panel of the AV 3600R tells you the system is on.

Each time you supply power to the system, a series of diagnostic tests (powerup diagnostics) in the computer firmware makes sure that its hardware components are functioning properly. The system begins by displaying test messages that tell you about the processors, system bus, and random access memory (RAM). *Allow your computer system to complete all powerup diagnostics. Completing all tests could take several minutes.* If powerup diagnostics display an error message, refer to Chapter 4, "Troubleshooting," for solutions to common problems.

When it has completed powerup diagnostics, the computer looks for an operating system.

Operating system options

Data General certifies, supports, and offers the following operating systems on the AV 3600R, with their corresponding remote service and diagnostic tools:

- DG/UX System Release 4.11MU03.S01 or greater
- Windows NT® Advanced Server 3.51 and 4.0
- SCO UnixWare® 2.10 and above
- Novell® NetWare® 4.11 and IntranetWare 4.11
- SCO® Open Server 5.0

The following operating systems can run on the AV 3600R:

- Novell® NetWare® 3.1x, 4.x, and 4.1 SMP
- SCO® UNIX 3.2.4.2
- SCO® UNIX ODT 3.0

    IMPORTANT SCO UNIX versions 3.2.4.2 and ODT 3.0 need MPX 3.0 and APIC Driver 1.0 to support more than one processor.

- IBM OS/2 2.11 SMP and 3.0 Warp
- Windows NT® Workstation 3.51
- Microsoft MS–DOS® 6.2X (single-processing only)
- Microsoft Windows 95 (single-processing only)
- Microsoft Windows® 3.11 (single-processing only)

Note that the I/O controllers that your system uses will significantly affect the operating system.

   IMPORTANT The Pentium® Pro chip featured in this system is designed to support 32-bit operating systems and applications. To ensure optimum system performance, use only 32-bit programs on the AV 3600R.

Booting the operating system

This section describes the TSB (exTended Service Board) and how it affects the boot process. It also tells you how to boot the Windows NT® operating system.

What are the TSB and SCM?

Your AV 3600R has a TSB (exTended Service Board). The TSB contains diagnostic and configuration firmware (microcode) called the System Control Monitor (SCM).

When you power up the computer, the TSB firmware performs extensive diagnostics on your system. When all powerup diagnostics are complete, the computer looks for the operating system. It either automatically boots the operating system or displays the SCM prompt:

```
SCM86>
```

The computer displays the SCM prompt if autoboot is disabled or if it cannot find an operating system. Chapter 6, "Using SCM commands and menus," gives detailed information about the System Control Monitor. SCM menus and commands let you enable autoboot and change many other parameters.

When autoboot is enabled, the computer displays a message like the following when it has completed powerup diagnostics:

```
Autoboot is enabled. Continue to boot? [y]/n [10]
```

If you want the computer to stop booting the operating system and enter the System Control Monitor, type **n** before it counts down to 0. If you don't type a response, the computer continues to boot the operating system.

> **IMPORTANT** If your system includes the DG/UX, Windows NT, UnixWare, NetWare, or Open Server operating system on a properly attached disk and you do not wish to bring up the operating system at this powerup, you can also execute the **<Ctrl-C>** sequence from your system console keyboard *before the autoboot sequence completes*. (Do not enter **<Ctrl-C>** until *after* your system passes powerup diagnostics and displays the Data General Corporation copyright.) Exiting the autoboot before it executes will bring your computer system to the SCM prompt.

Booting the DG/UX operating system

The computer's TSB boots the DG/UX operating system from a tape, hard drive, CD–ROM, or LAN. To tell the computer to look for DG/UX on one of these devices, you must enter a boot path in the SCM. Appendix A shows you how to specify a boot path, and Chapter 6, "Using SCM commands and menus," shows you how to enter boot paths in the SCM. If it cannot find the operating system, the computer displays the SCM prompt. See DG/UX documentation for details.

Booting the Windows NT operating system

The computer's BIOS boots the Windows NT® operating system. It looks to the diskette drive first; if it does not find the operating system, it looks to the hard drives or CD–ROM.

If you have already loaded your operating system onto a hard drive, the computer automatically begins loading the operating system after powerup diagnostics have finished. If it cannot find the operating system, the computer displays the SCM prompt. See the Windows NT documentation for details.

Booting the UnixWare, NetWare, or Open Server operating system

The computer's BIOS boots the UnixWare, NetWare, or Open Server operating system. It looks to the diskette drive first; if it does not find the operating system, it looks to the hard drives. If it cannot find the operating system, the computer displays the SCM prompt. See UnixWare, NetWare, or Open Server documentation for details.

> **IMPORTANT** When you have installed multiple hard drive host bus adapter cards, the order of the boot sequence depends on I/O slot positions, as discussed in Chapter 2, "System Features."

End of Chapter

2 System features

This chapter describes AViiON AV 3600R basic architecture and hardware management, gives an overview of the computer chassis, and describes the computer's system board.

Basic architecture and hardware management

The AV 3600R uses Symmetric Multi-Processing (SMP) technology; up to four central processing units (CPUs) in the system can service interrupts, access system memory, and perform I/O operations. If your operating system does not support SMP, the system adjusts the processing mode to asymmetrical, meaning only the first CPU accepts I/O interrupts.

The computer has dual Peripheral Component Interface (PCI) Input/Output (I/O) busses, which support up to four high-speed Pentium Pro processors, and EISA I/O for limited use of older controllers and system management functions. Your system can have up to 2 Gbytes of Error Checking and Correction (ECC) RAM. The block diagram in Figure 2-1 shows how AV 3600R components communicate.
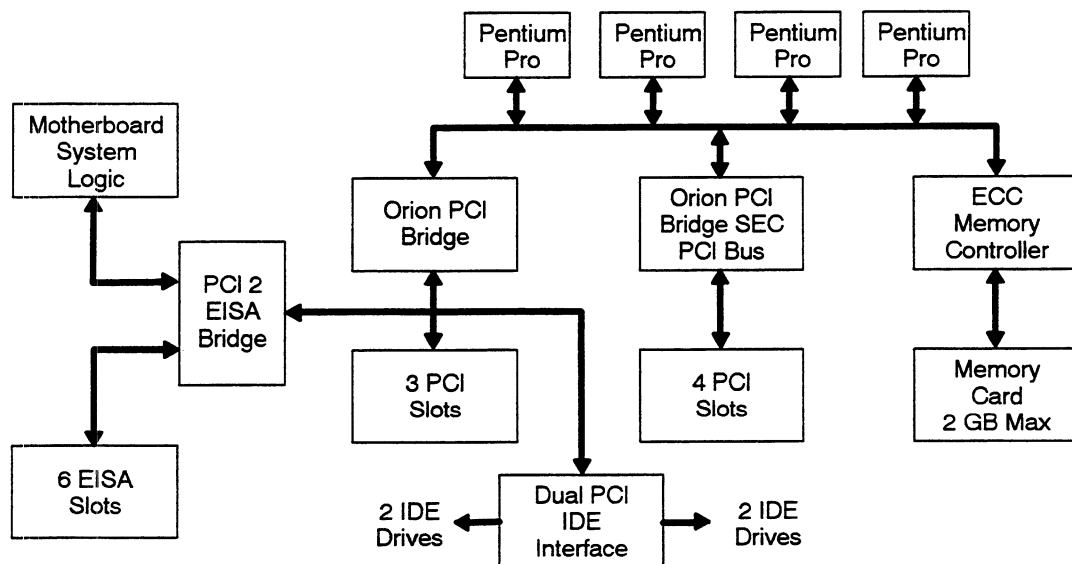
Figure 2-1 AV 3600R system architecture

2-1

Overview of the AV 3600R chassis

This section describes the features of the chassis front and rear panels, and the features of the system motherboard.

Front panel features

Figure 2-2 shows the AV 3600R chassis front panel features.
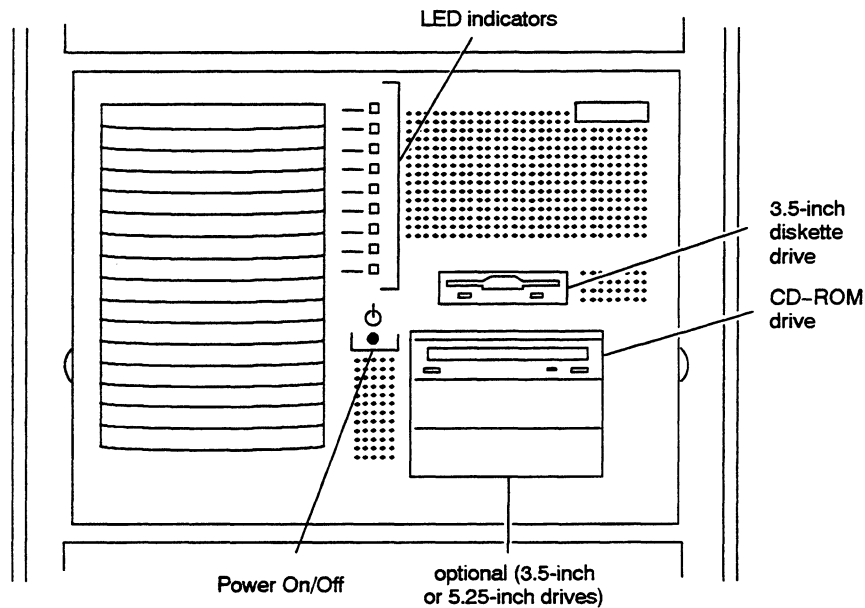
Figure 2-2   Front panel features

Front panel features include:

- **Power On/Off switch** — This switch is accessible by inserting a small blunt instrument through the access slot in the front panel. Push the switch in once to power the system ON and push it in again to power the system OFF.

    IMPORTANT   Under normal circumstances, you should use the cabinet's primary circuit breaker to turn system power off and on, not the power switch.

- **LED indicators** — These indicators signal a specific message when illuminated. Table 2-1 describes what each illuminated LED means. The LEDs are listed in the order they are located on the front panel (PWR on top, RESERVED on bottom).

Table 2-1   LED status

LED	Meaning (when illuminated)
PWR	Power is ON.
MEM FAULT	A correctable error has been detected in memory. Press the MEM FAULT switch to clear the memory fault.
PWR FAULT	A power supply fault has been detected. Press the PWR FAULT switch to turn off the alarm. Refer to Chapter 4, "Troubleshooting," for information on troubleshooting power supply problems.
DISK	The disk is active.
CPU 1	CPU 1 is active.
CPU 2	CPU 2 is active.
CPU 3	CPU 3 is active.
CPU 4	CPU 4 is active.
RESERVED	Not used.

- **Reset switches** — Once you remove the front panel as shown in Figure 2–3, you can access the System, Memory, and Power Supply Alarm Reset switches by inserting a small blunt instrument through the access slot in the mounting plate. Push the appropriate switch in to reset the condition (see Figure 2–4).

    - **PWR switch** — Pressing this switch resets the AV 3600R system.

    - **MEM switch** — Pressing this switch resets a memory fault.

    - **PWR FAULT switch** — Pressing this switch resets a power supply fault.

front of system

press ➡ ⬅ press
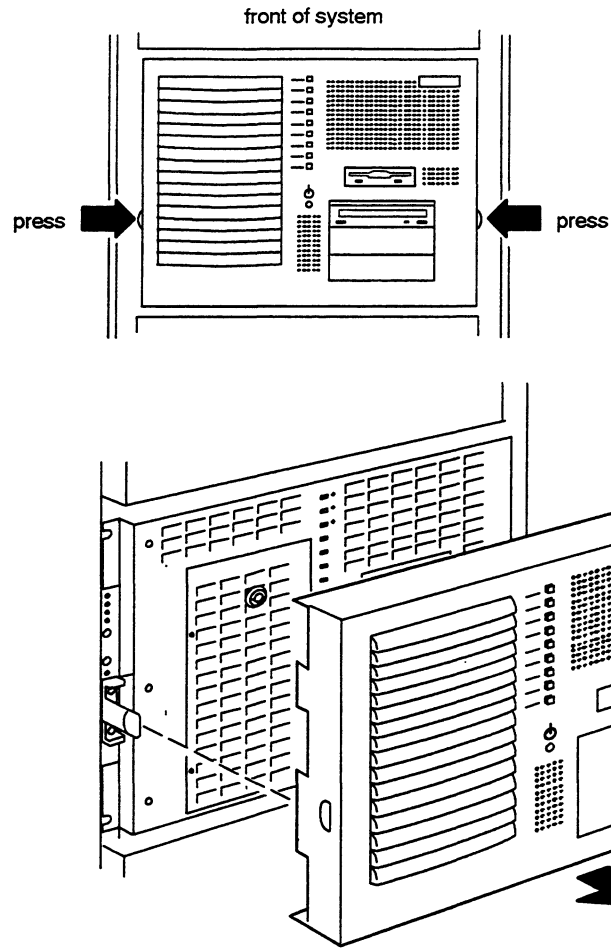
Figure 2-3 Removing the front panel

use paper clip to access
reset switches

front of system

PWR

MEM
FAULT

PWR
FAULT
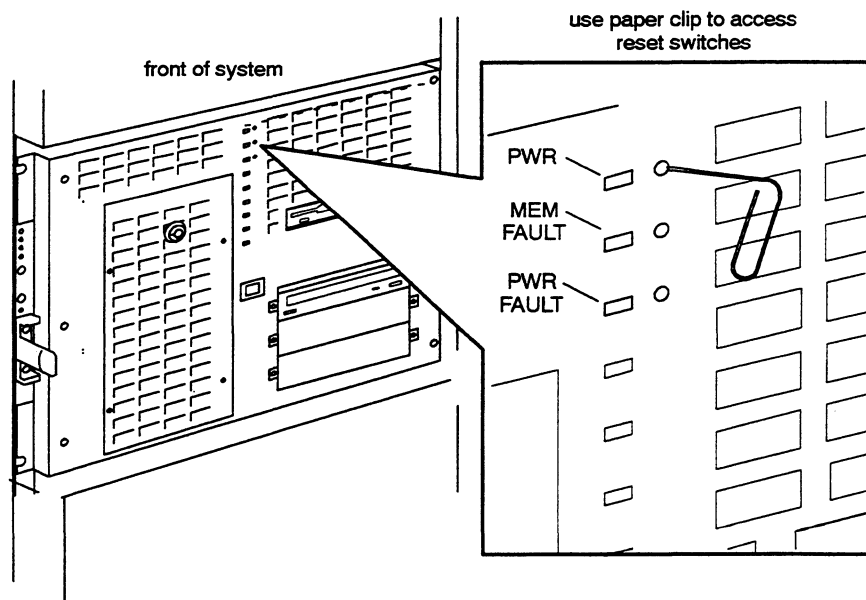
Figure 2-4 Reset switches

Rear panel features

The rear panel (or bulkhead) contains the I/O ports, connectors, and switches of the AV 3600R chassis (see Figure 2–5). You may have additional features depending on your system's configuration.
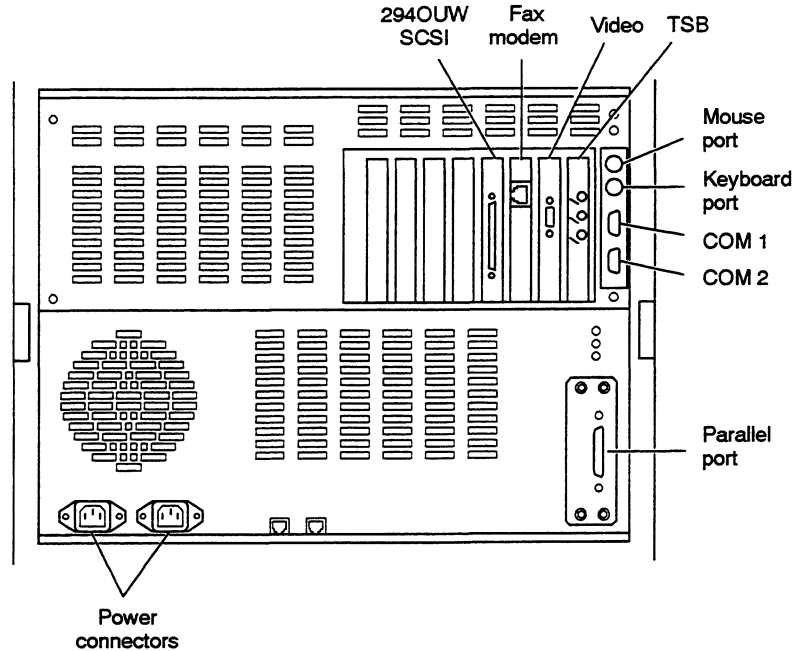
Figure 2–5 Rear panel features

The features on the rear panel are the following:

- **COM 1 and 2** — 16550 Universal Asynchronous Receiver Transmitter (UART), high-speed serial ports that use the First-In First-Out (FIFO) protocol. You can connect serial devices such as a mouse, non-graphics monitor, serial printers, or modems to these ports.

    IMPORTANT COM 1 is reserved for use with an auxiliary system console. Refer to Chapter 6, "Using SCM commands and menus," for information on using the auxiliary system console.

- **Parallel port** — lets you connect devices such as parallel printers or scanners.

- **Mouse port** — lets you connect a mouse with a circular miniature DIN (mini-DIN) connector.

- **Keyboard port** — lets you connect any keyboard with a circular miniature DIN (mini-DIN) connector.

- **Two ac-in power sockets** — one for each redundant power supply; each power supply must be connected with its own power cable to an ac outlet or a surge control station.

- **exTended Service Board (TSB)** — described in Chapter 4, "Troubleshooting," contains diagnostic firmware. It allows Data General personnel to test your system's hardware components remotely, in addition to other important features.

- **Fax Modem** — the external communication device that lets Data General support personnel remotely access your computer's TSB (for DG service use only).

- **SCSI host bus adapter** — allows your computer to communicate with SCSI devices.

- **Video card** — allows your computer to display PC graphics to the monitor.

System board

The system board functions as the main interface between the CPUs, memory, and peripherals.

Processors

The system board supports up to four 200 MHz Pentium Pro central processing units (CPUs). The Pentium Pro CPUs have 512-Kbyte, second level cache and machine check architecture (MCA).

Voltage regulator modules (VRM)

Each CPU has a dedicated voltage regulator module (VRM), which adjusts its voltage supply. The VRM is specially designed to meet Pentium Pro requirements.

Memory

The AV 3600R has a minimum of 64-Mbytes, 4-way interleaved random access memory (RAM). You can upgrade system memory to 2-Gbyte Error Checking and Correction (ECC) RAM.

Subsystem architecture

The single in-line memory module (SIMM) memory board, shown in Figure 2-6, contains random access memory (RAM).
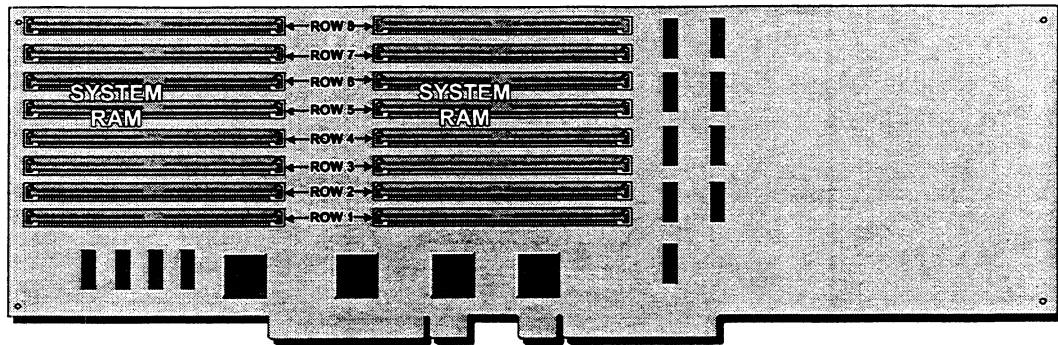
Figure 2-6   SIMM memory board

Error Checking and Correction (ECC)

ECC is a powerful feature of RAM that detects and corrects memory errors as they occur.

- **Correctable errors** — occur when a single bit out of 72 bits has failed. In this condition, the system will continue to function.

- **Non-correctable errors** — occur when two or more of 72 bits have failed. In this condition, the system will stop operating.

When a correctable error occurs, the Fault LED illuminates. To allow ECC to continue monitoring RAM for errors, reset the system memory.

Expansion slots

The AV 3600R system board has two PCI slots, five shared PCI/EISA slots. and one EISA slot. All PCI slots support bus-mastering capabilities. All EISA slots support EISA bus-mastering. Boot priority for SCSI controllers goes from top to bottom as shown in Figure 2-7.
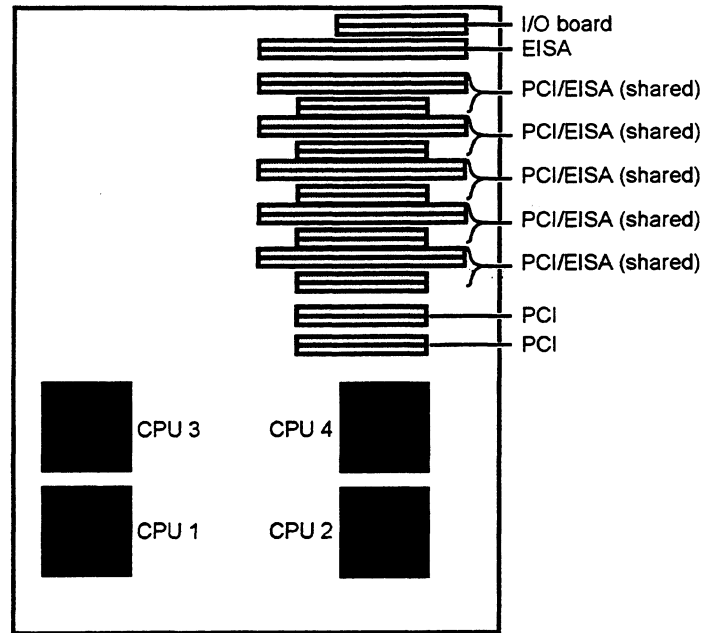
Figure 2-7   System board slots

EISA slots

EISA slots are for server management devices that use the EISA or ISA
bus, such as internal modems, the exTended service board (TSB), and some
older I/O devices. We do not recommend EISA slots for high-performance
functions.

PCI slots

Three of the PCI slots are for I/O controllers that use the primary PCI bus
and four are I/O controllers that use the secondary PCI bus. Each bus has
a separate path to the main system bus. The primary bus shares its path
with all EISA slots. We recommend that high-performance controllers, such
as SCSI controllers for disk devices, use the secondary bus. The video
controllers are on the primary bus.

Power supply

The AV 3600R has two redundant 575-watt power supply modules and a
load share module that supply the necessary voltage for the system's logic
(electronic components) as well as its storage media (disks, tape drives, and
CD-ROMs). If one power module fails or loses power, an audible alarm
alerts the operator that a power supply module has failed, while the
remaining power supply module continues to supply power to the CPU
drawer.

The power supply delivers the following dc outputs:

- 5 V @ 65 A

- 12 V @15 A

- +3.3 V @ 15 A

- -5 V @ 0.5 A

- -12 V @ 0.5 A

Drive bays

In addition to the standard 3.5-inch diskette drive and CD-ROM, the AV 3600R supports as many as two internal 3.5-inch or 5.25-inch drives. All 5.25-inch drive bays are for removable media devices such as tape and diskette drives. You can have a 3.5-inch device installed in a 5.25-inch bay with a special bracket Data General provides with all 3.5-inch devices. Figure 2-8 shows the AV 3600R drive bays.
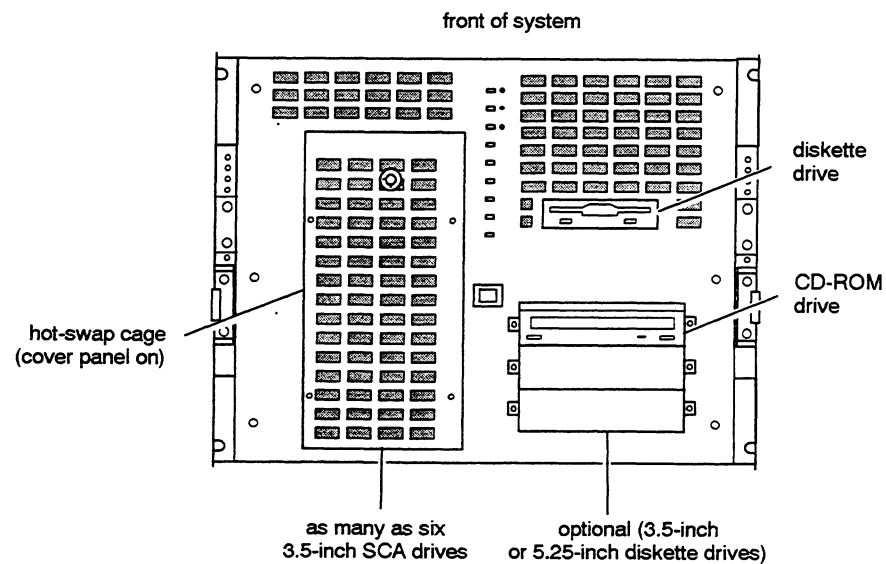
Figure 2-8 Drive bays

The computer has a hot-swap cage, which supports six 1-inch or 1.6-inch high 3.5-inch SCSI drives. SCA drives are potentially *hot-swappable* (you can remove or insert them without powering down the computer), depending on your computer's operating system. See your operating system documentation for more detail.

End of Chapter

3 Installing SCA hard drives

This chapter explains how to attach mounting rails to the AViiON
AV 3600R chassis and install an SCA hard drive into the hot-swap cage.

Before you begin

Before you perform any work on the AV 3600R, read the following sections
about electrostatic discharge damage and emergency procedures without an
ESD kit.

Avoiding electrostatic discharge (ESD) damage

The cover(s) and filler panel(s) on your equipment protect the electronic
circuits inside the equipment from electrostatic discharge (ESD) damage.
However, when you remove these covers and filler panels to replace or
install subassemblies, you can inadvertently damage the sensitive
electronic circuits in the equipment by simply touching them. Electrostatic
charge that has accumulated on your body discharges through the circuits.
If the air in the work area is very dry, running a humidifier in the work
area will help decrease the risk of ESD damage. You must follow the
procedures below to prevent damage to the equipment.

CAUTION   *Read and understand the following instructions before you remove the
cover(s) or panel(s) from the equipment.]*

- Provide enough room to work on the equipment. Clear the work site of
  any unnecessary materials or materials that naturally build up
  electrostatic charge, such as foam packaging, foam cups, cellophane
  wrappers, and similar materials.

- Do not remove replacement or upgrade subassemblies from their
  antistatic packaging until the exact moment that you are ready to
  install them.

- Gather the tools, manuals, the ESD kit that came with your AV 3600R,
  and all other materials you will need before you remove covers and
  panels from the equipment. Procedures for removing subassemblies
  usually list required materials at the beginning. After you remove a
  cover or panel, you should avoid moving away from the work site;
  otherwise, you may build up an electrostatic charge.

- Use the ESD kit when handling circuit boards or when touching the
  electronic circuits inside the equipment. If you did not receive one with
  your shipment, contact Data General, as described in the preface of this
  manual. If an emergency arises and an ESD kit is not available, follow
  the procedures in the "Emergency procedures (without an ESD kit)"
  section.

- Replace the cover(s) or panel(s) on the equipment as soon as possible so that the electronic circuits are protected.

- If the equipment has an opening for an optional device (such as a mass-storage drive), and the device is not installed, make sure a filler panel is installed in the opening before connecting the equipment to the ac power outlet.

Emergency procedures (without an ESD kit)

In an emergency when an ESD kit is not available, use the following procedures to reduce the possibility of an electrostatic discharge by ensuring that your body and the subassembly are at the same electrostatic potential.

CAUTION   *These procedures are not a substitute for the use of an ESD kit. Follow them only in the event of an emergency.*

- Before touching any electronic circuits or boards inside the equipment, firmly touch a bare (unpainted) metal surface of the equipment.

- Before removing any replacement or upgrade subassembly from its antistatic bag, place one hand firmly on an unpainted metal surface of the chassis, and at the same time, pick up the replacement or upgrade subassembly while it is still sealed in the antistatic bag. Once you have done this, do not move around the room or contact other furnishings, personnel, or surfaces until you have installed and secured the subassembly in the equipment.

- Remove the subassembly from the antistatic bag, handling printed circuit boards by the edges. Avoid touching components and circuits on a printed circuit board.

- If you must move around the room or touch other surfaces before securing the subassembly in the equipment, first place the subassembly back in the antistatic bag. When you are ready again to install the subassembly repeat these procedures.

Installing SCA hard drives

The hot-swap cage accommodates up to 6 half-height (1.6-inch) or low-profile (1.0-inch) drives (see Figure 3–1). Drives are hot-swappable (you can remove one and replace it with another while the AV 3600R is still powered up).
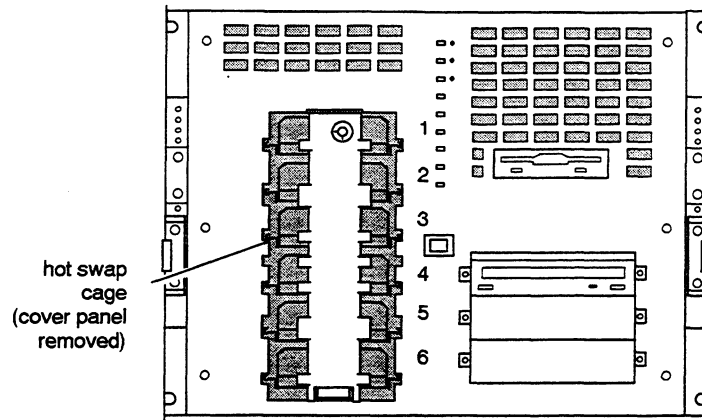
Figure 3-1   Hot-swap cage location

Do the following to install the drive:

1. Attach mounting rails to the drive as shown in Figure 3-2.
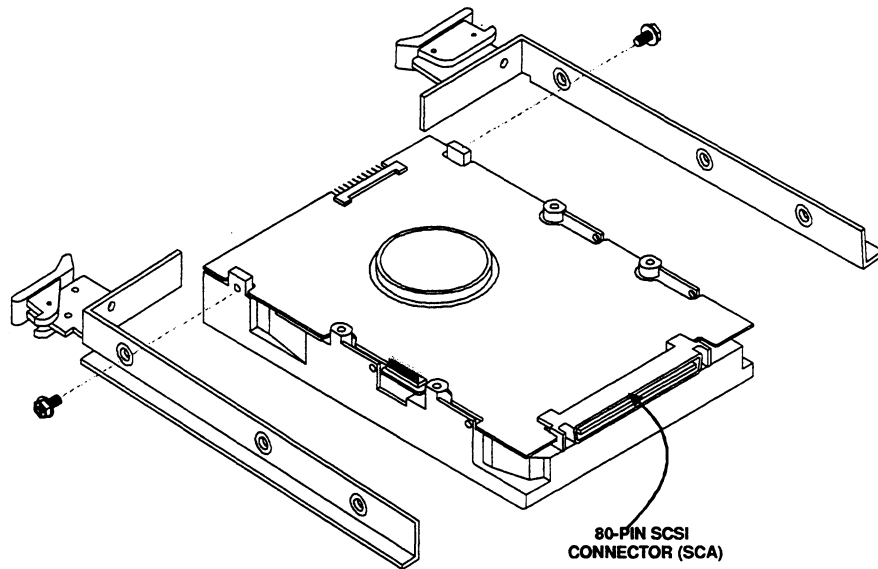
(3 places)

Figure 3-2   Attaching mounting rails, bottom view

2. Remove the cover plate as shown in Figure 3-3.
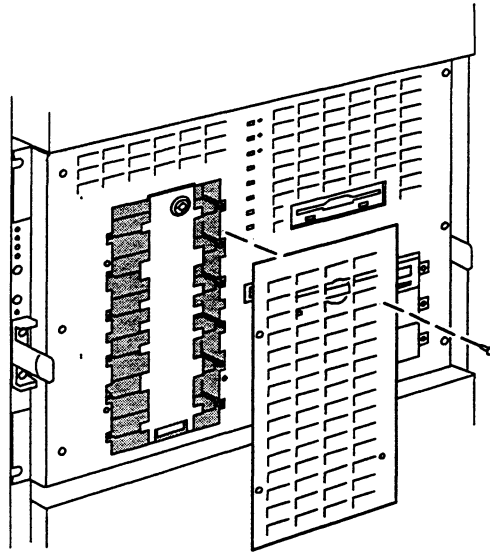
Figure 3-3   Removing the cover plate

3. Insert the key into the drive lock. Push in and turn clockwise to unlock as shown in Figure 3-4.
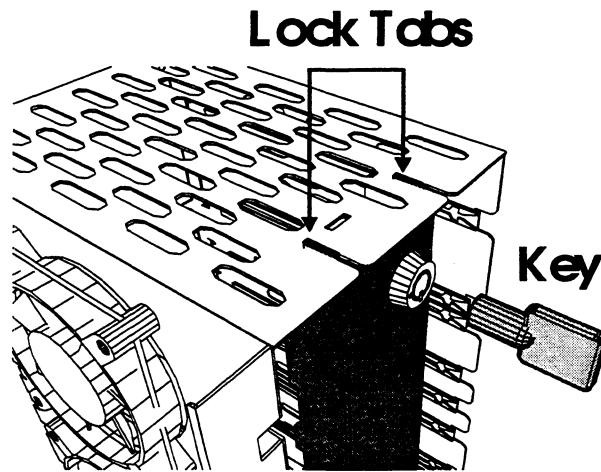
Figure 3-4   Unlocking the drive

3-4

4. Swing the lock out and away from the hot-swap cage as shown in Figure 3-5.
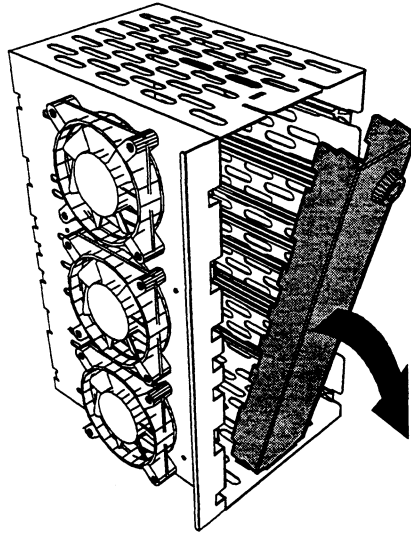
Figure 3-5   Opening the lock

5. Remove the base of the lock from the hot-swap cage by pulling it up and out from the bottom of the hot-swap cage as shown in Figure 3-6.
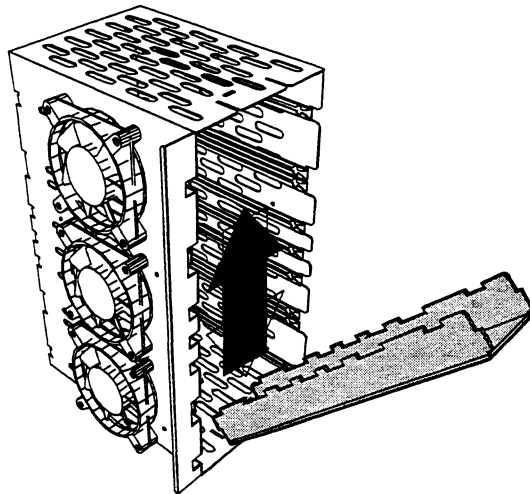
Figure 3-6   Removing the base of the lock

6. Starting at SCSI ID 0 (the bottom bay on the front panel), unlock the drive's latching clips by swinging them out (see Figure 3–7). Install drives in ascending order, starting at the bottom bay.

Open latches as shown above

Slide drive out of cage
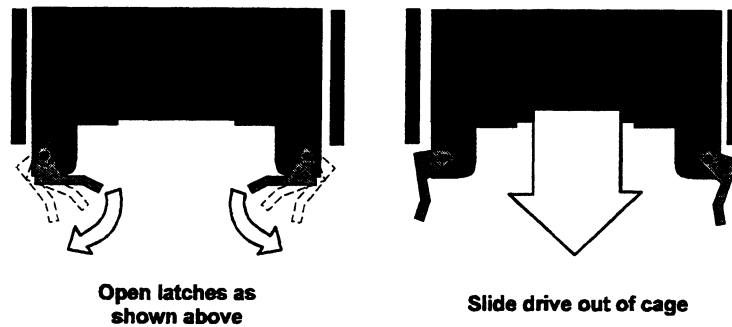
Figure 3–7   Unlocking and removing the drive from the hot-swap cage

7. You do not need to set jumpers for SCSI IDs; the slot where you installed the SCA hard drive determines its SCSI ID, as shown in Table 3–1.

Table 3–1   Hot-swap cage bays and SCSI IDs

Drive cage slot (starting at top)	SCSI ID
1	6
2	4
3	3
4	2
5	1
6	0

The CD–ROM drive and the drives in the hot-swap cage use the SCSI host bus adapter (or SCSI adapter) in the AV 3600R chassis.

For information about boot device naming for the DG/UX operating system, see Appendix A.

8. Align drive rails with hot-swap cage guides as shown in Figure 3-8.
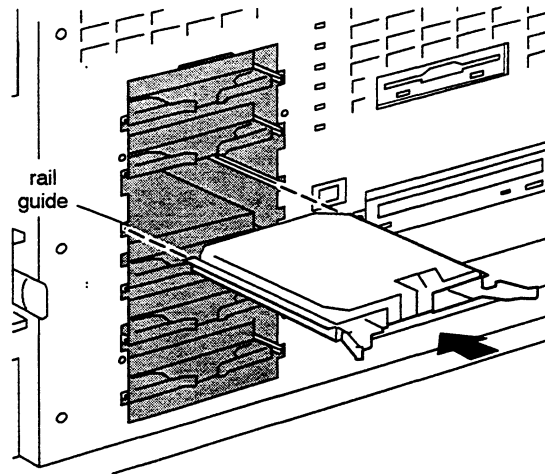
Figure 3-8   Aligning guide rails with the hot-swap guides

9. Push the device completely into the slot.

10. Once the drive is seated into the cage, close the latching clips until they lock into place, as shown in Figure 3-9.

Slide drive completely into cage   **Close latches as shown above**
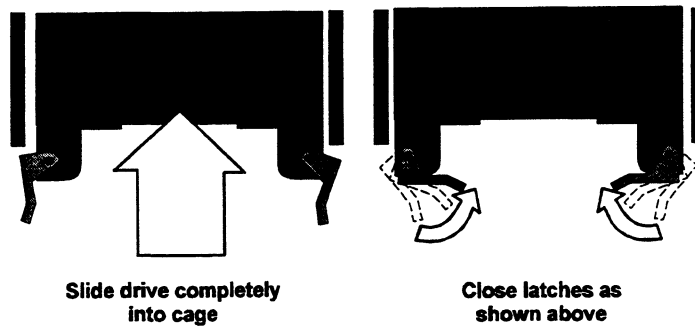
Figure 3-9   Installing drive into hot-swap cage

11. Insert the base of the lock into the notch at the bottom of the hot-swap cage as shown in Figure 3-10.
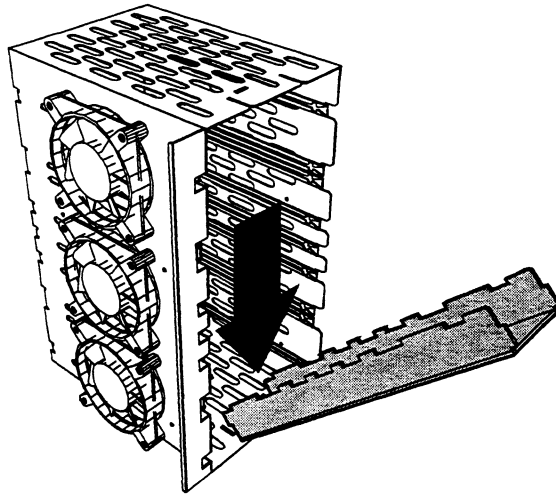
Figure 3-10 Inserting the base of the lock

12. Tilt the lock up and slide the top two tabs into the matching notches at the top of the hot-swap drive cage, as shown in Figure 3-11. Make sure that the lock tabs are inserted all the way back in their notches.
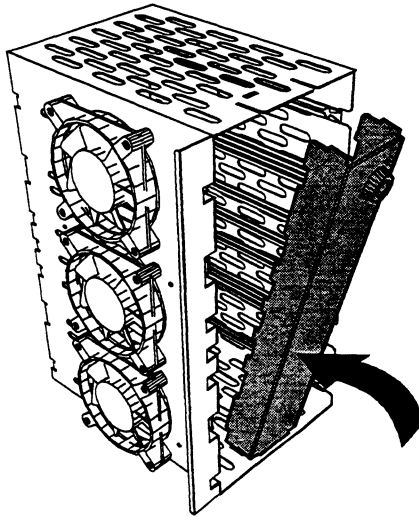
Figure 3-11 Sliding tabs into the matching notches

13. Insert the key into the lock. Push and turn counter-clockwise to lock as shown in Figure 3-12.

Lock Tabs

Key
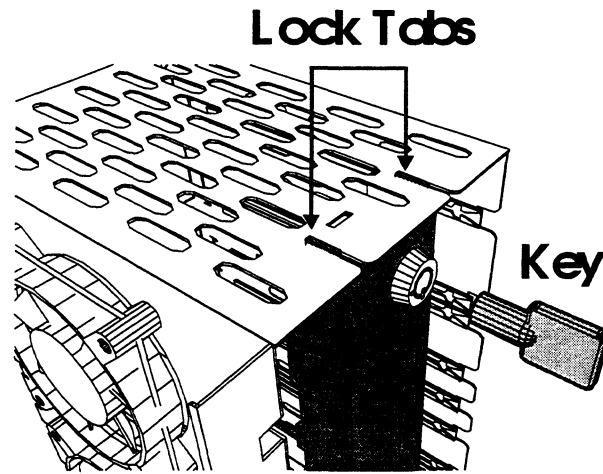
Figure 3-12 Locking the drive

End of Chapter

4 Troubleshooting

This chapter lists common operating problems and suggests how to solve them. It explains how the TSB (exTended Service Board) enhances AViiON AV 3600R diagnostics and it also tells you about the diagnostic tools you can use to troubleshoot hardware problems.

Looking things over

If you are having problems with your AV 3600R, verify the following:

1. Are the power cords connected to the AV 3600R and an outlet?

2. Is the outlet supplying power?

3. If a power strip is used, is it switched ON?

Verifying your system configuration

If your system is not operating correctly, the BIOS may contain an invalid configuration parameter. Enter the BIOS program and verify your configuration settings.

Solving common operating problems

Tables 4–1 through 4–5 show a list of problems, the probable cause of the problem, and the solution. If you are unable to solve the problem, contact Data General as outlined in the preface of this manual.

Table 4-1   Power problems

Problem	Probable cause	Solution
The system will not power ON.	The system is not connected to an ac outlet.	Make sure the power cables are connected to an ac power source.
	The voltage selection switch is not set correctly.	Verify that both the voltage-selection switches reflect the correct power source.
The system does not display the date and time correctly or at all.	The date and time parameters in BIOS Setup may be set incorrectly.	Enter the BIOS Setup program and correct the date and time settings.
	The backup battery may need to be replaced.	Contact Data General for assistance.
The PS FAULT LED is ON and power supply alarm sounds.	A redundant power supply has failed.	Press the Power Supply Alarm Reset switch and contact Data General.

Table 4-2   Memory faults

Problem	Probable cause	Solution
MEM FAULT LED is ON.	The system has corrected a memory error. If problem occurs several times, contact Data General.	Press the Memory Fault Reset switch. If the light remains lit, contact Data General as detailed in the preface of this manual.

Table 4-3   Drive problems

Problem	Probable cause	Solution
The system will not boot after the self-test completes.	The hard disk is not formatted.	Boot from a diskette; then format the hard drive.
	A boot file was not found.	Try booting from a bootable disk.
	IDE disk parameters in BIOS Setup are incorrect.	Enter the BIOS Setup program and check the parameters.
The diskette LED is on, but files cannot be accessed.	The diskette was loaded incorrectly.	Remove the diskette and load it properly into the drive.
	The diskette is damaged.	Run CHKDSK or SCANDISK (DOS) or another disk-verification utility to determine the disk's integrity.
	The file is corrupted (bad).	Try the diskette on another computer. Recopy the file if necessary.
Files cannot be written to the disk or diskette.	The disk is write-protected.	Remove the write-protect tab or switch from the disk.
	The wrong drive letter was specified.	Verify that the drive LED is on when you issue the write command. If not, try another drive letter.
	The disk is not formatted.	Format the disk.
Insufficient space on the drive.	The drive you are trying to write to is full.	Remove files from the disk or write to another device.
A file cannot be read from the disk or diskette.	The wrong drive letter was specified.	Verify that the drive LED is on when you issue the write command. If not, try another drive letter.
	The disk is not formatted.	Format the disk.

Table 4-4   Installation problems

Problem	Probable cause	Solution
A drive is not recognized by the system.	The BIOS Setup program reflects the wrong parameters.	Enter the system or SCSI BIOS Setup program and enter the appropriate parameters for the device.
	The device is not formatted.	Format the device.
	The device controller is not configured properly.	Call Data General.
Memory errors were detected during the power-up sequence.	Memory was added or removed, and the new configuration was not saved in BIOS Setup.	Enter the BIOS Setup program and save the new memory configuration.
	A memory SIMM was installed incorrectly.	Call Data General.
	A memory SIMM is not functioning properly.	Call Data General.
A new CPU is not recognized by the system during powerup.	The operating system fails to size the new CPU.	Reload the operating system or multi-processor drivers.

Table 4-5   Operating system problems

Problem	Probable cause	Solution
Keyboard output to console does not match the characters typed.		For a computer running DG/UX, you can correct this problem in two ways:
		1. By changing the NOVRAM as follows. You must enter the following commands on the same line (or a continuation line as shown by \):
		admnvram -o set -p -f'sd(apsc(pci(1),d)0)'.
		boot_command-1= "sd(apsc9pci(1),d)0)root -f
		dgux -l 3 -1 FRfr"
		and then reboot.
		2. By booting and specifying the correct language file on the DG/UX boot command, for example
		boot command: **sd(apsc(pci(1),d)0) root -f/**
		dgux -l 3 -1 FRfr
		The language codes are documented in the DG/UX release notice section "Setting the keyboard language(Intel)." Also, you can see the boot(8) man page for on-line documentation of these options.
Time-out errors occur on SCSI devices. Hard errors occur.	The SCSI bus(es) may not be terminated properly.	Verify SCSI termination. For external devices, the SCSI external controller transfer rate is set to 10.0 Mbytes/second. If these errors persist or prevent normal processing, run diagnostics as explained later in this chapter.

Continued

Table 4-5   Operating system problems

Problem	Probable cause	Solution
X11 is not functional.	You cannot run X-Windows on base system's VGA graphics card.	See DG/UX release notes.
DG/UX console output becomes unrecognizable during powerup.	You cannot run X-Windows on base system's VGA graphics card.	See DG/UX release notes.

If you are still having trouble with your system, contact Data General as detailed in the Preface of this manual.

Using the correct diagnostic tool

Figure 4–1 shows the hierarchy of AV 3600R diagnostics; depending on your computer's operating system, you can run the following diagnostic diskettes or programs: QAPlus, In-Service Diagnostics (ISD), or the Hardware Compatibility Test (HCT) .
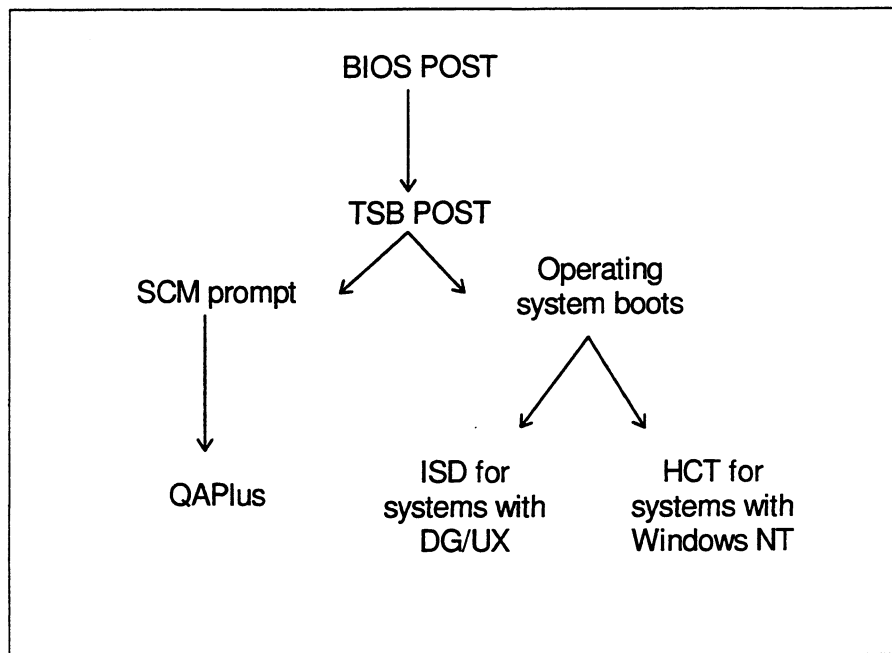
Figure 4–1   The hierarchy of AV 3600R diagnostics

Once you have powered up the computer, the BIOS power-on self-test (POST) automatically tests some of the system hardware components. When the BIOS POST completes, the TSB (exTended Service Board) card automatically begins its POST, which is more extensive than the BIOS POST. When the TSB POST completes, it boots the operating system (DG/UX). If the system is running Windows NT, the TSB passes control to the BIOS, which boots the operating system (Windows NT, UnixWare, NetWare, or Open Server). If the computer does not boot its operating system, the SCM (System Control Monitor) prompt appears.

When your system displays the SCM prompt, you can boot and run the QAPlus diskette. Once your operating system boots, you can run ISD (part of the DG/UX operating system) or HCT (for use with the Windows NT operating system). Table 4–6 tells you when to use each diagnostic tool.

Table 4-6   Using the correct diagnostic tool

Diagnostic tool	When to use it
In-Service Diagnostics (ISD) – part of the DG/UX operating system See AV/Alert and ISD documentation for more information.	Run ISD when the DG/UX operating system is operating and your system displays hardware error messages. ISD performs stress tests on your system's hardware components when they cause intermittent problems. These tests cause the problem component to fail; ISD reports the failed component to the system console and to AV/Alert.
Hardware Compatibility Tests (HCT) – a CD-ROM for the Windows NT operating system Refer to the documentation that comes with the CD-ROM.	Run HCT when the Windows NT operating system is running and your system displays hardware error messages. It performs stress tests on your system's hardware components when they cause intermittent problems. These tests cause the problem component to fail; the HCT displays an error message telling you that a component failed stress tests.
QAPlus – a diskette for all AV 3600Rs Refer to the QAPlus documentation for more information.	For AV 3600Rs with any operating system. Boot QAPlus at the SCM prompt when problems such as the following occur: • the system cannot read or boot from the disk drive • the keyboard or graphics do not seem to work correctly • the system cannot print, or modem and serial port devices do not work correctly • the MEM Fault LED indicates that soft ECC errors have occurred frequently

If you are still having trouble with your system after using these diagnostic tools, contact Data General as detailed in the preface of this manual.

The TSB and AV 3600R diagnostics

Chapter 1 describes the TSB and explains how it affects powerup. It also describes TSB firmware called the System Control Monitor (SCM). Chapter 6, "Using SCM commands and menus," explains system parameters you can change and tells you how to change them.

In addition to the SCM, the TSB also contains diagnostic firmware that automatically deconfigures (bypasses) a hardware component, such as a central processing unit, if it fails. The AV 3600R has a modem that lets Data General support personnel access your computer's TSB. When you have a service contract with Data General and the TSB finds a problem with a hardware component, a machine-initiated (MI) call-out can tell the Customer Support Center that your machine is not functioning properly. For more information about remote service setup, refer to AV/Alert and NTAlert documentation.

End of Chapter

5 Configuring the AViiON AV 3600R

Use the EISA Configuration Utility (ECU) and BIOS Setup to configure (tell the computer what hardware components are in the system so that they can operate together without conflict) the AViiON AV 3600R. The beginning of this chapter tells you when to use the ECU and when to use BIOS Setup. The rest of the chapter describes BIOS Setup menus. Chapter 6, "Using SCM Commands and menus," tells you how to configure exTended Service Board (TSB) features.

Using the ECU

The Extended Industry Standard Architecture (EISA) Configuration Utility is a software utility on a diskette. Data General Field Engineers use the ECU when they add, remove, or move an EISA or ISA (Industry Standard Architecture) card. After they have run the ECU, it writes the changed system configuration to the system BIOS. You may also use the ECU to update BIOS Setup options for the system board.

Using BIOS Setup

BIOS Setup is a factory-installed program in the BIOS chip on the system board. This program stores information about your system configuration and tells the computer what types of devices you have installed. The BIOS Setup program also allows you to customize your system configuration.

Run the BIOS Setup program when you do the following:

- install or remove a peripheral device, such as a SCA drive
- change the display type
- change password or security features
- change memory size or configuration
- change or set the date and time
- configure PCI bus slot features

Entering BIOS Setup

Enter BIOS Setup during powerup diagnostics by pressing <F2> when you see the following prompt:

Press <F2> to enter SETUP

Table 5-1 tells you how to move through BIOS Setup and change BIOS Setup screens.

Table 5-1   Moving through BIOS Setup and changing BIOS screens

Keys	Result
<Esc>	Returns you to the previous menu
<↑> or <↓>	Moves the cursor up or down to the next field
<←> or <→>	Moves through the menus
<-> or <+>	Displays parameter option
<F9>	Loads the factory default values
<F10>	Loads the values that were last saved
<Enter>	Selects the highlighted option
>	If a parameter is preceded by this symbol, then press **<Enter>** to access the option

CAUTION   *Incorrectly setting the BIOS parameters may cause your system to fail or not to boot.*

Main menu

The Main BIOS Setup screen lets you set and change the most common functions. When you enter the BIOS Setup program, you will see the display in Figure 5-1.

```
            PhoenixBIOS Setup - Copyright 1992-95 Phoenix Technologies Ltd.

  MAIN
                                                                    Item Specific Help
      System Time:                    [12:00:00]
      System Date:                    [10/31/1995]
      Diskette A:                     [1.44.MB, 3 1/2"]          (Refer to each
      Diskette B:                     [1.2 MB, 5 1/4"]           parameter for
      Daylight Savings (USA):         [Disabled]                 specific Help
   ▶  IDE Adapter 0 Master (None)                                messages.)
   ▶  IDE Adapter 0 Slave (None)
   ▶  IDE Adapter 1 Master (None)
   ▶  IDE Adapter 1 Slave (None)
      Large Disk DOS Compatibility:   [Enabled]
      Video System                    [EGA/VGA]
   ▶  Memory Cache
   ▶  Memory Shadow
   ▶  Boot Sequence:                  [A: then C:]
   ▶  Numlock:                        [Auto]

      System Memory:                  640 KB
      Extended Memory:                  7 MB



  F1 Help          ↑↓  Select Item      +/- Change Values         F9 Setup Defaults
  ESC Exit         ←→ Select Menu       ENTER Select ▶ Sub-Menu   F10 PreviousValues
```

Figure 5-1   BIOS Setup Main Menu

System Time and Date

We recommend that you set these parameters, because many software packages require the correct time and date to operate correctly.

Diskette A and B

These parameters indicate what type of diskette drive is in your system. AV 3600R BIOS and cabling support 1.44-Mbyte, 3.5-inch drives; your system comes with a 1.44-Mbyte diskette drive.

If you are uncertain about which type of diskette drive you have installed, you can make the system check the configuration when booting to verify that you have entered the correct type. To enable this parameter, select Floppy Check under Boot Sequence on the Main Setup screen. Note that enabling the Floppy Check slows the boot process. Remember to disable this parameter later for a faster boot.

Daylight Savings (USA)

Enable this parameter if you are in a region of the United States that observes daylight savings time. When enabled, your system will automatically "spring forward" and "fall back."

IDE Adapter 0 Master / Slave and 1 Master / Slave

If your system has an IDE hard disk drive installed, enter its type in this parameter. The options for this field are None, Drive Types 1–39, and Autodetect. For most drives, Autodetect can correctly sense the drive type installed. If it does not, you can manually enter the drive specifications as described in the documentation included with the hard disk drive.

- The Auto Detect option automatically updates the BIOS Setup hard drive characteristics. This works on supported drives only. If you are not certain which drive type you have installed, try using Auto Detect.

- You can enter user-definable drive types manually. Obtain the drive specifications from the device documentation.

Note that BIOS Setup does not require IDE drive settings. We recommend that you use SCSI hot-swap hard drives.

Large Disk DOS Compatibility

Enable this parameter if you have an IDE disk with more than 1024 cylinders. This works with DOS, OS/2, and Windows NT. Disable this parameter if you are running Novell or Unix.

Video System

Set this parameter to reflect the type of video card you have installed in the AV 3600R. For the card now installed in your system, the default is EGA/VGA.

Memory Cache

- The Memory Cache parameter defaults to Enabled. Normally used for troubleshooting speed-related problems, this parameter can enable or disable both internal and external cache.

- Cache System BIOS Area controls caching of the system BIOS area with the following options: Uncached or Write Protect.

- Cache Video BIOS Area controls caching of the video BIOS area with the following options: Uncached or Write Protect.

- Cache Base 0–512k controls caching of the 512-Kbyte base memory. Options for this feature are Write Back, Write Through, and Uncached.

- Cache Base 512k–640k controls caching of the 512-Kbyte — 640-Kbyte base memory. Options for this feature are Write Back, Write Through, and Uncached.

- Cache Extended Memory Area controls caching of the system memory above 1 Mbyte. Options for this feature are Write Back, Write Through, and Uncached.

- Cache Memory Regions allow you to copy specific regions of memory into the high-speed RAM of the external cache, resulting in increased performance.

Memory Shadow

- System Shadow copies the contents of the BIOS chip into RAM for faster execution, increasing system performance. It is preset; you cannot change it.

- Video Shadow copies the contents of the BIOS chip on your video card into RAM when you set this parameter to Enabled, allowing faster execution and increased performance.

- Shadow Memory Region allows specific memory addresses, typically I/O card BIOS areas, into RAM for faster execution. PCI cards will automatically manage shadowing of their BIOS areas.

Boot Sequence (Boot Options)

- The Boot Sequence parameter tells your system where to look for an operating system (or system disk) when it initially boots. Note that changing boot path parameters in the System Control Monitor overrides BIOS Setup boot sequences. See Chapter 6, "Using SCM commands and menus," for more information.

- SETUP Prompt prompts you to press <F2> to enter setup during the powerup sequence, when enabled.

- POST Errors, when enabled, tells you what to do when the system BIOS does not match the system configuration.

- Floppy Check verifies that the diskette parameter matches the installed diskette drive when enabled. For a faster boot, however, you may wish to disable this feature.

- Summary Screens displays the system configuration during the powerup sequence when enabled.

Num Lock

- The Numlock parameter sets the power-on state for the Num Lock key to Auto, On, or Off.

- Key Click, when enabled, will cause your system's speaker to click whenever you press a key.

- Keyboard Auto-repeat Rate determines at which rate a character will repeat if you hold down a key on your keyboard. The options are 2/sec, 6/sec, 10/sec, 13.3/sec, 18.5/sec, 21.8/sec, 26.7/sec, and 30/sec.

- Keyboard Auto-repeat Delay determines the amount of delay before a pressed key repeats. You can set this to 1/4 second, 1/2 second, 3/4 second, and 1 second.

System Memory

This parameter reflects the current amount of memory installed in your system. The system automatically configures System Memory and you cannot change it.

Extended Memory

This parameter tells you the current amount of extended memory in your system. The system automatically configures Extended Memory and you cannot change it.

Advanced menu

You can fine-tune your system and customize it through the Advanced BIOS Setup screen in Figure 5-2.

CAUTION   *Setting values incorrectly through this menu may cause the system to malfunction.*

```
          PhoenixBIOS Setup - Copyright 1992-95 Phoenix Technologies Ltd.

               ADVANCED
                                                    ┌─────────────────────┐
                                                    │  Item Specific Help │
                         Warning!                   ├─────────────────────┤
          Setting items on this menu to incorrect values
             may cause your system to malfunction.     (Refer to each
                                                        parameter for
                                                        specific Help
          ▶ Integrated Peripherals                     messages.)
          ▶ PCI Devices
            Memory Gap @ 15M:            [No]
            Use Multiprocessor Specification:  [1.1]
            Plug & Play O/S             [No]
            Reset Configuration Data    [No]
            P6 BIOS Update:             [Enabled]




          F1 Help        ↑↓  Select Item      +/- Change Values       F9 Setup Defaults
          ESC Exit       ←→ Select Menu       ENTER Select ▶ Sub-Menu  F10 PreviousValues
```

Figure 5-2   BIOS Setup Advanced Menu

Integrated Peripherals

- COM Port 1 reflects the address and interrupt values currently reserved for this port with twelve settings including Disabled and Auto. Note that setting this option with the System Control Monitor (SCM) overrides BIOS Setup. See Chapter 6, "Using SCM commands and menus," for more information.

  IMPORTANT   COM Port 1 is reserved for use with an auxiliary system console. Refer to Chapter 6, "Using SCM commands and menus," for information on using the auxiliary system console.

- COM Port 2 reflects the address and interrupt values currently reserved for this port with twelve settings including Disabled and Auto. The Data General service modem is configured for COM2 (02F8h) and IRQ5. Note that setting this option with the System Control Monitor (SCM) overrides BIOS Setup. See Chapter 6, "Using SCM commands and menus," for more information.

- LPT Port reflects the address and interrupt values currently reserved for this port with the following options: Disabled, Auto, 278 IRQ7, 378 IRQ7, LPT1 3BC IRQ7, LPT3 278 IRQ5.

- LPT Mode allows for a faster data transfer rate which increases system performance. The options are ECP, Bi-Directional, and Output Only.

- Diskette Controller allows you to enable or disable the internal diskette controller as well as the on-board diskette drive controller.

- Integrated PCI IDE Adapter allows you to configure your onboard hard drive controller. It can be set to Disabled if you want to install your own hard drive controller, to Primary or Secondary if you have only one or two hard drives installed, or to Both if you have three or four hard drives installed.

- Primary IDE Read Ahead allows you to enable or disable the primary PCI IDE read-ahead feature.

- Secondary IDE Read Ahead allows you to enable or disable the PCI IDE controller read-ahead feature.

- I^2C Address defines the I^2C address with options from 0 to 7. Always set this address to 1 in stand-alone configurations.

PCI Devices

- Allowed PCI Interrupts limits the allowed PCI interrupts to avoid conflict with EISA/ISA cards.

- From each PCI Device sub-menu, you can control any PCI card installed in your system. The setting options for all PCI slots are the same.

- Enable Master enables or disables a selected PCI device as bus master.

- Default Latency Timer, when set to Yes, allows the user to set the Latency Timer value in the next field.

- Latency Timer defines the maximum number of PCI bus clocks that master may burst.

Use Multiprocessor Specification (MP)

This feature configures the MP specification revision level for compatibility reasons. The default setting is MP 1.4, which supports dual PCI busses.

Plug-and-Play Operating System

Set this feature to Yes if you are using a Plug-and-Play capable operating system. Refer to your operating system's documentation to see if it supports the Plug-and-Play standard. We suggest that you set this option to No so the system BIOS performs all sizing.

Reset Configuration Data

When set to Yes, this feature clears the system configuration data. The system automatically configures all Plug-and-Play devices when you boot the system.

P6 BIOS Update

This feature allows the user to enable or disable the P6 BIOS update.

Security menu

Through the Security BIOS Screen, shown in Figure 5–3, you can protect your system from unauthorized use, as well as destructive computer viruses.

```
PhoenixBIOS Setup - Copyright 1992-95 Phoenix Technologies Ltd.
                          SECURITY
                                                    Item Specific Help

    Supervisor Password is      Disabled
    User Password is            Disabled            (Refer to each
    Set Supervisor Password     [Press Enter]       parameter for
    Set User Password           Press Enter         specific Help
                                                    messages.)
    Password on boot:           [Disabled]

    Diskette Access:            [Supervisor]
    Fixed disk boot sector:     [Normal]
    System backup reminder:     [Disabled]
    Virus check reminder:       [Disabled]




    F1 Help       ↑↓ Select Item      +/- Change Values        F9 Setup Defaults
    ESC Exit      ←→ Select Menu      ENTER Select ▶ Sub-Menu  F10 PreviousValues
```

Figure 5–3   BIOS Setup Security Menu

- **The Supervisor Password Is:**

  This setting is for information purposes only; you cannot change it here. If you change or disable the Supervisor Password, the BIOS automatically updates the password's status.

- **User Password Is:**

  This setting is for information purposes only. If you change or disable the User Password, the BIOS automatically updates the password's status.

  The User Password allows full access to the system and limited access to the security features. You must enable the Supervisor Password before you can enable the User Password.

- **Set Supervisor and User Passwords:**

  To set the password, type in the new password and press <**Enter**>. Retype the same password when the system prompts you to confirm it. To disable the password, press <**Enter**> twice.

  The Supervisor Password allows full access to the system. When enabled, the supervisor may assign or delete Supervisor and User Passwords.

- **Password on Boot**

  When this feature is enabled, the system prompts the user for a password before booting the system.

- **Diskette Access**

  This feature prevents unauthorized access to the diskette drives, reducing the possibility of file copying and virus contamination. When set to Supervisor, the diskette drive is accessible to the supervisor only. When set to User, the diskette drive is accessible to both the user and the supervisor.

- **Fixed Disk Boot Sector**

  The two settings for this feature are Normal or Write Protect, which protects the boot sector from viruses.

- **System Backup Reminder**

  You can disable this option or set it to remind yourself to back up your system on a daily, weekly, or monthly basis.

- **Virus Check Reminder**

  You can disable this option or set it to remind yourself to perform a virus check on your system daily, weekly, or monthly.

Exit menu

Once you have examined or made changes to your system configuration, you must exit the BIOS Setup and reboot. The Exit menu gives you a number of exit options as shown in Figure 5-4.


```
        PhoenixBIOS Setup - Copyright 1992-95 Phoenix Technologies Ltd.

                                    EXIT

                                                    Item Specific Help
        Save Changes & Exit
        Discard Changes & Exit
        Get Default Values                          (Refer to each
        Load Previous Values                        parameter for
        Save Changes                                specific Help
                                                    messages.)














        F1 Help         ↑↓  Select Item    +/- Change Values        F9 Setup Defaults
        ESC Exit        ←→ Select Menu     ENTER Select ► Sub-Menu   F10 PreviousValues
```
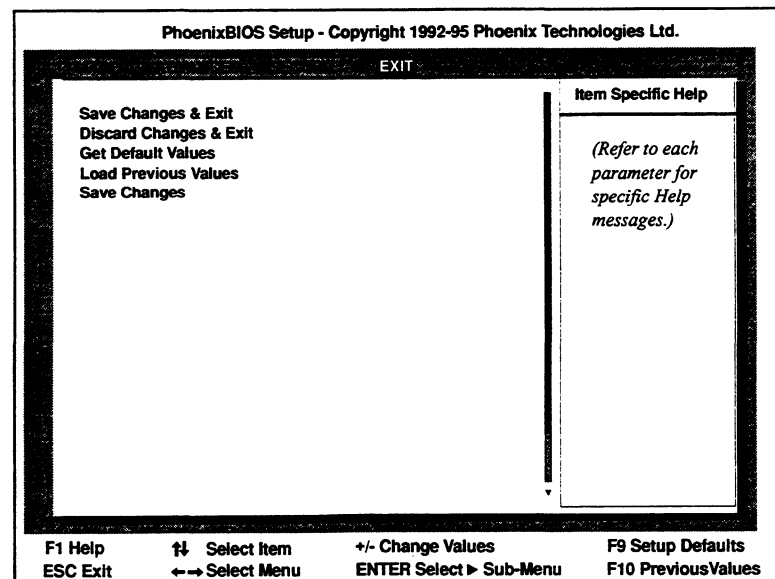
Figure 5-4   BIOS Setup Exit Menu

- **Save Changes and Exit**

  Select this option to save your current values and exit the BIOS program. The system automatically reboots using the new values stored in the system BIOS.

- **Discard Changes and Exit**

  Select this option to exit the BIOS Setup program without saving any changes you may have made. The system automatically reboots.

- **Get Default Values**

  Select this option to set all values to the factory defaults. This option does not exit you from the BIOS program.

- **Load Previous Values**

  Select this option to set the values to the settings that were last saved. This option does not exit you from the BIOS program.

- **Save Changes**

  Select this option to save the new values. This option does not exit you from the BIOS program.

End of Chapter

6 Using SCM commands and menus

This chapter describes the System Control Monitor (SCM) and tells you how to use SCM commands and menus to view or change your system configuration parameters.

The SCM consists of microprograms stored in programmable read-only memory (PROM); these PROM-based programs are part of your computer hardware (often called *microcode* or *firmware*). The SCM manages and tests your computer system after System BIOS has completed its powerup operations. It then maintains control until the operating system or other system software takes over. Whenever your system software halts, the SCM resumes control. It never runs at the same time as system software.

The SCM provides a command interpreter and several interactive menus. Use the SCM to do the following:

- view or change system parameters such as system date and time

- boot system software

- view the system configuration

Getting to the SCM

You can tell you are in the SCM when you see its command interpreter prompt, SCM86>. Your computer displays the SCM command interpreter prompt if

- you interrupt the computer before it starts the operating system.

- you shut down the operating system while it is running.

- the operating system halts after encountering an unsupported program breakpoint or interrupt.

- you press a keyboard command sequence when the operating system hangs.

CAUTION   *Always try to shut down your operating system properly before attempting to halt the computer system. Halting your computer system while the operating system or other software is running may result in lost or corrupted data.*

You interrupt the computer before it starts the operating system

If autoboot is enabled, the computer system will ask you the following:

```
Autoboot is enabled. Continue to boot? [y]/n  [10]
```

If you want the computer to stop booting the operating system and display the System Control Monitor prompt, type **n** before it counts down to 0. If you don't type a response, the computer continues to boot the operating system.

You can also access the SCM before your operating system starts by pressing <**Ctrl-C**>. Never use the <**Ctrl-C**> sequence during powerup diagnostics. If you want to interrupt the automatic boot sequence, wait until you see the Data General Corporation copyright notice on your screen. When the copyright appears, the computer has initialized the SCM.

You shut down the operating system while it is running

If you want to access the SCM while the operating system is running properly, use your operating system's command sequence to shut down the computer system properly. If you are running the DG/UX operating system, type the following UNIX command sequence to shut down the operating system properly:

cd / ⏎
shutdown –g0 –y ⏎

> **IMPORTANT**   This command brings down your operating system to single user mode immediately. You can modify the **shutdown** command to provide a period of time for users to log out. Refer to your DG/UX documentation for information.

Then, halt the operating system to display the SCM prompt, as follows:

halt –q ⏎
```
SCM86>
```

The operating system halts after encountering an unsupported program breakpoint or interrupt

Your system software handles all exceptions (program breakpoints and interrupts); it halts if it encounters an exception it does not expect or cannot handle.

You press a keyboard command sequence when the operating system hangs

To halt the DG/UX system when it is hung (seems frozen and you cannot continue operation), hold down the Ctrl key and type three sets of right and left bracket keystrokes in sequence, as follows:

] [ ] [ ] [(be sure to hold down the Ctrl key while doing this)

This sequence generates an operating system halt that should stop current processing. The operating system will respond by asking if you want to record a system dump for later analysis; type **n** and press the New Line key to proceed to the System Control Monitor.

```
Do you want to take a system dump? n ↵
```

Your system will reset and proceed through powerup diagnostics before it displays the SCM prompt.

> **IMPORTANT** If your computer system has a valid and implemented AV/Alert contract, it will send a machine-initiated incident packet (MI call) to a Data General support center detailing the operating system panic. We describe AV/Alert features in *Using AViiON® Diagnostics and the AV/Alert^{sm} Diagnostic Support System*.

If you have an operating system other than DG/UX, refer to the documentation that came with your operating system or other system software for information about keyboard break sequences. Which keys you press depend on both your keyboard type and the support of your operating system or stand-alone program.

Using SCM commands

This section describes SCM command interpreter conventions, explains how to execute commands, lists SCM commands with their functions, and provides reference pages for the commands you are most likely to use.

An SCM command line consists of one valid command and, in many cases, one or more arguments (required or optional) that you enter at the SCM prompt. Follow these guidelines when using SCM commands:

- Type no more than 80 characters in one command line.

- You do not have to type the entire command name; the SCM accepts the first letter of a command. Exceptions are **date**, **gmt**, **rsi**, and **time** commands, which require the full command name.

- SCM commands and arguments are *not* case-sensitive (with the exception of device specification arguments to the **boot** command, which *must* be lowercase).

If you use a command incorrectly, the SCM displays a brief error message and returns the prompt so you can try again.

The SCM supports several keyboard control characters. Table 6–1 describes keyboard control sequences you can use to edit command lines, to interrupt and exit from several SCM commands, and to restore default settings for configuration parameters.

Table 6–1   SCM line editing features and keyboard control sequences

Keyboard Entry	Function
↵	Completes the current input line, begins execution of command input, and returns the SCM prompt.
<Ctrl–A>	Recalls and displays the last command string you entered at the SCM prompt.
<Ctrl–C> or <Ctrl–I> [1]	Interrupts execution of an SCM command and returns the SCM prompt. This is a polled interrupt; some procedures complete before they break. If you do not have an auto-repeat keyboard, execute the **<Ctrl–C>** sequence repeatedly until you see the SCM prompt.
<Tab> [2]	Resets system NOVRAM to factory default settings for boot paths and dual-initiator SCSI ID entries. Restores port parameters to: 9600 baud, 8 data bits, no parity, ANSI character set, enabled flow control, U.S. English keyboard language. SCSI tape drives: block transfer mode.
<Ctrl–Q>	Resumes SCM output display that was suspended with the **<Ctrl–S>** sequence.
<Ctrl–S>	Suspends SCM output display until you resume it with the **<Ctrl–Q>** sequence.
<Ctrl–U>	Erases the current line of text, from the left of the cursor to the SCM prompt.

[1] Functions only as an interrupt to SCM functions.

[2] You can execute this sequence only while in the SCM.

Summary of commands

This section describes SCM commands commonly used for system operation. Table 6–2 lists these commands and intended functions. Use the **help** command to view all commands available to you on your system; use the **format** command to view the main system configuration menu.

Table 6–2   Summary of system operation SCM commands and command functions

Command	Description	Function
boot	Starts system from bootstrap device	System operation
date	Displays or sets system date	System operation, AV/Alert
format	Displays View or Change Configuration menu	System operation, debugging, program control
gmt	Displays or sets system offset from Greenwich Mean Time	System operation, AV/Alert
help	Lists valid SCM commands	System operation, debugging, program control
reset	Performs a warm reset of system: runs powerup test suites and reboot without power cycle	System operation
rsi [1]	Displays AV/Alert Remote Service Interface (REMOTE Menu)	System operation, AV/Alert
start	Starts processing from a designated address	Program control, error detection, and system recovery
time	Displays or sets system time	System operation, AV/Alert

[1]   Requires valid contract. See *Using AViiON® Diagnostics and the AV/Alert^sm Diagnostic Support System.*

Setting the system date and time

You can use the SCM **date**, **time**, and **gmt** commands to reset your system clock between Daylight Savings and Standard Time, or to reflect time zone changes. Note that setting the system date or time from the SCM alters the values in a battery backup system clock. Unless you have entered the correct offset from Greenwich Mean Time, your operating system and applications may read the values incorrectly or as universal time coordinated (UTC).

CAUTION   *In most cases, you should not use the System Control Monitor to set system time or date parameters. For the DG/UX system, we recommend that you set your system's date and time at the operating system level as described in* Managing the DG/UX® System *or the man pages for the* **date** *command.*

DATE
Displays or changes system date

Description

The **date** command reports the current system date and day of week, in English (Mon=Monday; Tue=Tuesday; Wed=Wednesday; Thur=Thursday; Fri=Friday; Sat=Saturday; Sun=Sunday.) If you enter a date argument (month/day/year), the command resets the system date.

CAUTION   *Setting the date backwards may disable AV/Alert functions; contact your remote service center before reversing system date. Refer to your system software documentation for information about possible results to applications of resetting the system date.*

Format

date   *[mm/dd/yy]*

where

mm	is a one- or two-digit decimal representation for the current month, based on the standard 12-month calendar.
dd	is a one- or two-digit decimal representation for the current day, based on the standard 30- or 31-day numerical calendar format.
yy	is a two- or four-digit decimal representation for the current year. The first two digits are assumed to be 19 unless specified.

All three date argument fields (month, day, year) are required. You must separate these fields with a space, comma (,), or slash character (/).

Related commands

time, gmt   Views or sets system clock time setting and offset from Greenwich Mean Time.

Related messages

Argument(s) Required

Examples

1. Display the current system date and day of the week.

   SCM86> **date** ↵
   Fri 10/17/96

2. Change the system date.

   SCM86> **date 10 16 96** ↵

3. Display the new date.

   SCM86> **date** ↵
   Thur 10/16/96
   SCM86>

TIME
Displays or changes system time

___

Description

With no argument, the **time** command reports the current time that your system firmware uses. Values reflect any GMT offset in effect. With a time argument (hour:minutes:second), the **time** command resets the system clock.

CAUTION *Setting time backwards more than 1 hour may disable AV/Alert functions; contact your remote service center before reversing system time. Refer to your system software documentation for information about possible results to software applications of resetting the system clock.*

Format

time *[hh mm ss]*

where

hh	is a one- or two-digit decimal representation for the current hour, based on the standard 24-hour day clock.
mm	is a one- or two-digit decimal representation for the current minute, based on the standard 60-minute hour.
ss	is a one- or two- decimal representation for the current second, based on the standard 60-second minute.

All three time argument fields (hour, minute, second) are required. You must separate these fields with a space, colon (:), or comma (,).

Related commands

date, gmt	Displays or sets system clock date or offset from GMT.

Related messages

`Argument(s) Required`

Examples

1. Display the current system time at approximately 3:00 p.m.

   SCM86> **time** ↵
   15:00:35

2. Change the system time to exactly 3:00 a.m.

   SCM86> **time 3:00:00** ↵

3. Display the new time setting.

   SCM86> **time** ↵
   3:00:02
   SCM86>

GMT
Displays or sets offset from Greenwich Mean Time

Description

With no argument, the **gmt** command reports the current offset from Greenwich Mean Time (GMT) in the system clock. The GMT offset is the time, in minutes, your site is from the GMT time zone; this standard time zone is also referred to as *universal time coordinated* (UTC) or simply Universal time. With a time argument (between plus 840 minutes and minus 840 minutes), this command resets the system offset from GMT.

CAUTION   *Setting time or dates backwards may disable AV/Alert functions; contact your remote service center before reversing system time. Refer to your system or network software documentation for information about possible results to software applications when resetting the offset from GMT.*

Format

gmt [+ – *mmm*]

where

mmm	is a one- to three-digit decimal representation of the number of minutes your time zone differs (is *offset)* from GMT. You must specify – (minus) or + (plus) to indicate whether your time zone is behind or ahead of GMT.

Related commands

date, time	Displays or sets system clock date and time.

Related messages

```
Invalid Argument(s)
```

Examples

1. Display the current offset from GMT; your site is in New York City.

   SCM86> **gmt** ↵
   Local timezone is -300 minutes from GMT

2. Change the current system offset from GMT for a site in Melbourne.

   SCM86> **gmt +600** ↵
   Local timezone changed to +600 minutes from GMT

6-10

BOOT
Boots a file, partition, or device

This section describes the **boot** command. An explanation of the default system boot paths and methods of changing them with the SCM format menus follows later in this chapter in "Changing boot parameters."

Description

The **boot** command starts the operating system from a specified device for the DG/UX, Windows NT, or UnixWare operating systems. It loads a bootstrap program from the device you specify in an optional argument device. Valid boot device arguments vary according to your peripheral configuration. For Windows NT and UnixWare, the boot command only boots the system BIOS, which completes the boot process. "Changing boot parameters," in this manual shows you how to enter "BIOS" as the boot device argument in the SCM for Windows NT and UnixWare.

The DG/UX operating system can boot from several devices. After the initial, physical device boot completes, the SCM passes the additional optional arguments **volume-name** and **file** to the booted program for further processing.

> **IMPORTANT** If you arrived at the SCM prompt following a DG/UX system halt or shutdown, issuing a **boot** command will first reset system hardware before booting a file from a device. This warm reset includes running most of the power-on self-tests executed during a cold powerup.

Typically, the booted program is the operating system bootstrap. With disk and tape boots, you can use additional arguments to specify a particular program or program parameter (such as UNIX run level) to bring up and properly initialize your operating system.

In a LAN boot, the optional arguments specify the physical LAN connection and the server system's Internet address. When you omit the second argument in a LAN boot, driver software probes the LAN for any server that recognizes your computer's Ethernet address and then boots the default boot file. (Note that this boot method requires that your server's network administrator set up your host as a boot client. Refer to your operating system's documentation for details.) Appendix A in this manual gives detailed examples of boot device specifications.

When you use the **boot** command without an optional argument, the SCM attempts to boot from a default boot path. Refer to the section "Changing the default system boot paths," later in this chapter, for information about using the Change Boot Parameters menu to set or change these default boot paths.

Format

boot *[physical–device–name][volume–name]*

> **IMPORTANT** See *Installing the DG/UX® System* and the boot man page for a detailed description of this command and additional options.

Parameters in the boot path are the following:

physical–device–name   is a physical device (tape, CD–ROM, disk, array) or network controller.

volume–name   is a virtual disk or IP address associated with the previously specified device.

Related commands

format   Displays View or Change System Configuration menu, where you change the default system boot path.

Related messages

```
Booting from ...

Unable to load boot file ...
```

HELP
Displays available SCM commands

Description

Execute the **help** command to display an alphabetical list of the minimal mnemonic for valid SCM commands, the arguments each command accepts, and a brief command description.

Format

help

Related messages

None

Examples

Determine valid SCM commands, their associated arguments, and what you can do with each one.

SCM86> **help** ↵

```
  ***Intel-AViiON SCM86 commands - PROM Rev 4.6

B [device_spec]    - Boot device
Date               - Display/Change Date
F                  - View or Change System
GMT                - Display/Change GMT
H                  - Display this help message
R                  - Reset
RSI                - Display/Change Remote Parameters
S                  - Start Executing from a linear
TIME               - Display/Change Time
```

6-13

RESET
Reinitializes (resets) your system

Description

The **reset** command initializes system hardware elements (excluding memory) to their original powerup state.

Unlike a *cold reset* (power applied to the system), a *warm reset* (initiated by software or the **reset** command) does not run the first (A–G) pass of BIOS power-on self-tests.

CAUTION   *Do not enter* **r** *at the SCM prompt accidentally. You cannot use <**Ctrl–C**> or an SCM command to recover.*

Format

reset

Related commands

boot   Boots a device.

Related messages

```
Reset System
```

Examples

```
Reset the system.

SCM86> r ↵
```

RSI
Displays your Remote Service (AV/Alert support) Interface

Description

If your DG/UX system has a valid hardware service contract and AV/Alert service enabled, you can view the AV/Alert Remote Support menu using the Remote Service Interface (**rsi**) command. In systems with AV/Alert disabled, the command displays only the Dynamic Password option; you must install a proprietary, dynamic password to enable AV/Alert. Refer to *Using AViiON® Diagnostics and the AV/Alert*sm *Diagnostic Support System* for information about enabling or using AV/Alert.

Format

rsi

Related messages

None

Examples

The following examples demonstrate the immediate results of executing the **rsi** command.

1. In a system with a valid hardware service contract, display the AV/Alert service menu.

   SCM86> **rsi** ↵

   ```
   REMOTE MENU

   1  Remote Access Password   [ ]
   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 ->
   ```

2. In a system in which AV/Alert is disabled, use the **rsi** command.

SCM86> **rsi** ↵

```
   REMOTE MENU

1  Dynamic Password
2  Return to previous screen

Enter choice ->
```

START
Starts your system from a memory address

Description

The **start** command begins a job processor (executing a program) at the main memory address you specify. The operating system or user program resumes system control unless you use the *trace-count* argument.

> **IMPORTANT** This command is commonly used in the software development process. Do *NOT* use the command SCM86> s **1000** to collect a dump from an AV 3600R that was just reset after a "hard DG/UX hang."

Format

start *address [trace–count]*

where

address	is the memory location at which the processor starts executing.
trace–count	The system displays the address, data, and mnemonic (in that order) after executing the hexadecimal number of instructions you specify with this argument. Then the system halts and the monitor displays status information.

Related messages

None

Examples

Start processor executing at address 398F0

SCM86> s **398F0** ↵

FORMAT
Enters the SCM configuration menu system

Description

The **format** command displays the View or Change System Configuration menu. You access all SCM menus to set configuration parameters from the View or Change System Configuration menu.

Format

format

Related commands

None

Related messages

None

Examples

Display the View or Change System Configuration menu.

SCM86> **f** ↵

```
   View or Change System Configuration

 1   Change boot parameters
 2   Setup multi-initiator SCSI parameters
 3   Change console parameters
 4   Change modem port parameters
 5   View system configuration
 6   Change Adaptec BIOS or SCSI Parameters
 7   Change testing parameters
 8   Return to previous screen

   Enter choice(s) ->
```

Using SCM menus

You can reach all SCM menus from the View or Change System Configuration menu. From this primary menu, you can display or modify several system configuration parameters.

Summary of menus and menu conventions

To display the View or Change System Configuration menu, use the **format** command. Enter the following command line at the SCM prompt:

SCM86> **f** ↵

The system will display the following menu.

```
View or Change System Configuration
1  Change boot parameters
2  Setup multi-initiator SCSI parameters
3  Change console parameters
4  Change modem port parameters
5  View system configuration
6  Change Adaptec BIOS or SCSI Parameters
7  Change testing parameters
8  Return to previous screen
Enter choice(s) ->
```

The Change modem port and Change console parameters options provide submenus to identify the modem port in use and specify the console baud rate and character length. The other options provide direct access to the parameter listed.

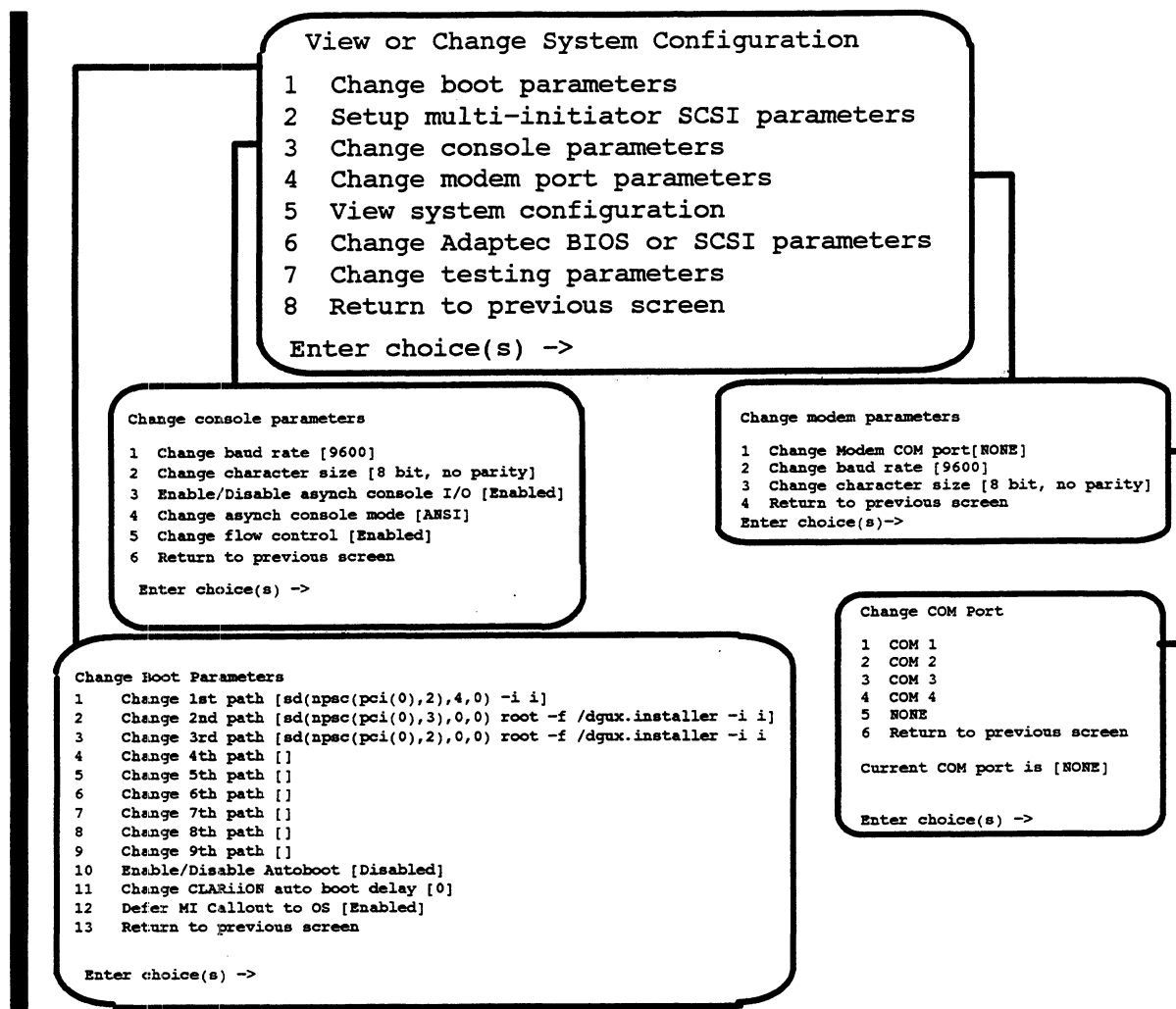IMPORTANT: The Change testing parameters option is for DG personnel only.

```
            View or Change System Configuration

        1  Change boot parameters
        2  Setup multi-initiator SCSI parameters
        3  Change console parameters
        4  Change modem port parameters
        5  View system configuration
        6  Change Adaptec BIOS or SCSI parameters
        7  Change testing parameters
        8  Return to previous screen

        Enter choice(s) ->
```

```
Change console parameters

1  Change baud rate [9600]
2  Change character size [8 bit, no parity]
3  Enable/Disable asynch console I/O [Enabled]
4  Change asynch console mode [ANSI]
5  Change flow control [Enabled]
6  Return to previous screen

  Enter choice(s) ->
```

```
Change modem parameters

1  Change Modem COM port[NONE]
2  Change baud rate [9600]
3  Change character size [8 bit, no parity]
4  Return to previous screen
Enter choice(s)->
```

```
Change COM Port

1  COM 1
2  COM 2
3  COM 3
4  COM 4
5  NONE
6  Return to previous screen

Current COM port is [NONE]

Enter choice(s) ->
```

```
Change Boot Parameters
1    Change 1st path [sd(npsc(pci(0),2),4,0) -i i]
2    Change 2nd path [sd(npsc(pci(0),3),0,0) root -f /dgux.installer -i i]
3    Change 3rd path [sd(npsc(pci(0),2),0,0) root -f /dgux.installer -i i
4    Change 4th path []
5    Change 5th path []
6    Change 6th path []
7    Change 7th path []
8    Change 8th path []
9    Change 9th path []
10   Enable/Disable Autoboot [Disabled]
11   Change CLARiiON auto boot delay [0]
12   Defer MI Callout to OS [Enabled]
13   Return to previous screen

  Enter choice(s) ->
```

Figure 6-1   System Control Monitor (SCM) menus

Most changes you make while using SCM menus become effective
immediately; some might require you to power up or reset the computer.
You can reset the computer by using the **reset** command at the SCM
prompt or by powering down and restarting the system as described in
Chapter 1.

You can exit from any menu by selecting the last item on the menu. You
return to the previous menu, *except* when you leave the View or Change
System Configuration menu. When you exit from the View or Change
System Configuration menu, you return to the SCM prompt.

You can select multiple items to view or change at the
Enter choice(s)-> prompt on each menu. The SCM executes the items
in sequence before returning to the menu screen. Use a space or a comma to
separate item numbers.

Changing Boot parameters

The SCM lets you view and alter your computer system's boot path(s). Edit the default system boot paths to specify any bootable device on your AViiON AV 3600R system as the one(s) from which your system starts at every powerup, reset, or simple **boot** command.

If your computer is running the Windows NT operating system, set the first boot path to **BIOS**. The other eight boot paths can remain empty.

If your computer is running the DG/UX operating system, enter a device name in at least one of the nine boot paths. When the computer boots the operating system, it looks at the first boot path; if it does not find a device name in the first boot path, it looks at paths two through nine until it finds one. For more information about naming boot devices, see Appendix A in this manual or see your DG/UX® documentation.

Systems with the autoboot feature *disabled* wait for user input before they attempt to boot an operating system at a powerup or cold reset. *Enabling* the autoboot feature can reduce system down time by causing system firmware to automatically boot from the default boot path. (See your DG/UX® documentation and the **dg_sysctl** man pages for information on using the automatic reboot features of your system software.)

Changing the default system boot paths

To view, initialize, or change the default boot device, follow these steps:

1. While in the View or Change System Configuration menu, type **1** and press enter to select item 1, "Change boot parameters."

```
   View or Change System Configuration

 ┌─────────────────────────────────────────────┐
 │ 1   Change boot parameters                   │
 └─────────────────────────────────────────────┘
   2   Setup multi-initiator SCSI parameters
   3   Change console parameters
   4   Change modem port parameters
   5   View system configuration
   6   Change Adaptec BIOS or SCSI Parameters
   7   Change testing parameters
   8   Return to previous screen

   Enter choice(s) -> 1
```

The system displays the Change Boot Parameters menu. The display includes current system boot parameters inside square brackets, as follows:

```
Change Boot Parameters

1   Change 1st path [sd(npsc(pci(0),C),4,0) -i i]
2   Change 2nd path [sd(npsc(pci(0),D),0,0) root -f /dgux.installer -i i]
3   Change 3rd path [sd(npsc(pci(0),C),0,0) root -f /dgux.installer -i i]
4   Change 4th path
5   Change 5th path
6   Change 6th path
7   Change 7th path
8   Change 8th path
9   Change 9th path
10  Enable/Disable Autoboot [Disabled]
11  Change CLARiiON auto boot delay [0]
12  Defer MI Callout to OS [Enabled]
13  Return to previous screen

Enter choice(s) ->
```

2. To keep the existing boot path, press enter at the prompt, or select "Return to previous screen."

3. To set or change a boot path, type the appropriate number and press enter at the Enter choice(s) -> prompt.

The system displays the following prompt.

Enter new path ->

4. Type a valid boot path (*device specification*) and press enter. Refer to your Release Notices, Appendix A in this manual, and *Managing Mass Storage Devices and DG/UX® File Systems* for valid entries.

CAUTION   *If you don't enter anything at the prompt and press enter, the SCM empties the path.*

For example, to boot the DG/UX operating system from the first SCSI disk — device name **sd(npsc(pci(0),B),0)**, virtual disk named **root**, and kernel pathname /**dgux** — type the following for the first default boot path:

Enter new path ->**sd(npsc(pci(0),B),0) root -f/dgux** ↵

The SCM will now automatically attempt to boot DG/UX from this device at every powerup.

5. After you specify a new default boot path, the SCM immediately returns to the Change Boot Parameters menu and displays your new entry in brackets.

Enabling or disabling Autoboot

You can disable or enable your system's automatic boot feature from the Change Boot Parameters menu. With autoboot *disabled,* a system powerup or cold reset will stop at the SCM prompt and await your input (such as a **boot** command) before continuing. When you *enable* SCM autoboot, the system will extend powerup and attempt to boot from the default boot path(s).

To change your autoboot setting, follow these steps:

1. While in the View or Change System Configuration menu, type **1** and press enter to select item 1, "Change boot parameters."

    The system displays the Change Boot Parameters menu. The display shows the current autoboot setting inside square brackets, as follows:

```
Change Boot Parameters

1   Change 1st path [sd(npsc(pci(0),C),4,0) -i i]
2   Change 2nd path [sd(npsc(pci(0),D),0,0) root -f /dgux.installer -i i]
3   Change 3rd path [sd(npsc(pci(0),C),0,0) root -f /dgux.installer -i i]
4   Change 4th path
5   Change 5th path
6   Change 6th path
7   Change 7th path
8   Change 8th path
9   Change 9th path
10  Enable/Disable Autoboot [Disabled]
11  Change CLARiiON auto boot delay [0]
12  Defer MI Callout to OS [Enabled]
13  Return to previous screen

Enter choice(s) ->
```

2. To keep the existing autoboot setting, press enter at the prompt, or select item 13, "Return to previous screen."

3. To reverse the current setting, type **10** and press enter to select item 10, "Enable/Disable Autoboot."

    If autoboot is currently enabled, selecting the menu item will disable it immediately. If autoboot is disabled, selecting the menu item will enable it immediately.

4. After you select your autoboot setting, the SCM immediately returns to the Change Boot Parameters menu, and displays your new setting in brackets. Select item 10 again if you wish to toggle autoboot to its previous setting.

Changing CLARiiON auto boot delay

If your configuration includes a CLARiiON® storage system, use this option to change the CLARiiON *auto boot delay* (the amount of time your computer system pauses before it automatically boots a CLARiiON device). During the auto boot delay, you can tell the computer system to bypass booting a CLARiiON.

To change CLARiiON auto boot delay, do the following:

1. While in the View or Change System Configuration menu, type 1 and press enter to select item 1, "Change boot parameters."

   The computer displays the Change Boot Parameters menu.

```
Change Boot Parameters

1   Change 1st path [sd(npsc(pci(0),C),4,0) -i i]
2   Change 2nd path [sd(npsc(pci(0),D),0,0) root -f /dgux.installer -i i]
3   Change 3rd path [sd(npsc(pci(0),C),0,0) root -f /dgux.installer -i i]
4   Change 4th path
5   Change 5th path
6   Change 6th path
7   Change 7th path
8   Change 8th path
9   Change 9th path
10  Enable/Disable Autoboot [Disabled]
11  Change CLARiiON auto boot delay [0]
12  Defer MI Callout to OS [Enabled]
13  Return to previous screen

Enter choice(s) ->
```

2. Type 11 and press enter to select item 11, "Change CLARiiON auto boot delay."

   The computer displays the following prompt:

   `Time in seconds to wait for the CLARiiON [0 - 1275] ->`

3. Enter a time between 0 and 1275 seconds and press enter.

   The SCM immediately returns to the Change Boot Parameters menu, and displays your new setting in brackets. The next time you power up the computer system, it will display the prompt for the number of seconds in brackets.

Defering MI callout to OS

If your computer is running the DG/UX operating system, enable this option to let the operating system send Machine-initiated Callouts (MI Callouts) to the Data General Customer Support Center. For more information about MI Callouts, see the DG/UX documentation. If your computer is running an operating system other than DG/UX, set this option to Disabled.

To enable or disable MI Callout to the operating system, do the following:

1. While in the View or Change System Configuration menu, type **1** and press enter to select item 1, "Change boot parameters."

   The system displays the Change Boot Parameters menu. The display shows the current autoboot setting inside square brackets, as follows:

```
Change Boot Parameters

1   Change 1st path [sd(npsc(pci(0),C),4,0) -i i]
2   Change 2nd path [sd(npsc(pci(0),D),0,0) root -f /dgux.installer -i i]
3   Change 3rd path [sd(npsc(pci(0),C),0,0) root -f /dgux.installer -i i]
4   Change 4th path
5   Change 5th path
6   Change 6th path
7   Change 7th path
8   Change 8th path
9   Change 9th path
10  Enable/Disable Autoboot [Disabled]
11  Change CLARiiON auto boot delay [0]
12  Defer MI Callout to OS [Enabled]
13  Return to previous screen

Enter choice(s) ->
```

2. To keep the existing MI callout setting, press enter at the prompt, or select item 13, "Return to previous screen."

3. To reverse the current setting, type **12** and press enter to select item 12, "Defer MI Callout to OS."

   If the Defer MI Callout to OS option is currently enabled, selecting the menu item will disable it immediately. If it is disabled, selecting the menu item will enable it immediately.

4. After you select your MI Callout setting, the SCM immediately returns to the Change Boot Parameters menu and displays your new setting in brackets. Select item 12 again if you wish to toggle Defer MI Callout to its previous setting.

Setting SCSI bus operating parameters

The Small Computer System Interface controllers in your system control peripheral device buses conforming to the SCSI-2 specification. You can view or change the data transfer speed of the internal bus that manages your single-ended CD–ROM and optional tape devices, and define the controller ID and number for dual-initiated systems, by using the SCM menus described in this section.

Viewing or changing the identification list for multi-initiator SCSI controllers

DG/UX systems can use a *multi-initiator* configuration. In a multi-initiator configuration (two or more host computers sharing a single SCSI bus), your system software needs a way to determine the SCSI identification of each host controller/adapter. The DG/UX system and AViiON System Diagnostics refer to a firmware database to determine your configuration and avoid conflict on the SCSI bus. SCM configuration item 2, "Setup multi-initiator SCSI parameters," allows you to view and make entries to your host computer firmware's list of SCSI host controller identifications.

For detailed explanations of multi-initiated systems, see your CLARiiON and your operating system documentation. If your system does not use a multi-initiator (multihost) SCSI configuration, you will not need to use this option.

Using the Setup multi-initiator SCSI ID menu

To view, list, delete, or enter the device names of SCSI buses on your host, follow these steps:

1. While in the View or Change System Configuration menu, type 2 and press enter to select item 2, "Setup multi-initiator SCSI parameters."

   The system displays a list of valid SCSI controller specifications. If you or another system administrator has not manually entered any specifications, the list contains no entries. If someone has previously entered controller identifications, the list appears similar to the following example, in which the system operator has entered the host computer's specifications for two dual-initiated buses:

```
SCSI Dual Initiator ID Menu

1 npsc(pci(0),B,0,7)        11
2 npsc(pci(0),D,0,6)        12
3                           13
4                           14
5                           15
6                           16
7                           17
8                           18
9                           19
10                          20

21 Return to previous screen

Enter choice(s) ->
```

Always assign SCSI ID 7 to the first NCR controller, which is in the
lowest-numbered bulkhead slot. Corresponding entries in the second
host's SCSI ID table can use any valid controller type and number, but
require different SCSI IDs. The following example compares ID lists in
a dual-initiated system configuration with an AViiON 4900 and another
AViiON host computer. The lines between list entries indicate
physically shared buses.

```
                              1 npsc(pci(0),3,0,7)   4
1 npsc(pci(0),B,0,7) ───────2 apsc(cpci(1),2,0,6) 5
2 npsc(pci(0),D,0,6) ───────3 npsc(cpci(1),3,0,7) 6
3
4                             Enter choice->
```

          Host A   Host B
       (AViiON 4900)
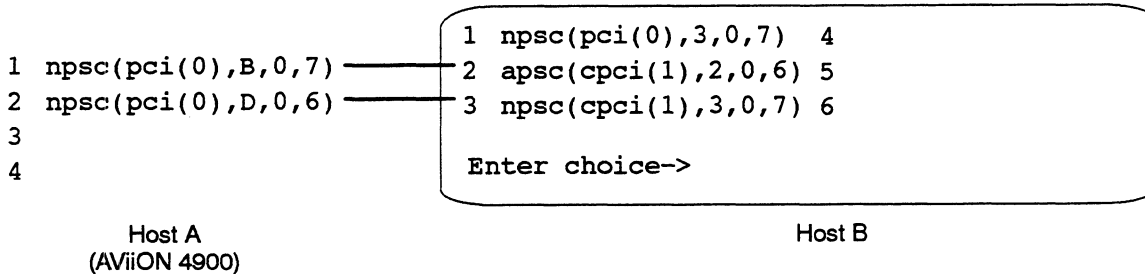
2. Type the number of the specification fields you want to change, and
    press enter. The system then asks you to enter the SCSI controller
    identification:

    `Enter controller specification ->`

3. Enter the controller specification and press New Line, as shown in the
    next example. If you want to delete a specification from the table,
    simply press enter without entering a new SCSI ID.

```
SCSI Dual Initiator ID Menu

1  npsc(pci(0),B,0,7)          11
2  npsc(pci(0),D,0,6)          12
3                              13
4                              14
5                              15
6                              16
7                              17
8                              18
9                              19
10                             20

21 Return to previous screen

Enter choice(s) ->3 ↵

Enter controller specification ->npsc(pci(0),C,0,6)↵
```

4. Repeat steps 2 and 3 as necessary until you have specified all of your system's shared SCSI buses.

5. Verify the menu entries displayed on your screen by comparing them to any system configuration worksheets you might have received with your SCSI devices. Press return at the Enter choice -> prompt to return to the View or Change System Configuration menu.

Modifying system console port parameters

The *system console* refers to the terminal and keyboard that receive powerup diagnostic test messages and from which you bring up your operating system. This menu choice is not for VGA monitors.

Items on the Change console parameters menu allow you to set the operating parameters for a device connected to the system console (COM1) port or to view the default values for these parameters. The following subsections describe how to view or change console parameters.

Changes you make through the SCM Change console parameters menu do not affect the port devices until you reset your hardware. You can reset the computer by using the **reset** command at the SCM prompt or by powering down and restarting the system as described in Chapter 1.

To display the Change console parameters menu, type 3 and press enter while in the View or Change System Configuration menu.

The next sections in this chapter describe how to change the system console port's baud rate, character size, mode, XON/XOFF flow control setting, and how to enable or disable asynchronous console mode (COM1).

Changing the system console baud rate

The current system console baud rate is displayed as part of the "Change baud rate" selection of the Change console parameters menu.

To change the baud rate, follow these steps:

1. While in the View or Change System Configuration menu, type **3** and press enter to select item 3, "Change console parameters."

   The system displays the Change console parameters menu. The display shows the current baud rate setting inside square brackets, as follows:

   ```
   Change console parameters

   1   Change baud rate [9600]
   2   Change character size [8 bit, no parity]
   3   Enable/Disable asynch console I/O [Enabled]
   4   Change asynch console mode [ANSI]
   5   Change flow control [Enabled]
   6   Return to previous screen
   Enter choice(s) -> 1 ↵
   ```

2. Select item 1, "Change baud rate."

   The system displays the Change baud rate menu.

   ```
   Change baud rate

   1      300
   2      600
   3      1200
   4      2400
   5      4800
   6      9600
   7      19200
   8      38400
   9      Return to previous screen

   Current baud rate [9600]
   Enter choice(s)->
   ```

3. Type the item number of the baud rate you want and press enter.

   The new baud rate will take effect after you reset your hardware. You can reset the computer by using the **reset** command at the SCM prompt or by powering down and restarting the system as described in Chapter 1.

Changing the system console character length

The current system console character length is displayed as part of the "Change character size" selection of the Change console parameters menu.

```
Change console parameters

1   Change baud rate [9600]
 ┌──────────────────────────────────────────────┐
 │2   Change character size [8 bit, no parity]   │
 └──────────────────────────────────────────────┘
3   Enable/Disable asynch console I/O [Enabled]
4   Change asynch console mode [ANSI]
5   Change flow control [Enabled]
6   Return to previous screen
Enter choice(s) -> 1 ⏎
```

1. To change the character length, type **2** and press enter.

CAUTION   *The DG/UX operating system requires that your system console be set to 8 data bits, no parity.*

The system displays the Change character size menu.

```
Change character size

1   8 bit, no parity
2   7 bit, even parity
3   7 bit, odd parity
4   7 bit, mark parity
5   7 bit, no parity
6   Return to previous screen

Current character size is [8 bit, no parity]

Enter choice(s)->
```

2. Type the item number of the character size you want and press enter.

The new setting will take effect after you reset your hardware. You can reset the computer by using the **reset** command at the SCM prompt or by powering down and restarting the system as described in Chapter 1.

Enabling or disabling asynch console I/O

Enable or disable asynch console I/O depending on the type of serial device you connect to COM1. If you want to connect a console to serial port COM1 (known as *asynch console I/O* when it serves as the console port), you must enable asynch console I/O. If you want to connect any other serial device, you must disable asynch console I/O.

To disable or enable asynch console I/O, follow these steps:

1. While in the View or Change System Configuration menu, type **3** and press enter to select item 3, "Change console parameters."

   The system displays the Change console parameters menu. The display shows the current setting for asynch console I/O inside square brackets, as follows:

```
Change console parameters

1   Change baud rate [9600]
2   Change character size [8 bit, no parity]
3   Enable/Disable asynch console I/O [Enabled]
4   Change asynch console mode [ANSI]
5   Change flow control [Enabled]
6   Return to previous screen
Enter choice(s) -> 1 ↵
```

2. To keep the existing setting, press enter at the prompt, or select item 6, "Return to previous screen."

3. To reverse the current setting, type **3** and press enter.

   The system displays the following prompt:

   Warning: COM1 keyboard will be disabled as well!
   Continue? y/[n] [5]

   If asynch console I/O is currently enabled, type **y** before the system counts down to 0 to disable it immediately. If it is disabled, type **y** before the system counts down to 0 to enable it immediately. To keep the existing setting, let the system count down to 0 or type **n** at the prompt.

4. After you select your asynch console I/O setting, the SCM immediately returns to the Change console parameters menu and displays your new setting in brackets; select item 3 again if you wish to toggle asynch console I/O to its previous setting.

Changing the system console mode

The current system console mode is displayed as part of the "Change asynch console mode" selection of the Change console parameters menu.

1. While in the View or Change System Configuration menu, type **3** and press enter to select item 3, "Change console parameters."

   The system displays the current value in brackets next to item 3 on the Change console parameters menu.

```
Change console parameters

1   Change baud rate [9600]
2   Change character size [8 bit, no parity]
3   Enable/Disable asynch console I/O [Enabled]
┌─────────────────────────────────────────────┐
│4   Change asynch console mode [ANSI]          │
└─────────────────────────────────────────────┘
5   Change flow control [Enabled]
6   Return to previous screen
Enter choice(s) -> 4 ↵
```

2. Select item 4, "Change asynch console mode" to change the default character code setting for the system console port.

   See the documentation that came with the terminal for information about supported character modes.

CAUTION   *The console character code set must be ANSI if you use the DG/UX operating system.*

If the character set is currently ANSI, you will change the specification to DG mode. If the character set is currently DG mode, you will change it to ANSI. You return to the Change console parameters menu without further screen display. Select item 3 again to toggle it to the previous setting.

The new console mode will take effect after you reset your hardware. You can reset the computer by using the **reset** command at the SCM prompt or by powering down and restarting the system as described in Chapter 1.

Enabling or disabling system console flow control

With flow control (XON/XOFF protocol) enabled, you can use the <Ctrl-S> sequence to suspend screen output and <Ctrl-Q> to resume screen display while in the SCM. Flow control is enabled within the SCM by default.

1. While in the View or Change System Configuration menu, type **3** and press enter to select item 3, "Change console parameters."

```
Change console parameters

1   Change baud rate [9600]
2   Change character size [8 bit, no parity]
3   Change asynch console mode [ANSI]
4   Change flow control [Enabled]
6   Return to previous screen
Enter choice(s) -> 4 ↵
```

2. Select item 4, "Change flow control" to enable or disable the default flow control setting (while in the SCM).

The system displays the current value in brackets.

If flow control is currently enabled, selecting item 4 will disable it; if flow control is currently disabled, the selection will enable it.

The new console characteristic will take effect after you reset your hardware. You can reset the computer by using the **reset** command at the SCM prompt or by powering down and restarting the system as described in Chapter 1.

Changing modem (AV/Alert, service) port parameters

Use the Change modem port parameters menu to specify the proper configuration for the service (modem) port, which is located in slot 5 on the computer rear panel. Make sure that the device and the port have the same settings.

1. While in the View or Change System Configuration menu, type **4** and press enter to select item 4, "Change modem port parameters."

   The system displays the Change modem port parameters menu (with current default values in brackets), as follows:

```
Change modem port parameters

  1  Change modem COM port [NONE]
  2  Change baud rate [19200]
  3  Change character size [8 bit, no parity]
  4  Return to previous screen

Enter choice(s)->
```

2. Select the item you want to change (port, baud rate, or character length) by entering the item number and pressing enter. Proceed with the appropriate section that follows.

Changing the service modem port

Most AViiON AV 3600R systems include a modem card in slot 3 on the rear of the computer chassis, which is connected to asynchronous port COM3. This *service modem* is an integral part of the AV/Alert and NTAlert remote service and diagnostic support available on your system.

If you want to connect an external modem to asynchronous port COM2 (COM1 is typically reserved for the system console or devices running under the operating system) on the rear of your computer chassis instead of using the modem card in slot 3 connected to asynchronous port COM3, do the following:

1. Select option 1, "Change modem com port," from the Change modem port parameters menu. The SCM displays the Change COM Port menu.

```
Change COM Port

  1  COM1
  2  COM2
  3  COM3
  4  COM4
  5  NONE
  6  Return to previous screen

  Current com port is [NONE]
Enter choice(s)->
```

The parameter, NONE, sets the COM port to its default, the internal modem in slot 3.

2. To specify your system's COM2 port as the AV/Alert-service port/modem, select option 2, "COM2," from the Change COM Port menu.

The new COM port specification will take effect after you reset your hardware. You can reset the computer by using the **reset** command at the SCM prompt or by powering down and restarting the system as described in Chapter 1.

Changing the service port baud rate

The default baud rate for your service port is 19200 baud. When you display the Change modem port parameters menu, the system displays the current baud rate in brackets. See the documentation that came with your modem for information on the modem's baud rate(s).

```
Change modem parameters

 1   Change Modem COM Port [NONE]
 2   Change baud rate [19200]
 3   Change character size [8 bit, no parity]
 4   Return to previous screen

Enter choice(s)->2 ↵
```

1. To view a list of valid baud rates supported by your system, select Item 2, "Change baud rate."

```
Change baud rate

 1   300
 2   600
 3   1200
 4   2400
 5   4800
 6   9600
 7   19200
 8   38400
 9   Return to previous screen
Current baud rate [19200]

Enter choice(s)->
```

2. To change the baud rate, type the item number of the baud rate you want, and press enter.

The new baud rate will take effect after you reset your hardware. You can reset the computer by using the **reset** command at the SCM prompt or by powering down and restarting the system as described in Chapter 1.

Changing the service port character size

Use item 3, "Change character size" to change the character size for the service port. The default value is 8 data bits, no parity. See the documentation that came with your device for information about setting the correct character length and parity.

```
Change modem parameters

  1  Change Modem COM Port [NONE]
  2  Change baud rate [19200]
    3  Change character size [8 bit, no parity]
  4  Return to previous screen

Enter choice(s)->
```

To change the character size, type the item number of the character size you want, and press enter.

```
Change character size
  1  8 bit, no parity
  2  7 bit, even parity
  3  7 bit, odd parity
  4  7 bit, mark parity
  5  7 bit, no parity
  6  Return to previous screen
  Current character size is [8 bit, no parity]
Enter choice(s)->
```

The new character size will take effect after you reset your hardware. You can reset the computer by using the **reset** command at the SCM prompt or by powering down and restarting the system as described in Chapter 1.

Displaying the system configuration

While in the View or Change System Configuration menu, type **5** and press enter to view the system configuration.

```
  View or Change System Configuration

1   Change boot parameters
2   Setup multi-initiator SCSI parameters
3   Change console parameters
4   Change modem port parameters
5   View system configuration
6   Change Adaptec BIOS or SCSI Parameters
7   Change testing parameters
8   Return to previous screen

   Enter choice(s) -> 5
```

If you select option 5, your system displays a list of internal components similar to the following :

```
System Configuration:

System Model AV4900

2 Processors

MEMORY:
       TOTAL: 512 Mbytes Memory

PCI Controllers:
slot 1: DEC DC21040 LAN primary pci bus
slot 3: NCR 53C825 PCI_SCSI primary pci bus



Press any key to continue...
```

Changing Adaptec BIOS or SCSI parameters

Modify settings for your Adaptec host bus adapter with the Changing Adaptec BIOS or SCSI Parameters option. You can also change these settings through SCSI-Select (the firmware program embedded in a chip on the controller), but you must reboot your computer and press <Ctrl-A> during power up diagnostics. Data General firmware reads the SCSI-Select firmware on your adapter's chip and displays it in SCM format so that you do not have to restart the computer.

Use this option if you want to do the following:

- run an Ultra SCSI (Fast 20 SCSI) device

- enable or disable the adapter BIOS

- enable or disable the computer's ability to boot from the CD–ROM drive

- modify SCSI IDs, termination, and start unit command

For more details, see the documentation that came with your controller.

End of Chapter

A Specifying boot paths for the DG/UX operating system

To tell the computer to look for the DG/UX operating system on a tape, disk, CD-ROM, LAN, or other physical device, you must provide a boot path specification. This appendix describes the parameters in a boot path.

Parameters in a boot path

The parameters in the following diagram make up a complete boot path. To specify a boot path, you must know the order of parameters in a boot command argument. For example, the boot command argument **sd(npsc(pci(0),C,0,7),0,1)** tells your AViiON AV 3600R the following:

sd(npsc(pci(0),C,0,7),0,1)

The device type is SCSI disk

*using Symbios SCSI host bus adapter

PCI-host bridge

host bridge number is 0

PCI device letter is C,

PCI function number 0,

adapter uses SCSI ID 7

the target device is SCSI id 0,

logical unit number (LUN) 1
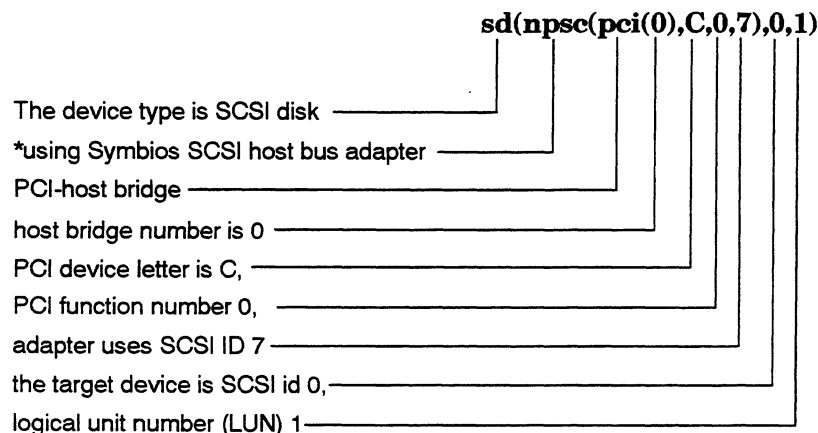
*for Adaptec SCSI adapters, use the argument apsc instead of npsc.

The following parameters describe AV 3600R components listed in a DG/UX boot path:

device type:	sd	SCSI disk (includes CD-ROM drive)
	st	SCSI tape
device driver:	npsc	Symbios PCI SCSI adapter
	apsc	Adaptec PCI SCSI adapter
	dpen	DEC PCI Ethernet LAN
	dpsc	High-performance PCI SCSI disk RAID controller
bus type:	pci	PCI host bridge

Determining a device's SCSI ID

Figure A-1 shows SCSI IDs that correspond to the bays in the hot-swap cage. You do not need to set jumpers on SCA hard drives; the backplane of the hot-swap cage bay where you installed the drive automatically determines its ID.

Drive cage bay (starting at top)	SCSI ID
1	6
2	4
3	3
4	2
5	1
6	0

hot-swap cage (cover panel removed)
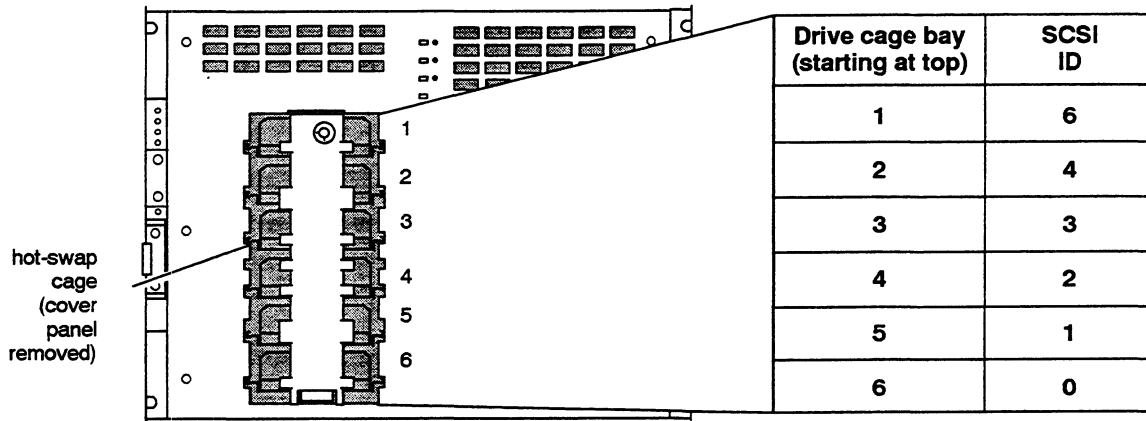
Figure A-1 Hot-swap cage location

The CD-ROM drive and drives in the hot-swap cage use the SCSI host bus adapter (or SCSI adapter) in slot 13 on the rear panel. Use SCSI ID 5 for the CD-ROM drive and use SCSI IDs 6, 4, and 3 for optional devices installed in bays above the hot-swap cage.

Boot path examples

The following examples show you common boot path specifications. For more information and examples, refer to the DG/UX documentation.

1. File 0 on the first tape drive (SCSI ID 6) from the SCSI adapter, PCI bus 1:

   b st(npsc(pci(1),C),6)

   This example leaves out default function, controller ID, and file path parameters. If you included them, the example would be the following:

   b st(npsc(pci(1),C,1,2),6)0

2. The third file (3) on the SCA drive in the third bay from the top of the hot-swap cage (given the same default parameters in example 1):

   b sd(npsc(pci(1),C),3)3

3. The first file on the internal system CD-ROM drive (device ID 5, SCSI controller in thirteenth slot of rear panel):

   b sd(npsc(pci(1),C),5)

When booting from an Ethernet LAN, the arguments include the physical LAN board device (device name with bus and device letter), and optionally, the server system's Internet address. For example:

dpen(pci(0),C) 128.111.179.33

specifies the **dpen** driver on the primary **pci(0)** PCI bus, in slot (C), with the IP address **128.111.179.33** for a volume-name.

When you omit the second argument in a LAN boot path, the driver sends a broadcast boot request over the LAN for any server that recognizes your computer's Ethernet address, and then boots the server-specified boot file. (Note that this boot method requires that your server's network administrator set up your host as a boot client.) Refer to *Managing the DG/UX® System* for details.

End of Appendix

Index

A range of page numbers indicates that the reference spans those pages.

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