TECH NOTE

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Compaq Server Manager/R: Important Facts and Information

EXECUTIVE SUMMARY

The Compaq 32-bit Server Manager/R (SM/R) board is a server management tool. It monitors, sends alerts, and provides information about the hardware, EISA bus, and operating system of the server in which it is installed. This paper provides a brief overview of:

- Hardware and software of the SM/R board

- SM/R board system requirements

- Recommended SM/R board alert settings

It also answers general questions about the features and capabilities of the SM/R board and presents solutions to known issues regarding the board.

COMPAQ

NOTICE

The information in this publication is subject to change without notice.

Compaq Server Manager/R: Important Facts and Information
First Edition (November 1995)
Document Number 195A/1195

INTRODUCTION

The purpose of this paper is to provide a brief overview of:

- Hardware and software of the Compaq 32-bit Server Manager/R (SM/R) board

- SM/R board system requirements

- Recommended SM/R board alert settings

In addition, this paper answers general questions about the features and capabilities of the SM/R board and presents solutions to known issues regarding the board. This paper is not intended to repeat information provided elsewhere or to cover Power On-Self Test (POST) errors, diagnostic error codes, or alert messages in detail. Those topics are addressed in the SM/R user manuals and in on-line documentation for the Server Manager Support Software.

This paper is divided into two major sections that discuss SM/R hardware and SM/R software respectively. If additional information on a topic is available on Compaq QuickFind, a Compaq document number for that reference is cited in this paper. To locate a document in Compaq QuickFind, search for the document number.

SM/R HARDWARE

The SM/R board is a server management tool that monitors, sends alerts, and provides information about the hardware and EISA bus of the server in which it is installed. It monitors server hardware by evaluating the signals and data available on the EISA bus. The board works continuously, even when system power is off, and sends alerts when a problem occurs. The SM/R board also includes software components that enable it to monitor the operating system as well as the server hardware. The SM/R board monitors the server hardware even if the SM/R Support Software component is not installed.

System Hardware Requirements

The SM/R board is designed to work in Compaq systems and is supported in the following Compaq hardware platforms:

- Compaq ProLiant 1000, Compaq ProLiant 1000R, Compaq ProLiant 1500, Compaq ProLiant 1500R, Compaq ProLiant 2000, Compaq ProLiant 2000R, Compaq ProLiant 4000, Compaq ProLiant 4000R, Compaq ProLiant 4500, Compaq ProLiant 4500R

- Compaq ProSignia VS, Compaq ProSignia 300, Compaq ProSignia 500

- Compaq DeskPro 386/33L, Compaq DeskPro 486/25, Compaq DeskPro 486/33L, Compaq DeskPro 486/50L

- Compaq DeskPro/M series

- Compaq Systempro, Compaq Systempro/LT, Compaq Systempro 486/33e, Compaq Systempro/XL

Monitored Items

The SM/R board monitors many aspects of the hardware including power, memory, serial port, parallel port, EISA bus, temperature, POST failures, the drive array, and the SM/R board itself. When a monitored item falls outside the specified range or set value, an alert is sent to notify the system administrator that a problem has occurred or a condition exists that may require attention. Alerts can be sent to a pager, to a management PC, or to a phone number using the voice alert feature.

Power Monitoring

The SM/R board monitors power to the system and sends out an alert when a power outage occurs, when the power cord is disconnected, or when the power is switched off. In addition it monitors the +5, −5, +12, and −12 voltage lines and sends an alert if any of the monitored voltage line readings are outside the specified range. When a power failure occurs, all four voltage lines are at zero volts, which causes multiple alerts to be sent. When using the Server Manager Facility to watch the actual voltage, it is normal to see the voltage fluctuate slightly. The normal operating voltage of one system may be slightly different from that of another system.

Refer to the section entitled "Incorrect +5V alerts on ProLiant servers using 5.2V Pentium chips" located on page 6 of the this paper.

Memory Parity and Refresh Monitoring

The SM/R board monitors for memory parity errors and tracks memory refresh cycles. Memory parity errors occur when the system detects that information has not been transferred correctly during a memory read or write operation. Memory must be refreshed at regular intervals and within the specified amount of time; otherwise, data may be lost. If this occurs, a "Lack of Refresh" alert is reported. Refresh errors may occur while the system is first starting up; that is, after a reset but before the POST begins.

Serial Port Monitoring

The SM/R board can monitor serial ports on a monitored server for parity errors, overrun errors, framing errors, and carrier detection. At installation, however, serial port monitoring is not enabled because monitoring tracks only the occurrence of serial port errors, not the occurrence of serial port failures. A serial port failure is defined as a change in the rate at which errors occur or a sudden increase in the number of errors being detected.

Serial port failures are not considered catastrophic because the server may continue operating after a serial port failure. SM/R serial port alerts are not enabled at installation and should not be used for serial port monitoring. The SM/R board will not send serial port alerts unless the system administrator sets threshold values and enables alerting.

Parallel Port Monitoring

The parallel port can be monitored to detect whether a printer is off-line, the printer cables are disconnected, the printer is out of paper, or there is a defective parallel port. At installation alerting is not active, but it can be enabled.

EISA Bus Monitoring

The EISA bus is monitored for I/O Check counts that occur when an EISA or ISA expansion board has failed. When a failure occurs, the failing board sends an I/O Check Count error to the system over the EISA bus.

Temperature Monitoring

The SM/R board monitors the temperature inside the system and sends an alert if the temperature goes outside the specified range. The default range is is 0°C to 65°C (32°F to 149°F); however, Compaq recommends resetting to the operating temperature range of the system so an alert will be sent before a temperature change becomes critical. Typically the operating range of a system is 10°C to 40°C (50°F to 104°F), but certain systems have a maximum operating temperature of 35°C (95°F). Unless the system is in a non-controlled environment, it would be more meaningful to set the range to 10°C to 35°C (50°F to 95°F). Besides the temperature of the system, the SM/R board can also monitor the change in temperature per minute.

Note that the location of the SM/R board and other boards in the system can affect air flow and temperature around the temperature sensor on the SM/R board. This may result in false alerts and inaccurate temperature readings.

POST Failures

POST alerts are sent if the system has a failure during the Power On-Self Test.

Drive Array Monitoring

The SM/R Support Software tracks many parameters of the operating system including the drive array subsystem. The most serious drive array alert that can occur is a "drive failure" or "logical drive failure" alert. A drive failure alert indicates the number of physical drives that have failed in a logical drive. The second most serious drive alert is the "percent used" alert. It indicates that the drive is almost out of space on the fixed disk. Some operating systems stop processing when all the hard drive capacity has been used.

Self-Monitoring

The SM/R board monitors its own battery, the EISA interface, and the SM/R modem.

Hardware Issues

This section contains a brief summary of known hardware issues related to the SM/R board and solutions to the issues.

In general if the SM/R board is working correctly, there is no need to upgrade the hardware, the ROMs, or the software. If the SM/R board is not working correctly, however, upgrade the ROMs and software to the latest revisions. The SM/R board revision is marked beside the battery. If upgrading the ROMs and software does not correct the issue, call Compaq customer support.

ProSignia VS hangups during a remote cold boot

When an SM/R board is installed in a ProSignia VS and a remote "cold boot" is initiated, the system will hang. An SM/R board ROM change is required to support the ProSignia VS. Upgrade the ROM to a 125712-011 release or later.

Intermittent configuration problems in Systempro/XL and ProLiant servers

The SM/R board has intermittent problems when configured in Systempro/XL and ProLiant servers. A new SM/R ".OVL" file corrects this issue by issuing a reset to the SM/R board if it does not respond within a set amount of time. This file is available in System Config version 2.22 or later.

Intermittent loss of configuration, keyboard lockups, and remote console lockups

Compaq has identified an intermittent problem on the SM/R board that results in keyboard lockups, remote console lockups, and loss of configuration. This problem typically occurs when the SM/R board is installed in 486/66 and faster systems. SM/R boards of revision level AB or later do not have this problem. The SM/R board revision is marked beside the battery.

Refer to Compaq Service Advisory 723, document number 041A/0494.

Limited PCI support

The Compaq Server Manager/R board was not designed to support the PCI bus. The Server Manager Facility/R does not display PCI devices of any kind—Compaq or third-party PCI boards, integrated PCI device, or the PCI bus processor ID. Even though the Server Manager/R product does not recognize PCI devices, it can be configured with EISA/PCI-based products so that EISA devices can be displayed.

Refer Compaq document number TIM1094.005.

Incompatibility with 16-bit QVision video cards and remote console

When using the remote console feature of the SM/R board from a remote management PC, a special incompatibility may arise. If the SM/R board is being used with a Compaq QVision or other video adapters/controllers that use 16-bit video I/O on the monitored server, the following error message will appear: MONITORED SERVER CONSOLE SCREEN IS IN GRAPHICS MODE.

Because the SM/R board is designed to monitor 8-bit video I/O, not 16-bit video I/O, the SM/R board incorrectly reports that the server is in graphics mode when it is actually in text mode. To use the remote console feature, 8-bit video is required.

Incorrect +5V and +12V alerts in ProSignia VS and ProSignia systems

In a NetWare 3.x or 4.x environment, the user may receive an incorrect "Volts +5" or "Volts +12" alert from Server Manager/R when using the CPQCAUI.NLM program option "Set All Thresholds to Their Default Values." Because the threshold requirements for the ProSignia systems are different than the threshold requirements for the Systempro systems, ProSignia users must change the thresholds to the values listed below:

> Volts +5: Lower Threshold 4800   Upper Threshold 5260

> Volts +12: Lower Threshold 11550   Upper Threshold 12900

Refer to document number TIM0294.017.

Incorrect +5V alerts on ProLiant Servers using 5.2V Pentium chips

If incorrect "Volts +5V" alerts are generated and the +5 voltage line reading reported by the SM/R Server Manager Facility/R (SMF) software is greater than 5.2 volts, the default threshold setting for the +5 volt line needs to be changed. Change the default threshold settings to these values:

> Volt +5: Lower Threshold 4800   Upper Threshold 5350.

Note: To determine whether a ProLiant server contains 5.2V chips, use the SMF to view the current voltage level.

SM/R board Revision W or later required for use with a ProSignia system or SystemPro/XL

The SM/R board went through several changes to accommodate installation into a ProSignia or Systempro/XL system. If the SM/R board is to be installed in a Systempro/XL or ProSignia system, use Revision W or later. ROM part number 125712-010 or greater is required. The SM/R board revision is marked beside the battery.

SM/R board will not configure correctly

This intermittent situation occurs only when the SM/R battery has become fully discharged after the SM/R board has gone unused for 30 or more days. If the SM/R board will not configure correctly, it may be necessary to reset the board. To reset the board, turn off the battery by pressing **Ctrl**+**Alt**+**Home** and then switch off the power to the system.

Hardware Questions and Answers

This section provides answers to typical questions about operation of the SM/R board. It answers questions regarding the LED indicators on the board, connecting to the SM/R board using the SMF software, resetting the board, and turning battery alerting on and off.

Q: What does the light beside the modem connection indicate?

A: That LED indicator identifies the status of the SM/R battery. It is normally green, which indicates that the battery is on-line and fully charged. If it changes to amber, the battery is charging. If the light is off, either the battery is disabled or the board failed the POST self-test.

Q: Why can't I connect to the SM/R board when power to the monitored server is off or disconnected?

A: If server power is lost, the SM/R board conserves power by not answering the phone. If there are pending alerts waiting to be delivered, the SM/R board will send them. However, there can be no pending alerts unless an alert destination had been defined and alerting is enabled.

If a management PC is connected to the SM/R board when system power is lost, the SM/R board will not disconnect. It will remain active until the management PC drops the connection. Once disconnected, the SM/R board will not answer or reconnect until system power is restored.

Q: Why don't the SM/R board and my modem connect?

A: Whether the connection is direct or by modem, the monitored server and the management PC must be set to the same baud rate for SMF software to connect with the SM/R board. If the baud rates do not match exactly, the management PC will NOT connect because the SM/R modem does not attempt to renegotiate at a different baud rate.

Q: How do I turn alerting on and off?

A: Alerting can be enabled or disabled by pressing **Ctrl**+**Alt**+**End** keys on the keyboard of the monitored server. When alerting is off, the SM/R board will not page or call the system administrator if a problem occurs.

When the status of alerting is changed, the server beeps. Three short beeps indicate that alerting has been enabled; three long beeps indicate that alerting has been disabled.

NOTE: Alerts generated while alerting is disabled are stored, but they are not sent if alerting is later enabled.

Q: How do I disable and enable the battery?

A: To disable the battery on the SM/R board, press **Ctrl**+**Alt**+**Home** on the keyboard of the monitored server. The only time this should be done is before installing or removing the modem or when it is necessary to delete the configuration stored in the SM/R memory. When the battery is enabled or disabled, the server will beep. Two short beeps indicate that the battery has been enabled; two long beeps indicate that the battery has been disabled. The battery status LED indicator will go off when the battery is disabled and will be either amber or green when the battery is enabled.

Q: How can I reset the SM/R board?

A: If the SM/R battery has become totally discharged before the SM/R board is installed, it may be necessary to reset the board once it has been installed in a system. To reset the SM/R board, disable the battery and then turn off power to the server.

> Note: Resetting the board will cause any configuration information or alert data stored on the SM/R board to be lost. If the Server Manager/R configuration is lost, the board can be reconfigured using the Compaq System Configuration utility.

Q: Why does the SM/R board ship with a 2400 baud modem when much faster modems are available?

A: Faster Compaq modems do not support the voice alert feature of the Server Manager/R board.

SM/R SOFTWARE

Server Manager/R software includes three components:

- Server Manager/R Support Software (SMSS)

- Compaq Server Manager Facility/R (SMF)

- Compaq Server Manager Collector/R (SMC).

SM/R software has many management features and capabilities that are similar to the features and capabilities of Compaq Insight Manager. However, Insight Manager and SM/R software work independently in the same system.

Server Manager/R Support Software (SMSS)

Server Manager/R Support Software is loaded on the server with the SM/R board. It allows the SM/R board to monitor drive array controllers and aspects of the operating system during normal operation. It is not required, however, for the SM/R board to send alerts or to support a remote console session.

Server Manager Facility/R (SMF)

The Server Manager Facility/R component does not run on the monitored server. Rather, it runs on a separate PC called the management PC and emulates the console screen and keyboard of the monitored server. Through a modem or a direct connection, the SMF retrieves information from the SM/R board installed in the monitored server. The remote console feature of SMF enables the system administrator to perform actions affecting the monitored server just as though he or she were using the actual keyboard of the monitored server. SMF is supported on Windows 3.x and DOS 5.x.

Server Manager Collector/R (SMC)

The Server Manager Collector/R component also runs on the management PC; however, it is separate from the SMF. It automates collection of information from the SM/R board. It can be configured to collect information at regular intervals from one or more servers containing SM/R boards. Once the information has been gathered, it can be loaded into a spreadsheet software package for analysis. SMC is supported on Windows 3.x and DOS 5.x. It is not supported under OS/2.

Supported Operating Systems

Server Manager/R Support Software is available on the Internet and through Compaq's download facility. Server Manager Support Software v1.40 supports the following operating systems and software versions:

- NetWare 3.11, 3.12, and 4.01 with IDA, IDA-2, and SMART drive array controllers

- SCO Open Desktop version 1.1 or 2.x

- SCO UNIX System V version 3.2v2 or later

- Microsoft OS/2 1.3 and LAN Manager v2.2

- IBM OS/2 1.3 and LAN Manager 2.0

- IBM OS/2 2.x and LAN Manager 3.0

- Banyan VINES versions 5.52(5) and 5.53(0) with IDA, IDA-2, and SMART drive array controllers

Note that Server Manager/R Support Software does not support Windows NT. Server Manager/R Support Software version 1.40 does not support Banyan VINES 4.11. For use with Banyan VINES 4.11, install Server Manager/R Support Software v1.21. Server Manager/R Support Software v1.21 does not support the COMPAQ SMART SCSI Array Controller. There is currently no SMSS support for Banyan VINES 5.0, 5.21, or 5.50(x).

The Server Manager Facility/R and Server Manager Collector/R software components are supported on the Microsoft Windows 3.0 and 3.1 platforms.

Information on SCO UNIX is provided in the Enhanced Functional Supplement for SCO UNIX, which is included the SCO UNIX package from Compaq.

Monitored Items

This section provides a brief summary in table form of every alert that is monitored by default. The alerts are grouped by the operating system with which they are associated. Tables 1 – 4 provide a quick reference for determining which monitored items are most important and why. More detail is available using the on-line help included in the Alert Message Guide for the Server Manager Facility/R and for the Compaq Server Manager/R.

System Manager/R alerts are classified under four severity levels:

- A *catastrophic* alert may indicate a hardware subsystem or software failure that stops system operation.

- A *critical* alert may indicate that a hardware or software failure has occurred or is about to occur.

- A *warning* alert indicates a condition that requires attention.

- A *status* alert provides configuration information and useful statistics.

NetWare Messages

In a NetWare environment, the SM/R board can send any of the alerts listed in Table 1. The NetWare messages of most concern are the ABEND, System Software Watchdog, and the Percentage of Space Available alerts.

TABLE 1: SM/R BOARD ALERTS PRODUCED IN NETWARE ENVIRONMENT

Alert Message	Message Number	Message Category	Threshold Value	Description
ABEND	462	Catastrophic	N/A	Indicates that an ABEND (abnormal end) condition occurred on a monitored server.
System Software Watchdog	051	Critical	N/A	Sent if the SM/R board is not receiving information from the SM/R Support Software within an expected time interval. May indicate that server operation has stopped. The default time interval of 2 minutes may need to be reset to 5 minutes. See False Watch Dog alerts discussed in section 2.3.1 of this paper.
Percentage of Space Available	445	Warning	10	Shows the percentage of available disk space in a NetWare volume. An alert is sent if the percent available is less than or equal to the threshold values.
Transaction Tracking System Enabled	417	Warning	N/A	Sent when the NetWare Transaction Tracking System (NTTS) is disabled. NTTS protects an application from data corruption by undoing incomplete transactions. Incomplete transactions may be caused by power failure, hardware failure, software failure, or a network transmission problem.
Users Locked Out	420	Warning	1	If used, the Intruder Detection feature in NetWare will send an alert if someone enters an incorrect password too many times.
Operational	446	Warning	N/A	Sent if one or more logical partitions in a monitored NetWare server are not operational.
Mirror Group Here	447	Warning	N/A	Sent if a server has a NetWare mirrored logical partition and any part of that partition is not available.
Mirrored Drives Synchronized	448	Warning	N/A	Sent only if the monitored server has a mirrored logical partition and the mirrored partition is out of sync.
Mirrored Group Okay	449	Warning	N/A	Sent if a mirrored logical partition in the monitored NetWare server is not functional.
Transmit Packet Too Big	438	Warning	1	Shows number of times a network interface controller (NIC) driver was requested to transmit a packet that is too large.
Transmit Packet Too Small	429	Warning	1	Shows the number of times a NIC driver was requested to transmit a packet that is too small.
Receive Packet Overflow	430	Warning	1	Shows the number of times a NIC driver received a packet that causes the receive buffer to overflow.
Receive Packet Too Big	431	Warning	1	Shows the number of times that incoming packets were too large for a NIC driver.
Receive Packet Too Small	432	Warning	1	Shows the number of times that incoming packets were too small for a NIC driver.
Percentage Transmit Retries	435	Warning	10	Shows the percentage of time that the NetWare server had to retry sending packets. If the actual value equals or exceeds the threshold value, an alert is sent.
Board Reset	463	Warning	N/A	Indicates that the SM/R board has been reset.

OS/2 Messages

In an OS/2 environment, the SM/R board can send any of the alerts listed in Table 2. On an OS/2 server, the System Error alert is the most important message to monitor.

TABLE 2: SM/R BOARD ALERTS PRODUCED IN OS/2 ENVIRONMENT

Alert Message	Message Number	Message Category	Threshold Value	Description
System Error	371	Warning	N/A	Sent when a system error occurs in OS/2. Nineteen different system errors will generate alerts. They include the General Protection Fault, NMI Interrupt, Invalid Opcode, and Stack Exception. A System Error alert may indicate that the server is no longer operational.
Logical Drive x Percent Used	376	Warning	95%	Shows the percentage of used disk space in a logical drive on a monitored server.

Banyan Vines Messages

In a Banyan environment, general administration information is available using the standard administration tools provided by Banyan. However, these standard tools do not send alerts when threshold values are exceeded or when a problem occurs. In a Banyan environment, the SM/R board can send any of the alerts listed in Table 3.

T ABLE 3: SM/R B OARD A LERTS P RODUCED IN B ANYON E NVIRONMENT

Alert Message	Message Number	Message Category	Threshold Value	Description
Disk Blocks Used Percentage	328	Critical	85%	Shows the percentage of disk blocks used.
Disk Status	329	Critical	N/A	Sent when the disk is not operational.
Load Average - 15 Minutes	322	Warning	100	Shows the exponential decaying averages that measure CPU activity during a 15-minute interval. The load average statistics count all processes that are waiting to run by adding the totals of the swap queue and the run queue. The load average statistics denote the rate at which processes are being added to these queues.
Message Average	323	Warning	250	Provides a 5-minute exponential decaying average of the number of server messages sent and received per second. A high value indicates the presence of heavy message traffic, but not necessarily heavy CPU activity. This average is useful only as a snapshot of message activity; it is not intended for historical reference.
Swap Average	327	Warning	10	Shows the swapping average. The swapping average is an exponential decaying average that indicates the rate of swapping, not the number of swaps.
Cache Hits Percentage	332	Warning	68	Shows the percentage of cache buffer requests that read data out of memory without accessing the fixed disk. An alert is sent if the current value is less than or equal to the threshold value.
Communication Buffer Usage Percentage	340	Warning	50	Shows the percentage of the total communication buffer size currently being used. If the usage percentage reaches or exceeds the threshold value of 50%, an alert is sent. With 50% or more buffer usage, the server may not be able to handle peak loads or transient network errors without causing drops and performance degradation.

SCO UNIX Messages

In a SCO UNIX environment, the SM/R board can send any of the alerts listed in Table 4.

T**ABLE** 4: SM/R B**OARD** A**LERTS** P**RODUCED IN** SCO UNIX E**NVIRONMENT**

Alert Message	Message Number	Message Category	Threshold Value	Description
Percentage of the Process Table Used	465	Critical	95	Shows the percentage of the maximum allowed process table entries being used in a monitored SCO UNIX server. An alert is sent if the current value exceeds the threhsold value.
Percentage CPU User	466	Warning	95	Shows the percentage of time that a processor in a monitored SCO UNIX server spent executing user applications during the "poll time" sample window. The "poll time" sample window is defined for the SCO UNIX agent in the SM/R configuration file.
Percentage CPU Kernel	467	Warning	95	Shows the percentage of time that a processor in a monitored SCO UNIX server spent executing kernel activities during the "poll time" sample window. The "poll time" sample window is defined for the SCO UNIX agent in the SM/R configuration file.
Percentage Used	470	Critical	95	Shows the percentage of hard drive capacity currently in use for a file system.
Percentage Inodes Used	471	Critical	95	Shows the percentage of inodes currently in use for a file system. Inodes are structure needed to track files and directories. They track the disk location, ownership, and access rights assigned to each file and directory.
Swap Space Available	477	Critical	variable	Shows the amount of swap space available in the swap area of the drives. An alert is sent if the current value is less than the predefined threshold value. The swap space threshold is computed by multiplying the total swap space by 5%.
Total N-block Outages	479	Critical	3	Shows the total number of N-block outages that occurred during the last "poll time" sample window. N-blocks are data buffers used for STREAMS communications. Compaq recommend using the Total N-block Outages alert only, not an individual alert for each size of N-block.

Software Issues

This section contains a brief summary of known issues related to the SM/R software components (SMSS, SMF, and SMC) and resolutions to those issues. To resolve problems associated with SM/R software, the first step is to back up the system and then to upgrade the SM/R software components to version 1.40. Version 1.40 is available on the Internet or on the Compaq Download Facility (a bulletin board accessible via modem).

NetWare Software Issues

• EISA CMOS slot mismatch errors.

   The SM/R boards are not recognized by CPQSYSMN.NLM v1.20 and earlier versions. CPQSYSMN is the NetWare v3.1x driver for SM/R. When CPQSYSMN v1.20 or an earlier version is loaded on a server, it reports an "EISA CMOS slot mismatch error." To eliminate this error, upgrade to CPQSYSMN.NLM version 1.21 or later.

   Refer to document number TIM0493.006.

• False watch dog alerts.

   Slower 386 and 486 systems and NetWare v3.1x may generate false watch dog alerts when many patches and NLMs are loaded. The patches and NLMs affect the response time of periodic messages that are sent to the SM/R board. If one of these messages is delayed too long, the SM/R board issues a false host watch dog alert. If host watch dog alerts occur for no apparent reason, then load the NLM CPQSYSMN with the -Wx switch, where "x" is the number of minutes the SM/R board waits for the message from the host. The default watchdog interval is 2 minutes. Compaq recommends using 5 minutes as the watchdog interval. To make this change, type LOAD CPQSYSMN -W5

   Refer to document number TIM1292.037.

• NetWare ABENDs when using the IDA-2 controller.

   If CPQDAIA.NLM v1.10 and NetWare 386 v3.11 are used with an IDA-2 controller and distributed data guarding is enabled, the server may ABEND. CPQDAIA.NLM v1.10 was developed before the IDA-2 controller was announced. CPQDAIA.NLM v1.11 corrects the abend issue; however, v1.20 or later is needed to recognize the IDA-2 controller fully.

   Refer to document number TIM0493.004.

• Incorrect network driver name is displayed when using IBM Token Ring drivers.

   When using the IBM Token Ring drivers, SMF displays incorrect information while viewing the "Driver Name" field of the "NIC info" attribute from the "NIC" object. The IBM Token Ring LAN driver returns data in a string of characters that is not NULL-Terminated. CPQNWIA.NLM version 1.20 or later correctly displays the information.

   Refer to document number TIM0593.002

• NetWare v4.0 ABENDs with NE3200.LAN v3.21 and CPQNWIA.NLM v1.20.

   When the NetWare v4.0 LAN driver (NE3200.LAN v3.21) and the COMPAQ Server Manager/R NetWare instrument agent (CPQNWIA.NLM v1.20) are loaded in a NetWare v3.11 server, the server ABENDs. This is corrected in v1.30 or later of CPQNWIA.NLM.

SCO UNIX Software Issue

UNIX EFS v1.40 does not correctly identify the drives on an IDA-2 controller. This version of UNIX incorrectly recognizes the drive IDs on the IDA-2 controller. It recognizes the IDs from 0 to 7 instead of 1 to 8. EFS v1.50 corrects this issue.

MS LAN MANAGER Software Issue

MS LAN MANAGER CPQMONIT v1.10 incorrectly labels drives on an IDA-2 controller as "IDA-Ex..." instead of "IDA-2..." Use CPQMONIT v1.20 to correct this issue.

Compaq Diagnostics Issue

Properly exiting the Compaq Diagnostics is imperative after installing an SM/R board in a monitored server. Alerting is disabled when diagnostics is started, and then diagnostics returns alerting to the state at which it was set prior to running diagnostics. If power is turned off or if **Ctrl**+**Alt**+**Del** is pressed while diagnostics is working, alerting will be disabled. Monitoring can be re-enabled either by properly running and exiting Diagnostics or by pressing **Ctrl**+**Alt**+**End**.

Remote Console Issues

- Keyboards on the monitored server and remote PC must match when using the remote console feature. If the two keyboards are for different countries, then the characters displayed at the monitored server may differ from the characters displayed on the remote console screen.

- Remote console does not support any graphics modes.

  The remote console feature supports only full-screen text. Graphics support over a 2400 baud modem is too slow for practical use. When the monitored PC is in a graphics mode, the management PC displays the message: Monitored Server Console Screen Is In Graphics Mode.

Software Questions and Answers

Q: How are System Configuration and Diagnostics run remotely?

A: To run System Configuration using the remote console feature, System Configuration must be loaded in the system partition on the monitored server hard drive so it can be started by pressing **F10** during POST. When System Configuration is first started, it displays COMPAQ in a graphics-based screen, and the remote console screen displays Monitored Server Console Screen Is In Graphics Mode. Press any key to change to a text-based screen and continue. Note that when the remote console is used to run the System Configuration, no changes can be made to the SM/R board settings. Press **Ctrl**+**T** for text mode when running diagnostics.

Compaq recommends not changing the drive array configuration of the monitored server remotely because doing so could result in data loss or could cause the system to hang.

Q: Why is the keyboard locked while the system beeps twice at regular intervals?

A: The system beeps twice at regular intervals to indicate that a remote console session is active. When a remote console session is active, the keyboard of the monitored server is temporarily disabled.

Q: What are the special keyboard commands in remote console?

A: **Alt+Hyphen** is used to display the Console System Menu. The Console System Menu has several options including Keyboard Pass-Through, which is used to send **Ctrl+Esc** and **Alt+Hyphen** keystrokes (see Figure 1 below). The **Ctrl+Esc** and the **Alt+Hyphen** keystrokes may be used on either the monitored PC and or the Management PC. The Keyboard Pass-Through option allows the user to specify which PC the keystrokes are sent to.

Q: I have an error message on the monitored server. Is there a way to print the screen using the remote console?

A: Press **Alt+Hyphen** to display the Systems menu. From the Systems menu, select "Copy Screen to Clipboard" to copy the remote console screen to the Windows clipboard. The **PrintScrn** key may also be used. Once the screen has been copied, it can be pasted into Notepad or another editor that can print the screen.

Q: My OS/2 server is in graphic mode and displays this message: Monitored Server Console Screen Is In Graphics Mode. How can I switch to a DOS shell using the remote console?

A: Assuming that a DOS shell is already running on the OS/2 server, press **Alt+Esc** to open the Windows task list on the management PC. Next press **Home** to go to the top of the task list, and then press **Enter**.

If the DOS shell is not selected, press **Alt+Esc** again. Next press the down arrow key once, and then press **Enter.** Continue pressing **Alt+Esc** and **Enter** until the DOS shell is selected.

NOTE: If the Keyboard Pass-Through option is not active, the monitored PC will process the **Alt+Esc** keystroke instead of passing the **Alt+Esc** keystroke to the monitored server.

Q: During a remote console session, why does the management PC screen not display fast scrolling text until the text stops scrolling?

A: The SM/R board is designed to be as passive as possible and not to interfere with any operation on the server. This includes slowing the server video to transfer all of the characters that are being displayed.
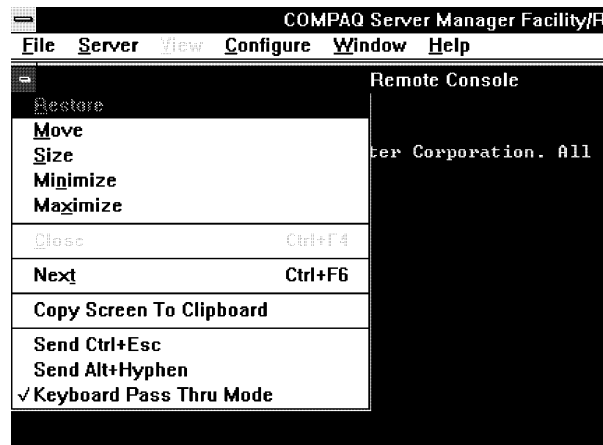

Figure 1. SM/R Console System Menu showing the Keyboard Pass-Through option.