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Prioris™ HX 6000 and MX 6266 Series Servers

Service Maintenance Manual Addendum

ER-B40WW-SA. A01

This addendum to the *Prioris Service Maintenance Manual* is intended to assist service personnel in troubleshooting a failed component within the **Pentium® II Processor Module**, or diagnosing an incorrectly installed upgrade kit. This addendum also provides:

- a product comparison chart indicating the differences between the Pentium Pro and the Pentium II Series servers

- a Pentium® II processor module spare parts list common to both HX and MX servers

- a Pentium® II processor module spare parts list specific to each server

- general troubleshooting techniques

- troubleshooting techniques not covered in the HX 6000 and MX 6266 Series Server System Reference manuals

- product changes as reflected in the **Pentium® II Processor Module Installation Guide**, which is part of this package

The Pentium® II processor module upgrade kits allow you to upgrade the server to a single or dual Pentium® II processor configuration. The Pentium® II processor module also allows you to install up to 512 MB of EDO/ECC server memory.

Note that Dual In-Line Memory Modules (DIMMs) must be ordered separately and installed on the Pentium® II processor module prior to installing it in the server.

Differences Comparison Chart

Item	Prioris HX 6000 and MX 6266 Series Servers	
	Pentium Pro	**Pentium II**
Processors	Pentium Pro	Pentium II
Clock Speed	200 MHz	266 MHz
System Bus Speed	66 MHz	66 MHz
Form Factor	Socket 8 (PGA)	Single Edge Contact (SEC) cartridge
Number of CPUs	2	2
L1 Cache (Instruction/Data)	16 KB	32 KB
L2 Cache	Internal	External (in SEC cartridge)
L2 Bus Speed	Full speed	Half speed
L2 ECC	Yes	512 KB only
L2 Cache Size	256/512 KB	512 MB
MMX Instructions	No	Yes
Memory	All ECC	All ECC
Type	SIMM (EDO and Fast Page)	DIMM (EDO)
Standard	32 MB (HX), 16MB (MX)	64 MB (HX), 32 MB (MX)
Maximum	1 GB	512 MB

Pentium II Module Spare Parts List

Order Number		Description
Common Parts		
20-48989-01		Voltage Regulator Module
54-25302-01		Terminator Card
54-25304-01		Pentium II Processor board without processor
FR-PCB4U-AE		Pentium II Processor board with single processor, terminator, and VRM
20-47083-D7		32 MB DIMM
20-45790-D7		64 MB DIMM
20-45608-D7		128 MB DIMM
70-31468-44	(FR-CECAA-CA)	4 GB 5400 RPM Ultra Wide SBB
30-49113-01	(FR-PCTAR-GA)	1 Channel PCI RAID Ultra Wide adapter with EDRAM
30-49113-02	(FR-PCTAR-GB)	2 Channel PCI RAID Ultra Wide adapter with EDRAM
30-49113-03	(FR-PCTAR-GC)	3 Channel PCI RAID Ultra Wide adapter with EDRAM
54-24602-01	(FR-DE500-AA)	PCI Fast Ethernet 10/100 (Digital Equipment Corp.)
30-48628-01	(FR-PCXDN-BA)	PCI Fast Ethernet 10/100

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Order Number		Description
HX parts only		
FR-PCB5U-AE		Pentium II Processor upgrade (processor with heat sink and VRM)
74-49386-42		Nameplate, Prioris HX 6000
30-48622-01	(FR-PCXLT-AD)	DLT 7000 35/70 GB
30-48985-01	(FR-PCSBR-AA)	SCSI Bus Expander
FR-CK450-RP		RAID Array 450 NT Cluster Kit, pedestal
MX parts only		
FR-PCB4U-AD		Pentium II Processor upgrade (processor with heat sink and VRM)
74-51963-02		Nameplate, Prioris MX 6266
20-47140-D7		16 MB DIMM
30-48094-01		Sony 7000 4/8 GB DAT (SCSI)

Refer to the Prioris HX Service Maintenance Manual (ER-B50WW-SM. A01) and the Prioris MX Service Maintenance Manual (ER-B40WW-SM. A01) for system level part replacement procedures and spare parts listings.

Troubleshooting

If the server does not respond to the enhanced CPU/Memory features provided by the **Pentium® II Processor Module** upgrade kit, use the procedures in this section to identify the problem to get the server back on-line. Initial troubleshooting steps include the following:

- Record all configuration information and have it readily available.
- Verify that all cables are seated properly.
- Verify that all cards, boards, and modules are seated properly.
- If both CPU *and* memory errors are detected, try not to troubleshoot both at the same time. Isolate and correct one problem before addressing the other.

Power-On Self Test

The Prioris HX 6000 or MX 6200 Series server's Power-On Self Test (POST) can detect some CPU and memory errors when it boots. The error can be isolated to a single CPU or to a single DIMM on the Pentium® II Processor module.

Power up the server and allow the POST to complete. If the POST detects any problems, use the error messages provided to correct the problem. POST messages are displayed on the monitor, the OCP, or front panel LEDs. Typical POST messages include:

- Terminator card missing
- Processor over temperature
- Processor failures
- Shutdown, fan fault
- Missing processor
- Correctable and uncorrectable memory errors

AMI Diagnostic Software

AMI Diagnostic software is shipped with the server on the Quick Launch CD-ROM. This software contains an advanced set of diagnostic utilities for identifying and correcting problems with the server. AMI Diagnostic software can be used to verify proper hardware installation and isolate intermittent problems that are not detected by the Power On Self Test (POST).

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The AMI Diagnostic program is a stand-alone MS-DOS package that can be run from diskette or from the DOS partition on the server's hard disk.

The AMI Diagnostic software includes:

- AMIDiag Base Diagnostic (processors, memory, and mother board components tests)

- Digital Vendor Extended Tests (SCSI, Network, storage, etc.)

- AMIDiag User's Guide.

For additional information on running the AMI Diagnostics, refer to the on-line manual, which is located under "Additional Documentation" on the Quick Launch CD-ROM and to the Readme.txt file on the AMI Diagnostics diskettes.

The latest AMI Diagnostic program information is available on the Digital intranet at:

http://pcbu.ako.dec.com

Select "Server", then "Software", and then "Released Diagnostics" to get to the diagnostics home page.

Creating Diagnostic Diskettes

You can create diagnostic diskettes by using the Quick Launch CD-ROM. Creating diskettes allows you to run the diagnostics at any time for troubleshooting purposes or for testing system components. There are several AMI diskettes, the first diskette is the AMIDiag Base Package or Emergency Mode diskette. Additional diskettes contain the Digital Vendor Extended Tests.

To create the diagnostic diskettes, perform the following:

1. Insert the Quick Launch CD-ROM into the drive and boot the server. From a PC or workstation, use Windows File Manager or Explorer and run:

   <cd-rom>:\QLAUNCH.EXE.

2. From the Quick Launch main menu, select **Installations & Utilities**.

3. Select the **Utilities** tab and then select the product family.

4. Insert a blank MS-DOS formatted diskette into drive A and select **Diagnostics**.

5. Select Continue. When completed, remove the diskette for safekeeping.

6. Select the next diagnostic diskette from the list and select Continue. Create all the diskettes labeled "Diagnostics".

Running the Diagnostics

To run the AMIDiag Base Package (Emergency Mode diskette) from diskette, follow this procedure:

1. Insert the diskette labeled "For Emergency Use" in drive A and boot the server.

2. Use the arrow keys to highlight the desired test.

3. Press Enter.

Quick Tests or Groups of Tests

Function keys can be used to select and run groups of tests. A list of function keys is available by pressing the F9 key. The following list includes examples of how to run Quick Tests or Groups of Tests.

- To run Quick Test, press F8 to select tests, then F10 to run all the selected tests.

- To run all Memory tests, press F6 to select tests listed on the menu, then press F10 to run all the selected tests.

- To run all tests from all of the menus, press F7 to select all tests, then press F10 to run all the selected tests.

To run Digital Vendor Extended Tests from diskette:

1. Insert the Digital Vendor Extended Tests diskette for the device to test and boot the system or type A:\DMENU.

2. Select the desired test.

Each diskette has a Readme file with a list of devices that may be tested and additional information about each diagnostic.

To run diagnostic tests from the server's hard disk, perform the following:

1. Boot the system and select Programs, then MS-DOS Prompt from the Start menu.

2. At the C> prompt, type \DIAG\DIAGNOSE.BAT. This will setup the CONFIG.SYS and AUTOEXEC.BAT files properly to run the diagnostics and then reboots the system to load the AMIDiag program. Note that the original CONFIG.SYS and AUTOEXEC.BAT are restored before the diagnostics are loaded.

3. Select the test or group of tests using the arrow keys and function keys previously defined. Digital Vendor Extended Tests may also be run from the User menu.

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Additional Troubleshooting Information

For additional troubleshooting information on your Prioris HX 6000 or MX 6200 Series server that is not covered in this guide, refer to the following:

Prioris HX 6000 System Reference (Part Number: ER-B50WW-UA. A01)

Prioris MX 6200 System Reference (Part Number: ER-B40WW-UA. A01)