

NetStrada 7000 (CONDOR)

CHARACTERISTICS

Microprocessor	200/66 MHz Intel PENTIUM PRO
Multiprocessor	Up to two CPU boards. Each CPU board can host up to two Pentium PRO processors totalling a maximum of 4 processors per system
Chipset	Intel Orion
Quad-bus symmetrical SMP architecture	- 64-bit Pentium PRO System Bus (for CPU, memory and PCI bridge boards), peak transfer rate of 533 MB/sec - 32-bit primary PCI (Peripheral Component Interconnect), 132 MB/sec - 32-bit secondary PCI (Peripheral Component Interconnect), 132 MB/sec - 32-bit EISA (Extended Industry Standard Architecture), 33 MB/sec
Expansion slots	Three Pentium PRO System Bus, three primary PCI, four secondary PCI, three EISA and one dual EISA/PCI
Cache	512 KB second level write-back, parity protected, synchronous cache integrated in every Pentium PRO processor
ECC RAM	32 MB to 1 GB (provided by 3.3 V DIMMs) on the motherboard 32 MB to 2 GB (provided by 3.3 V DIMMs) on the memory expansion board
Cabinet	NetStrada 7000 Silver: SILVER Wide box NetStrada 7000 Rack: 19" Wide RACK box
Video controller	Embedded on the motherboard, SVGA, compatible with the VGA modes
Video memory	1 MB
SAR feature	The Server Automatic Restart (SAR) feature hardware support is provided by the motherboard. Following a system hang caused by hardware or software failures, this feature allows the automatic reset of the system with a successive reboot to render the system available again within a short period of time and without requiring any manual intervention.
Configuration of resilience systems	All NetStrada 7000 systems are in a resilience configuration which is obtained using the RAID DPT Ultra Wide SCSI controller for the HDUs and the onboard Lance controller or, in the case of OS/2 and SCO 3.2.4.2, the GO2172 for the removables. The particular structure of the SILVER and RACK cabinets, in association with HDU redundancy (RAID-1 and RAID-5), allows the host swapping of HDUs and the automatic reconstruction of the data on the new hard disk.
Configuration of non-resilience systems	Not available on these systems.
Redundant systems	All NetStrada 7000 systems are in a redundant configuration which consists of two power supplies and two fan assemblies so that if any of the primary modules fail, all system activities can continue as normal.
Disk Duplexing	Feature which consists of dividing the basic module SCSI channel with six HDUs into two separate channels with three HDUs each. Each channel is connected to a dedicated SCSI controller in order to create two mirrored HDU/controller channels. Software support is provided by the O.S.
Peripheral Expansion Module PEM RS/RM Wide	This optional external module can only host HDUs and increases the system's mass storage capacity. The PEM for Silver systems derives from the SILVER Wide box, the PEM for Rack systems is available in Rack Wide version and can host up to 12 HDUs (twice as much as the system). The PEM Wide can only be connected to the RAID DPT SCSI controller and therefore the HDUs can always be hot swapped. Up to four PEMs can be connected to the system.
Dual Host	Possibility of dual host configurations using the RAID DPT SCSI controller for the management of the HDUs in the PEM. The configuration consists of two basic modules connected to 1 or 2 Wide PEMs; in case one of the two systems fails, the other can take control of the HDUs shared in the PEM.

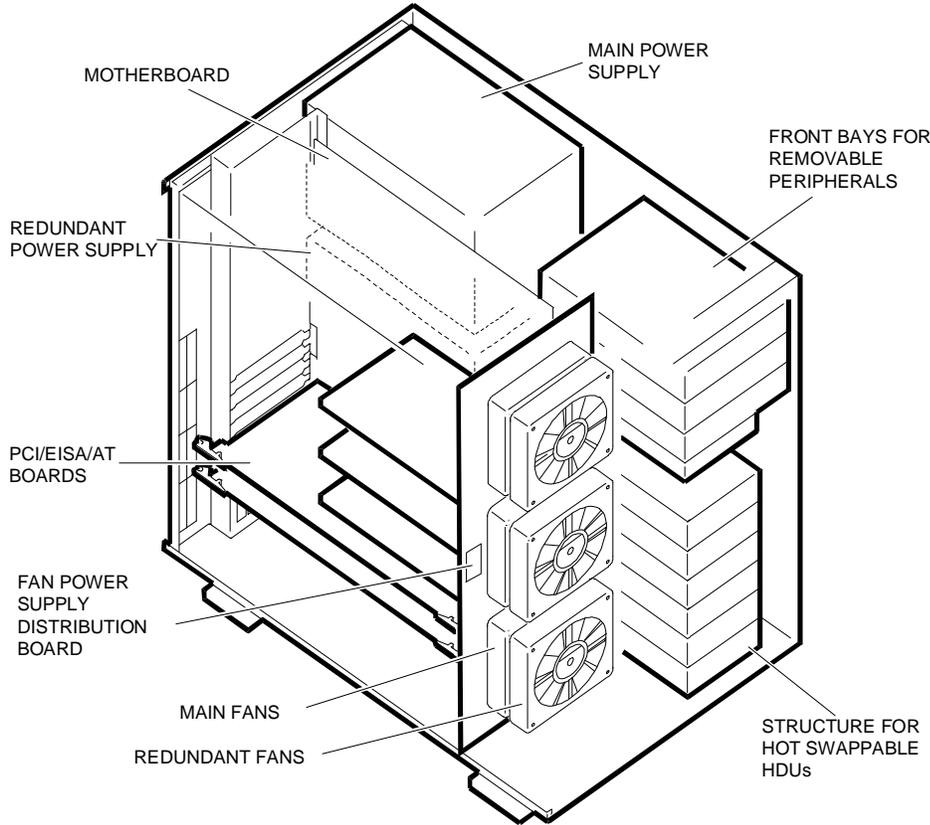
<p>Uninterruptible Power Supply</p>	<p>External, battery-equipped, Standard and Rack UPS models are available which provide constant power supply to the system in the event of AC line voltage failures. To safeguard the integrity of the data stored on the hard disks in the event of line voltage failures, resilience systems equipped with the SCSI RAID DPT controller must have a UPS.</p>
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Note: The systems in a 19" rack differ from those in a Silver box for the possibility of being hosted in a Rack module which also contains other components such as monitor, keyboard, UPS, PEM.

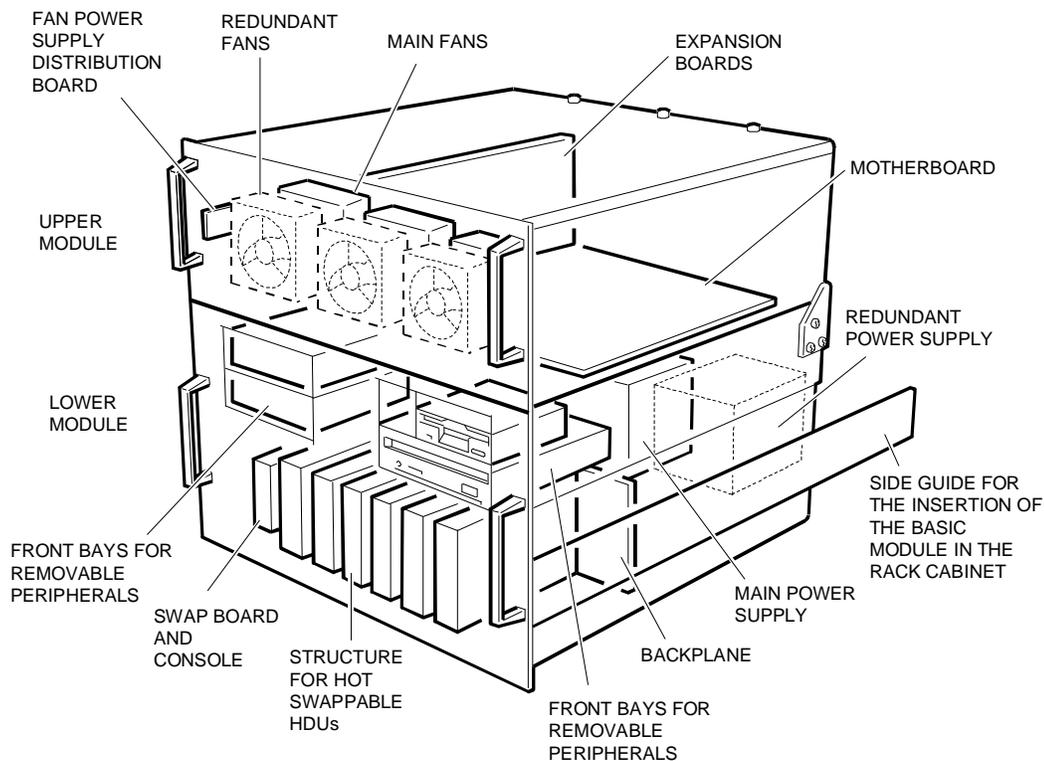
Note: The commercial name of the NetStrada 7000 remains unchanged for the Silver and Rack box versions. For simplicity and whenever necessary, this guide will distinguish between these versions as follows:

- NetStrada 7000 Silver
- NetStrada 7000 Rack

NETSTRADA 7000 SILVER BASIC MODULE



NETSTRADA 7000 RACK BASIC MODULE



UPDATE LEVELS OF THE MAIN COMPONENTS ON THE FIRST SERIES NETSTRADA 7000 MODELS

MOTHERBOARD	CPU BOARD	TERMINATOR CARD
BA2263 Rev G / BA2323	GO2065 Rev E	MI2100
BIOS	RAID DPT SCSI CONTR.	POWER SUPPLY
Rev. 2.03	GO2173 lev. Nasc FW 7H0	PS45 lev. 03
CONFIG. ON ORCHESTRA	SYSTEM TEST	
Conf. 1.03, Diagn. 1.02	Rel. 1.02	

Note: All the evolutions of the components are described further on, in the related sections.

OPERATING SYSTEMS

	Release tested with product avail.	Monopro. Cert.	Multipro. Cert.	Additional Multipro. Software	Notes
Windows 95		Yes	No		For single-user, single-task, graphical environments.
Windows NT Server and Service pack 4	3.51	Yes	Yes	O.S. included	For network management.
Windows NT Server	4.0	Yes	Yes	O.S. included	For network management.
NetWare 3.x	3.12	Yes	No		For network management.
NetWare 4.x	4.11 SMP	Yes	Yes	SMP	For network management. The SMP for symmetrical multiprocessing is on the Orchestra CD-ROM.
UnixWare	2.01	Yes	Yes	O.S. for up to two CPUs included. Unix Applic. Server for the 3 rd and 4 th	For multiple-user, multiple-task environments. UnixWare Application Server is distributed by Novell.
SCO Open Server	5.02	Yes	Yes	O.S. included	For multiple-user, multiple-task environments.
OS/2 R2.1 +Fix Pack98 +Lan Server 4.0	2.11 SMP	Yes	Yes		For single-user, multiple-task environments.
OS/2 + FixPack XR_W023	3.0 (Warp)	Yes	Yes		For single-user, multiple-task environments.

MONITORS

MODEL	DESCRIPTION	SUPPLIER	PDG NAME
CDU 1460/MS	14", VGA Plus, SVGA, 0.28 dp, MPR II/PS/DDC1, 64 KHz, Multifunct. color monitor	Hyundai	DSM 50-144
CDU 1564/MS	15", flat screen, VGA Plus, SVGA, 0.28 dp, MPR II/O.S., FTS, Multisync. color monitor	Hyundai	DSM 50-151
CDU 1786/D	17", flat screen, VGA Plus, SVGA, 0.25 dp, MPR II/PS/DDC1, 82 KHz Diamond, Tron Tub. color monitor	Mitsubishi	DSM 50-175
CDU 1448/MS	14" VGA Plus; SVGA, 0.28 dot pitch, MPR II/PS/DDC, 48 KHz, Multifunct. color monitor	Lite-On	DSM 60-400
CDU 1564/OD	15" flat screen, VGA Plus, SVGA, 0.28 dot pitch, MPR II/DCC1, 28/64 KHz	Goldstar	DSM 60-510

KEYBOARD AND MOUSE

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PDG	DESCRIPTION
ANK 61-104	104-key "WIN95" keyboard + cable.
ANK 61-105	105-key "WIN95" keyboard + cable.
GRD 50-S35/3T	Three-button high resolution mouse + management software

Note: The WIN95 keyboards do not contain the basic module's power cord in their box. This power cord must be ordered separately using code CBL 2307.

MAGNETIC PERIPHERALS

MODEL	TYPE	INT.	CAP.	SIZE	PDG NAME
Y-E Data YD-702D-6537D Sony MPF520-3 Mitsumi D359T5 Panasonic JU-257A 746P	MFD	SA450	1.44 MB	3.5"	Under BU
Wangtek 51000HT (std front panel) Tandberg TDC4120	STU	SCSI	1/1.2 GB	5.25" HH	STS 1G-95
Hewlett Packard HP C1536A Sony SDT-4000 (with mechanical adapter for 5.25" bays)	DAT	SCSI	2/8 GB	3.5"	DAT 4000DDS
Hewlett Packard HP C1533A Sony SDT-7000 (with mechanical adapter for 5.252 bays)	DAT	SCSI	4/16 GB	3.5"	DAT 8000DDS2
Panasonic CR-506-B (8X)	CD-ROM	SCSI	650 MB	5.25" HH	CDR 8S-500
Seagate ST31051WC (SCA conn.)	Wide 5400 rpm HDU	SCSI	1.05 GB	3.5" x 1"	HDR 1G
Seagate ST32151WC (SCA conn.)	Wide 5400 rpm HDU	SCSI	2.1 GB	3.5" x 1"	HDR 2G
Seagate ST32171WC (SCA conn.)	Ultra-Wide 7200 rpm HDU	SCSI	2.1 GB	3.5" x 1"	HDR 2G72-UW
Seagate ST34371WC (SCA conn.)	Ultra-Wide 7200 rpm HDU	SCSI	4.2 GB	3.5"x 1"	HDR 4G72-UW
Seagate ST19171WC (SCA conn.)	Ultra-Wide 7200 rpm HDU	SCSI	9.1 GB	3.5"x 1 .6"	HDR 9G72-UW

Note: - The HDUs that are compatible with this system and with the PEM are hot swappable drives fixed on an appropriate support and equipped with an 80-pin SCA (Single Connector Attachment) interface connector that allows direct connection to the system and PEM backplane.
 - In RAID configurations, always use HDUs with the same speed (all 5400 RPM or all 7200 RPM).
 - The Ultra Wide HDUs available for this system only work in the Fast Wide mode since they are always connected to a Fast Wide controller.
 - The 9.1 GB ST19171WC HDU can only be fitted in the rack BUs if the environmental temperature of the location where the BU is installed is ≤ 25 degrees Centigrade.

ELECTRONIC BOARDS

BOARD NAME	DESCRIPTION	BUS	PDG NAME
BA2263/2323/ 2310	Motherboard with 15 expansion slots, eight DIMM sockets for a system memory ranging from 32 MB to 1024 MB, Lance SCSI Wide controller, SVGA video controller, 1 MB video memory, 512 KB BIOS Flash EPROM, floppy disk controller, 2 serial ports, parallel port, keyboard and mouse management.	-	Under BU
GO2065	CPU board with a 200/66 MHz Pentium PRO processor installed in ZIF Socket 7, a second ZIF socket for a second optional 200/66 MHz Pentium PRO processor, 512 KB second level cache integrated in every processor. One or two CPU boards can be installed in the system for a total of 4 processors.	Sys bus	Under BU or APB 200/P6-P512
	Additional 200 MHz Pentium PRO processor with a passive heatsink and a VRM.	-	APU 200 P6-P512
ME2047	Memory expansion board with 8 DIMM sockets for a memory capacity ranging from 32 MB to 1024 MB.	Sys bus	
GO2172	Single-channel single-ended Ultra Wide SCSI controller based on the Adaptec AIC 7880 chip. On this system, this controller is only used with the OS/2 and SCO 3.2.4.2 operating systems for the connection of internal removable peripherals, HDUs excluded.	PCI	SCC PCI 114UW
GO2173 (PM3334UW) (RAID DPT)	Single-/tri-channel single-ended Ultra Wide SCSI controller with hard disk hot swapping RAID-0, 1, 5 features. The second and third channels are optional and are provided by means of a board plugged into the specific socket on the controller board. The controller is also equipped with four sockets for the installation of ECC cache; one socket with 4 MB is always filled. This system is always configured with at least one GO2173 controller for the connection of HDUs.	PCI	Under BU or DCR PCI1/3UW
IF2065 (SX4030/1UW)	Piggy back board providing the second Ultra Wide SCSI channel (external only), on the GO2173, internal SCSI Wide cable for connection between the board and SCSI connector flush with the system frame.	-	EXP 2NDSCSIUW
IF2066 (SX4030/2UW)	Piggy back board providing the second and third Ultra Wide SCSI channels (external only), on the GO2173, two internal SCSI Wide cables for connection between the board and SCSI connectors flush with the system frame.	-	EXP 2&3SCSIUW
MEM 2027 (SM4000/4)	One 4 MB ECC SIMM for cache expansion on the GO2173 controller. Maximum expansion is obtained by adding three kits for a total of 16 MB. Only 4 MB and 16 MB configurations are supported.	-	RACME 04
IF2046/2067	SCSI Wide backplane for the connection of the HDU to the SCSI controller and to the power supply.	-	Under BU and PEM Wide
IF2031	Swap Board for the console LED interface.	-	Under BU and PEM
IF2022	Jumper board joining the backplane's two SCSI buses. Used in non-duplexing configurations.	-	Under BU and PEM
IF2024	Terminator board to separately terminate the two SCSI buses of the basic module backplane. For duplexing configurations only. The kit also contains the internal SCSI Wide cable for the connection of the backplane to the SCSI controller.	-	DUPKIT240W DUP KIT240RM/W
IF2015	Fan power supply distribution board.	-	Under BU

BOARD NAME	DESCRIPTION	BUS	PDG NAME
IF2035	Power supply parallelism board for RS systems. In addition to the board, the redundancy kit also includes the second PS45 power supply, three fans with related support, motherboard-IF2035 connection cable, IF2035-SCSI backplane connection cable, current share cable for the connection of two power supplies. The board is also provided in the PEM RS redundancy kit.	-	RED KIT200
IF2034	Power supply parallelism board for RM systems. In addition to the board, the redundancy kit also includes the second PS45 power supply, three fans with related support, motherboard-IF2034 connection cable, IF2034-SCSI backplane connection cable, current share cable for the connection of two power supplies. The board is also provided in the PEM RM redundancy kit.	-	RED KIT240RM
GO2057 (Stallion)	32-channel RS232D multiport board. The kit also contains the cable for connection to the DBOX	EISA	C-MUX8-32E
BOX 800	8-way RS232D DBOX for Stallion (Max 4)	-	DBOX 800
BOX 1600	16-way RS232D DBOX for Stallion (Max 2)	-	DBOX 1600
(supplier Olicom)	Token Ring 16/4 LAN controller	PCI	OC 3137
(supplier Z'NYX)	Ethernet COMBO (10BaseT + COAX) LAN controller	PCI	ZX312
(supplier 3Com)	Etherlink III, 10Base_T LAN controller	EISA	3C592 TPO
(supplier 3Com)	Etherlink III, 10Base_T + COAX LAN controller	EISA	3C592 COMBO
(supplier 3Com)	Etherlink III, 10Base_T LAN controller	PCI	3C900 TPO
(supplier 3Com)	Etherlink III, 10Base_T + AUI + COAX LAN controller	PCI	3C900 COMBO
(supplier 3Com)	Etherlink III, 10Base_T 16-bit LAN controller Used only in dual host configurations with ADHA, and only if another Ethernet 10Base_T LAN board installed in the system	ISA	3C509 TPO
(supplier 3Com)	Fast Ethernet 10/100 LAN controller	PCI	3C905 TX
(supplier 3Com)	FDDILink-F 32-bit LAN controller	EISA	3C771A
(supplier 3Com)	FDDILink-UTP 32-bit LAN controller	EISA	3C775A

Note: Different LAN and WAN controller boards can be installed in the system. The table above only lists the more recent ones, listed in the PdG.

POWER SUPPLIES AND SPS

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

SERIAL AND PARALLEL CONNECTION CABLES

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

INTERRUPT LEVELS

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

DMA CHANNELS

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

SYSTEM MEMORY MAP

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

DEVICE ADDRESSES ON THE PCI AND PENTIUM PRO SYSTEM BUS

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

POWER ON DIAGNOSTIC MESSAGES

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

SYSTEM CONFIGURATION UTILITY

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

ORCHESTRA SYSTEMA CD-ROM

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

CONFIGURATION OF OPTIONAL BOARDS

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

NOTES ON THE CONFIGURABILITY OF AT LINE BOARDS

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

REDUNDANCY

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

MOTHERBOARD BA2263 / BA2323 / BA2310

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

The only differences are listed below:

- Pentium PRO internal clock selection jumpers (JP2, JP3, JP4, JP5) are always set to 200 MHz.
- The onboard Lance SCSI controller is only used for the connection of internal removable peripherals and any external peripheral connected. HDUs are not connected to this controller. Internal Wide connector J28 is not used.

CPU BOARD GO2065

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

The GO2065 CPU board for the NetStrada 7000 is always the version equipped with the 200 MHz Pentium PRO processor.

TERMINATOR BOARD MI2100

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

MEMORY EXPANSION BOARD ME2047

Refer to the related section in the chapter entitled SNX 460/RS/RM Systema.

NOTES AND LIMITATIONS

CONFIGURATION

- If the user decides not to use some of the HDUs present in the system and removes them from the rack, they must be completely removed to avoid the HDU slides from causing the loss of the hot swapping feature.
- On systems connected to PEMs and with disks connected to different channels of the same controller (RAID DPT), the system and PEM must be powered on or off only from the UPS. The system and PEM power switches must be locked in the ON position.
- After typing Ctrl-Alt-Del, wait 15 seconds for the system to begin the POD routine; the same occurs when the system is rebooted by an operating system command (software reset).
- To flash BIOS 2.03 on the system, use the "FEPROM_UTILTY_SNX460 - r1.02" utility.
- When using network cards installed in PCI slots, run the Configuration Utility to check that the I/O addresses of the boards are not at ISA addresses or aliases (for example, 500H, 600H, 700H).
- If the system is equipped with an RAID DPT Ultra Wide SCSI controller, run the Configuration Utility to check that the controller I/O port address is set at FC00H. When the system is rebooted and other boards are installed in the PCI bus slots, ignore if an I/O port address other than FC00H is displayed for the DPT controller during the POD.
- If the incorrect password is entered, type the correct one twice.
- To avoid problems with the configuration utility, do not configure the DPT board at I/O address FC88H.
- Do not use the "List" option of the Z'NYX board diagnostics.
- There is no 128 KB gap between 512 and 640 KB in mega 0. This prevents the mapping of DPM boards in that area.
- For a correct system setup, activate System Configuration from Orchestra and select the following options in this order: Configure System, Standard Configuration, Select Step 3: View or Edit Details.
Using the cursor movement keys, go to "Primary Operating System" and select:
 - "Unix, Novell, Windows NT, OS/2, Other (Multi-Processor)" for all operating systems, single or multiprocessor, with the exception of single-processor UNIX operating systems.
 - "Unix, Novell, Windows NT, OS/2, Other (Single-Processor)" for single-processor UNIX operating systems.
 - Press the F10 key to save the configuration, then reboot the system.

OPERATING SYSTEMS

- The SCO 3.2.4.2 operating system is not supported on these systems.
- If the Z'NYX board driver needs to be loaded under Novell 4.11, save the MSM.NLM file installed by Novell 4.11, install the Z'NYX driver and then replace the MSM.NLM file with the one previously saved.
- To install the ZX312 driver from Orchestra on a NT4.0 system, first copy the driver to the HDU and then install it.
- The SCO 3.2.4.2 and IBM OS/2 operating systems cannot handle the secondary PCI slot and therefore the PCI boards must be installed on the primary PCI bus. The notes listed below are the result of this limitation:
 - Being connected to the secondary PCI bus, the onboard Lance SCSI controller cannot be used with these operating systems. Therefore in order to be able to connect removable peripherals, order the GO2172 Ultra Wide SCSI controller and install it on the primary PCI bus.
 - With these operating systems the DPT SCSI controller must be installed on the primary PCI bus; for all other operating systems it must be installed on the secondary PCI bus.
- Proceed as follows before installing the UnixWare 2.1 operating system and when a RAID DPT Ultra Wide SCSI controller is installed:
 - Boot the system using the Orchestra configurator.
 - Set the controller's "ROM BIOS ADDRESS" to D0000H.
 - Exit from the configuration procedure using the "Save" option.
 - Reboot the system.
 - During the POD, make sure that the onboard Adaptec AIC7870 SCSI controller is set at address C800H and the DPT controller at address D000H.
 - Install the operating system.

