

# Prioris<sup>™</sup> HX and HXDP Server Powergrade Kit

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## Installation Guide

Order Number: ER-PC88U-IA. A01

**Digital Equipment Corporation**

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This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio and television reception; however, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

DO NOT attempt to modify this equipment. If modified, the FCC may void your authority to operate this equipment.

### **Canadian Department of Communications Statement**

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

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## Conventions

Symbol	Meaning
	<b>NOTE:</b> Provides general information.
	<b>CAUTION:</b> Provides information to prevent damage to equipment.
	<b>WARNING:</b> Indicates the presence of a hazard that can cause personal injury if the hazard is not avoided.



**NOTE:** You may lose data if you have not backed up your system. If you do not wish to install this kit yourself, contact Digital Customer Service. For a nominal fee, a Customer Service Technician can install it for you.

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## Prioris™ HX and HXDP Server

### 5166 CPU Powergrade Kit

## Introduction

Thank you for purchasing the Prioris™ HX or the HXDP Powergrade Kit. These Powergrade kits contain all the components and instructions required to upgrade your CPU configuration to one of the following:

Model	Processor
Prioris™ HX (P5166)	1 - Intel® Pentium® 166 MHz
Prioris™ HXDP (P5166DP)	2 - Intel® Pentium® 166 MHz

## Kit Contents

Table 1 lists the contents of the Prioris HX and HXDP Powergrade kits.

**Table 1. Kit Contents**

	Kit Number: FR-PC88U	-AE	-AF	-AG	-AH*	-AI*
Pentium® 166 MHz (P5166) CPU chip		✓				
CPU board 1 Pentium® 166 MHz CPU			✓			✓
CPU board 2 Pentium® 166 MHz CPUs				✓	✓	
Main logic board					✓	✓
Voltage regulator board			✓	✓	✓	✓
BIOS update diskette		✓	✓	✓	✓	✓
SCU diskette		✓	✓	✓	✓	✓
Crisis recovery diskette		✓	✓	✓	✓	✓
Prioris HX medallion (product nameplate)		✓	✓	✓	✓	✓
Antistatic wrist strap		✓	✓	✓	✓	✓

\* These kits are used when a Main Logic Board does not meet upgrade specifications; in which case, a new MLB is included in the kit, which requires Digital MCS installation.

## Tools Needed

- Phillips screwdriver, 1 pt.
- Antistatic wrist strap with grounding clip (supplied)

## Update Your BIOS

A diskette containing the required BIOS (Basic Input-Output System) software is included with the Powergrade kit. BIOS is software that is in a nonvolatile read-only memory (ROM) chip, which is on the main logic board of your computer. The BIOS has several functions, including initializing hardware and booting the operating system when the computer is turned on.

You **must** install the new BIOS before installing your Powergrade kit. When updating the BIOS, you must remove any video option card and enable the onboard VGA.

## Power Down the Server

1. Turn off your server.
2. Disconnect any external devices, the **ac power cord**, and the monitor power cord.
3. Unlock the security lock at the back of the server.
4. Remove the left side panel by sliding it toward the rear of the system.



**WARNING:** You might injure yourself or damage your server if you attempt to remove the side panel before unplugging the ac and monitor power cords.

## Check the Jumper Settings

Make sure that the following jumpers are enabled:

J17(Figure 1)	Onboard VGA	Enabled (On)
J28	Boot Block	Enabled, jumper pins 1-2

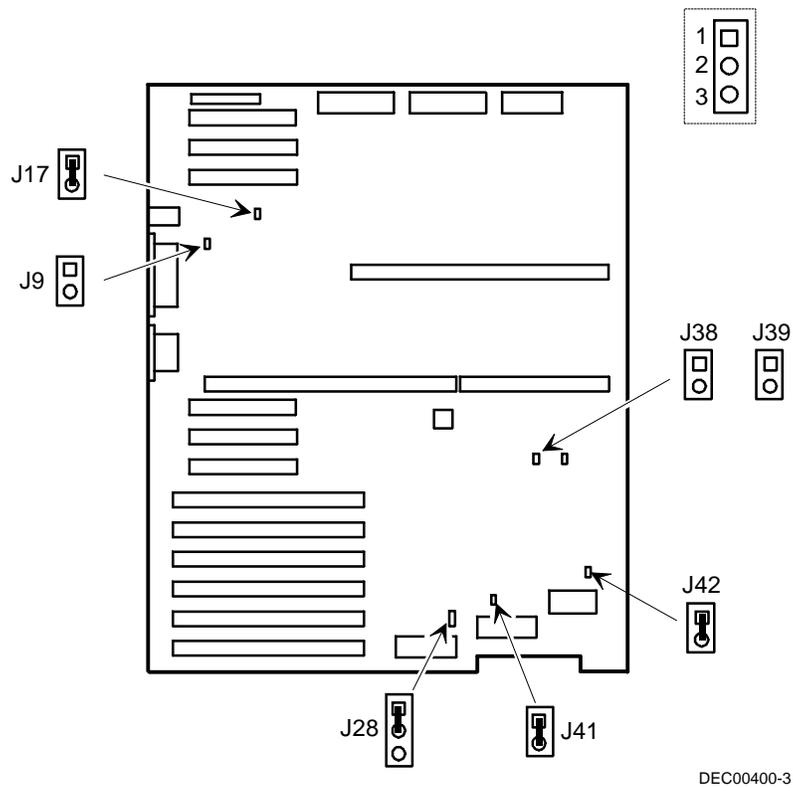


Figure 1. Main Logic Board Jumper Locations

## Replace the Panel and Reconnect the Cables

1. Install the left side panel.



**NOTE:** The server will not power up with the side panel removed.

2. Connect the cables, the monitor power cord, and the server power cord to the back of the server.

## Power Up the Server and Update Your BIOS

1. Turn on your server and allow the POST to complete.
2. Insert the startup utilities diskette.
3. At the MS-DOS prompt, change the directory to A:\UPGRADE and type:  
PHLASH
4. Press Enter to continue. PHLASH automatically updates your server's BIOS, and after the flashing process completes, the server automatically reboots itself.
5. Remove the startup utilities diskette.

## Powergrade Installation

### Power Down the Server

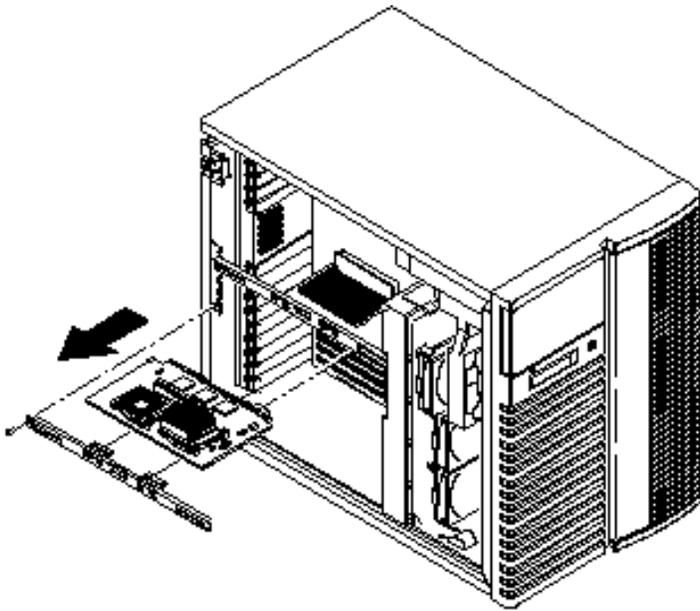
1. Turn off your server.
2. Disconnect any external devices, the **ac power cord**, and the monitor power cord.
3. Remove the left side panel.



**NOTE:** Remember to return jumper J28 to its disabled position (jumper pins 2-3) to prevent unauthorized personnel from changing the BIOS boot block.

## Remove the CPU Module

1. Place the antistatic wrist strap on your wrist and connect the grounding clip to a non-painted metal surface of the computer's chassis.
2. Using a Phillips screwdriver, unscrew and remove the CPU module retaining bracket (Figure 2).
3. Carefully remove the old CPU module from the main logic board and place it on an antistatic surface.



**Figure 2**

**Figure 2. Removing the CPU Module**

## Install a Second CPU Chip (Kit FR-PC88U-AE Only)

The CPU module has either one or two Intel® Pentium CPUs mounted with heat sinks in socket 5 type ZIF sockets. If you are upgrading the existing CPU module from a single processor to a dual processor (kit FR-PC88U-AE), install the new Pentium Processor chip as follows:

1. Unlatch and lift up on the release lever.
2. Identify which corner of the CPU chip is beveled (item A in Figure 3) and position it correctly on the CPU module.
3. Install the CPU chip. The arrangement of the pins is keyed for correct placement.
4. Return the release lever to its original position.

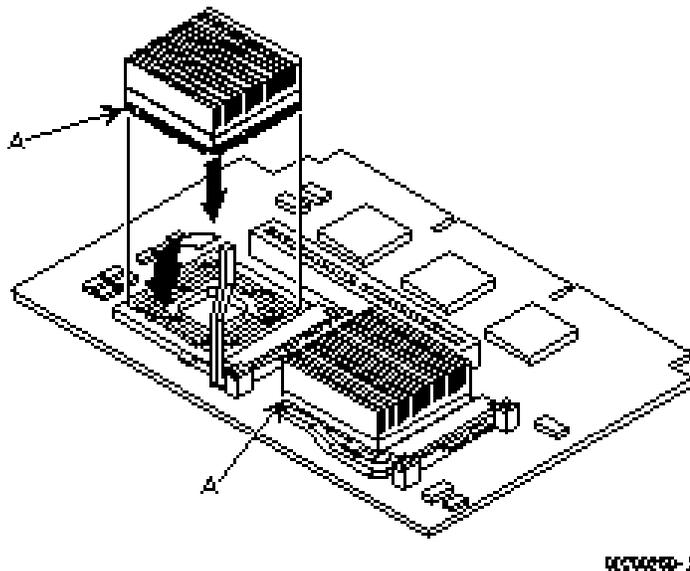


Figure 3. Installing a Second CPU Chip

## Move the Secondary Cache

If you are replacing the CPU module with a new CPU module (kit number FR-PC88U-AF, -AG, or -AH), move the secondary cache (if present) from the old CPU module to the new CPU module. Seat the cache firmly into the socket (Figure 4).

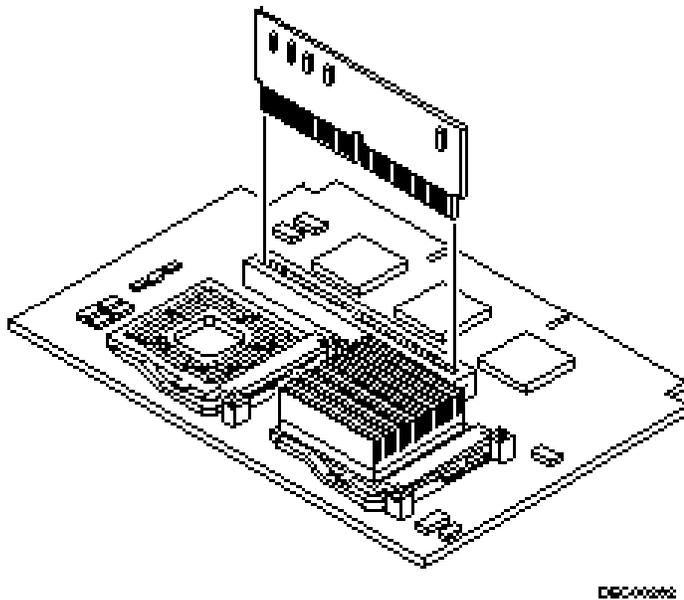


Figure 4. Moving the Secondary Cache

## Install the Voltage Regulator Module

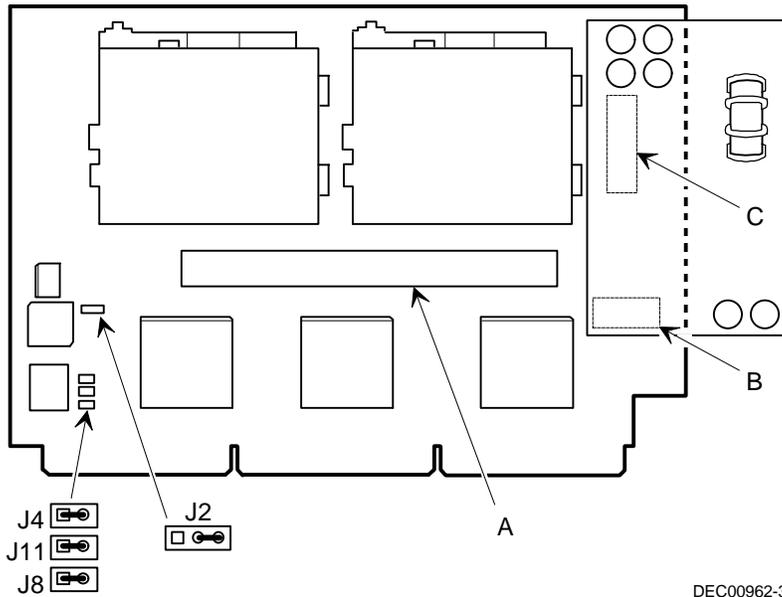
For kits FR-PC88U-AF, -AG, and -AH only, install the Voltage Regulator module onto the voltage regulator connector pins on the CPU module, locations B and C in Figure 5.

## Check the Jumper Settings

Figure 5 shows the CPU module's jumper locations. The jumper settings for a CPU with a speed of 166 MHz are shown in Table 2.

**Table 2. CPU Module Jumper Settings**

	166 MHz CPU Speed			Pipeline
<b>Jumper</b>	<b>J2</b>	<b>J4</b>	<b>J11</b>	<b>J8</b>
<b>Setting</b>	Pin 2 to 3	On	On	On

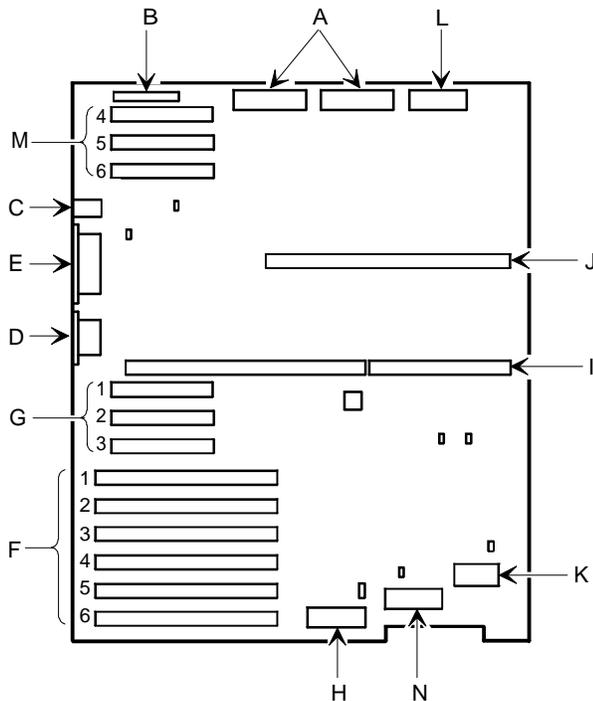


A = Secondary cache socket  
 B + C = Voltage regulator connector pins

**Figure 5. CPU Module Jumper and Socket Locations**

## Install the CPU Module

1. Install the CPU module into the dedicated CPU slot (item I in Figure 6) on the main logic board.



DEC00400-2

**Figure 6. Main Logic Board Components**



**CAUTION:** Do not install the CPU module in the dedicated memory module connector (item J).

2. Secure the CPU module to the main logic board using the previously removed retaining bracket, screw, and a Phillips screwdriver.

**Table 3. Main Logic Board Components**

<b>Item</b>	<b>Component</b>	<b>Item</b>	<b>Component</b>
A	5 V dc power supply connector	H	BIOS Flash ROM
B	Diskette drive connector	I	Dedicated CPU module connector
C	Mouse and keyboard connections	J	Dedicated memory module connector
D	Serial port connections	K	Real-time clock/server battery
E	Parallel port and video connections	L	3.3 V dc power connector
F	Six EISA expansion slots	M	Secondary PCI expansion slots (4, 5, and 6)
G	Primary PCI expansion slots (1, 2, and 3)	N	Video BIOS

## Install the New Medallion

Install the new medallion (product nameplate). This nameplate is press-fit into the left-front door. Replace the nameplate to identify your server to service personnel. To replace the nameplate:

1. On the inside of the door, carefully push out the old nameplate by pressing on the two green plastic posts with the Phillips screwdriver.
2. Press the new nameplate into place.
3. Clip the door back into its slots.

## Replace the Panels and Reconnect the Cables

1. Install the left side panel and lock the server.



**NOTE:** The server will not power up with the side panel removed.

2. Connect the cables, the monitor power cord, and the server power cord to the back of the server.

## Run the System Configuration Utility (SCU)

The SCU enables you to check or change your server's configuration. Run the SCU to configure your server for the new CPU chip or module.

To start and run the SCU:

1. Insert the SCU diskette into drive A and turn on your server. The diskette should boot automatically from the diskette.
2. When the SCU title appears, press any key to continue. Afterwards, follow the instructions on your screen to access the SCU main menu.
3. From the main menu, press the up or down arrow to highlight an item and then press Enter to select it. Press F1 at any time for help about a selection.
4. From the main menu select `Configure Computer` and then `View and Edit Details`.
5. Select `Save and Exit` to configure your server for the CPU module.
6. When complete, remove the SCU diskette from drive A and reboot your server.

*Refer to Chapter 2, "Server Utilities," in your computer user's guide for any additional information on running the SCU.*

## Troubleshooting

### Using the Crisis Recovery Diskette if Necessary

The crisis recovery diskette may be used only if your computer's BIOS fails or if a BIOS upgrade is unsuccessful.

When using the Crisis Recover Diskette, you must remove any video option card and enable the onboard VGA.

1. Turn off the server and make sure that the Onboard VGA jumper (J17, Figure 1) is jumpered (enabled).
2. Install a jumper on J39 (Figure 1) to set it to Recovery mode.
3. Insert the Crisis Recovery diskette into drive A and reboot the computer.



**NOTE:** Remember to remove jumper J39 to return it to Normal mode after using the Crisis Recovery diskette.

### Bulletin Board Access

For future reference, you can access product information and software updates using the Internet at:

**<http://www.pc.digital.com>**

**<http://www.pc.digital.com/~ftp>**

You can also access software updates through Digital's Bulletin Board Service (BBS) by calling in the United States **508-496-8800**.

The BBS is **not** a source for technical support. For advice, please call your local Digital Service Representative.