

# Prioris<sup>™</sup> XL and XLDP Server Powergrade Kit

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## Installation Guide

Order Number: ER-PC97U-IA. D01

**Digital Equipment Corporation**

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**FCC Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. Any changes or modification made to this equipment may void the user's authority to operate this equipment.

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™ XL and XLDP 5166

### CPU Powergrade Kit

## Introduction

Thank you for purchasing the Prioris™ XL or XLDP Powergrade Kit. These Powergrade kits contain all the components and instructions required to upgrade your server to a *Pentium*® CPU with a speed of either 166 MHz or 200 MHz:

<b>Model</b>	Prioris™ XL 5166	Prioris™ XL 5166DP	Prioris™ XL 5200	Prioris™ XL 5200DP
<b>CPU</b>	1 - 166 MHz	2 - 166 MHz	1 - 200 MHz	2 - 200 MHz

Installing this Powergrade kit involves updating your system BIOS (Basic Input-Output System). To do this, you will need to remove any video option card, if installed, and enable the internal VGA controller. Once the BIOS process has completed successfully, you can then reinstall any video option card. You **must** install the new BIOS **before** installing your Powergrade kit. This installation guide provides the necessary details.

## Tools Needed

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

## Kit Contents

Table 1. Kit Contents

Kit FR-PC97U-	AA	AB	AC	AD*	AE*	AF	AG	AH	AJ*
CPU Speed	166 MHz					200 MHz			
Pentium® CPU chip	1					1			
CPU board w/ 1 CPU		1			1		1		1
CPU board w/ 2 CPUs			1	1				1	
Main logic board				1	1				1
512KB cache	1		1	1	1	1		1	
Voltage regulator module		1	1	1	1		1	1	1
BIOS update diskette	1	1	1	1	1	1	1	1	1
SCU diskette	1	1	1	1	1	1	1	1	1
Crisis recovery diskette	1	1	1	1	1	1	1	1	1
Prioris medallion	1	1	1	1	1	1	1	1	1
Antistatic wrist strap	1	1	1	1	1	1	1	1	1

\* These kits are used when a Main Logic Board (54-23456) does not meet upgrade specifications; in which case, a new MLB (54-23984-01) is included in the kit, which requires Digital MCS installation.

## Enable the Onboard VGA Controller

Before updating the BIOS, you must remove any video option card and enable the onboard VGA.

1. Insert the SCU diskette into drive A and turn on or reset your server. The diskette should boot automatically.
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, use the arrow keys to highlight an item and then press Enter to select it. Press F1 at any time for help about a selection.

4. Select the **Advanced Control Group** and enable the **Embedded - PCI VGA controller**.
5. Select **Save and Exit** to save this selection.

## 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.

## 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 front security lock on the server.
4. Remove the left side panel by sliding it toward the rear of the server.



**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.

## Remove any Video Option Cards

Before updating the BIOS, you must remove any video option card and use the embedded PCI VGA controller.

## Check the Jumper Settings

Make sure that the following jumpers are installed:

J17 (Figure 1)	Onboard VGA	Enabled (On)
J41	BIOS upgrade	Enabled (On)
J50	Boot block writable	Move jumper from the default pins 1 and 2 to pins 2 and 3.

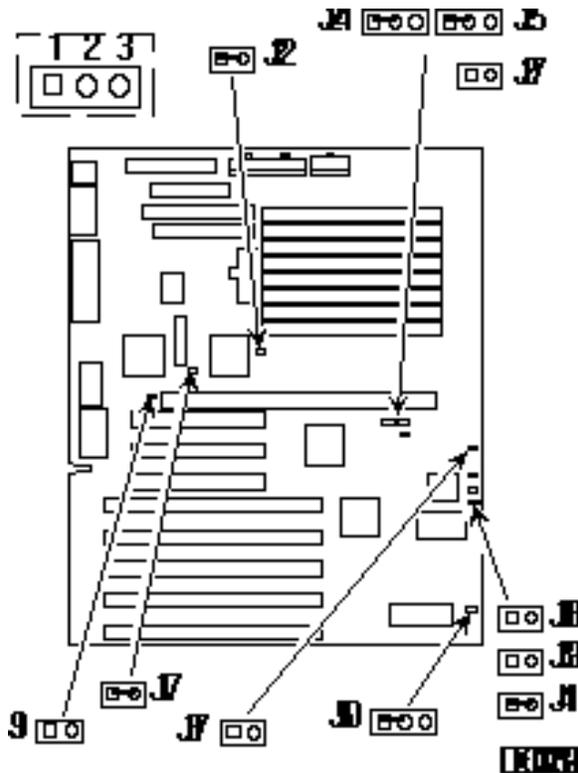


Figure 1. Main Logic Board Jumper Locations

## Replace the Panel and Reconnect the Cables

1. Install the left side panel. 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. Your computer automatically boots from the BIOS Upgrade diskette in Drive A.
2. At the MS-DOS prompt, change the directory to upgrade.  
Example:

```
A:\cd upgrade
```

3. At the MS-DOS prompt, type: **upgrade**



**NOTE:** You must have an MS-DOS formatted diskette for the current BIOS and for the upgrade BIOS.

4. At the menu, select "Make Recovery Diskette From Flash."
5. At the menu, select "Flash BIOS from IMAGE File." Press Continue and select the following:

```
V208_EN.BIN  
Program
```

The BIOS upgrade procedure will run automatically.



**NOTE:** DO NOT power down the system once this procedure has started. If the system loses power, or if at the end of this procedure the system fails, please refer to the section, "Troubleshooting – Using the Crisis Recovery Diskette if Necessary."

The system will reboot at the termination of the upgrade procedure.

6. Remove the diskette from Drive A.

## Reset Jumpers on the Main Logic Board

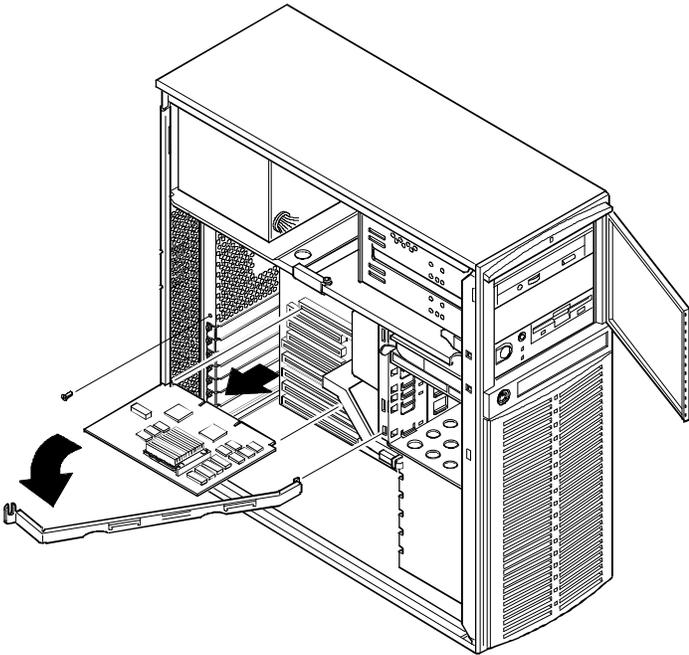
1. As described previously, power down the server.
2. Make sure that the following jumpers, shown in Figure 1, are set to disabled to prevent any unauthorized update to your BIOS:

J41	BIOS upgrade	Disabled (Off)
J50	Boot block update	Move the jumper back to the default position shown in Figure 1 (pin 1 to pin 2).

## Powergrade Installation

### 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. Grasping both ends of the CPU module, carefully remove it from the main logic board and place it on an antistatic surface.



DEC00243-2

**Figure 2. Removing the CPU Module**

## Install a Second CPU Chip (FR-PC97U-AA, -AF Kits 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-PC97U-AA or -AF), install the new Pentium Processor chip as follows:

1. Unlatch and lift up on the release lever.
2. Install the CPU chip (Figure 3). The arrangement of the pins is keyed for correct placement. The chip also has a beveled corner (A), which may be different on your board.
3. Return the release lever to its original position.

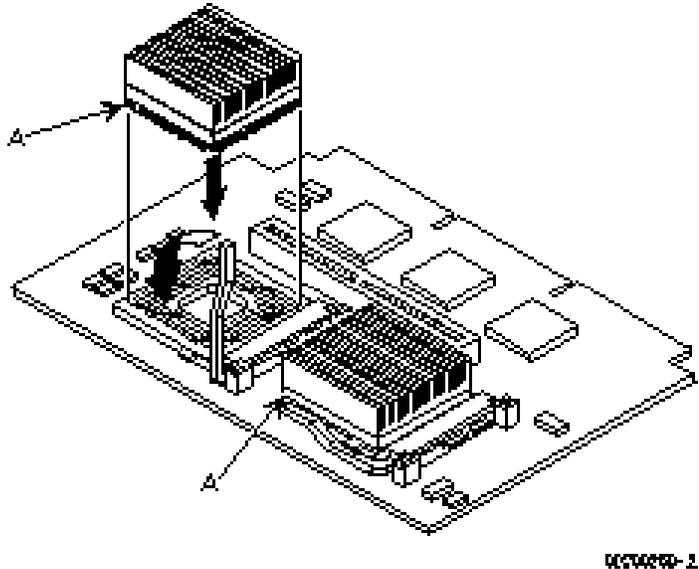


Figure 3. Installing a Second CPU Chip

## Install the Secondary Cache

Move the secondary cache (if present) on the old CPU module to the new CPU module (Kits FR-PC97U-AB, -AG, and -AJ only). Kits FR-PC97U-AA, -AC, -AD, -AE, -AF, and -AH have a new 512 KB cache module. Seat the cache firmly into the socket (Figure 4).

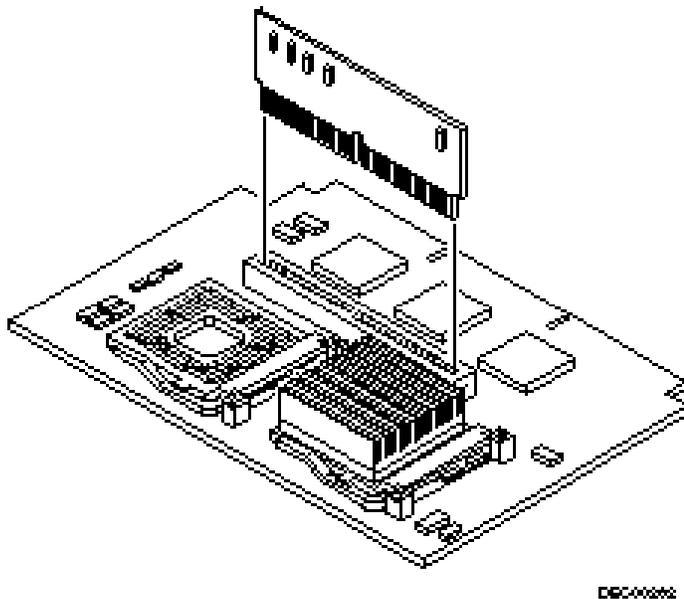


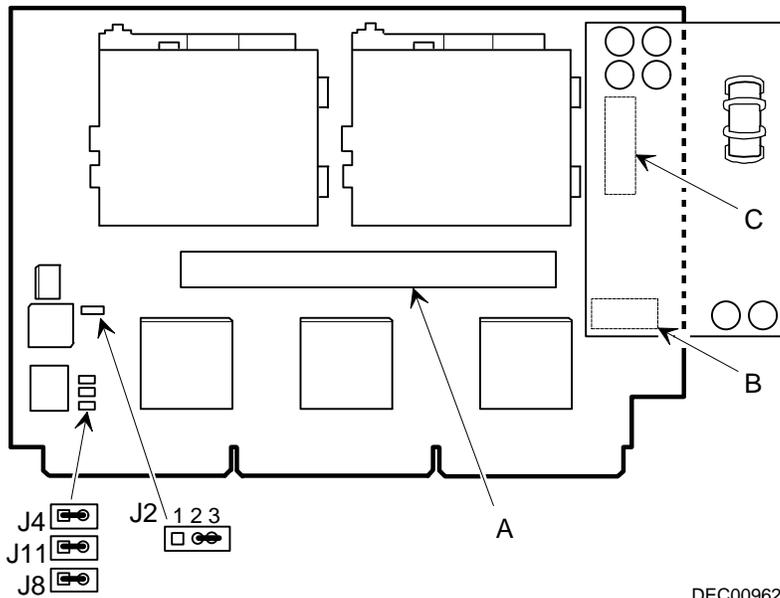
Figure 4. Installing the Secondary Cache

## Check the Jumper Settings

Figure 5 shows the CPU module's jumper locations. The jumper settings for the bus speed should be 66 MHz. Move the jumpers so they are set correctly for the correct speed of the CPU you are installing.

**Table 2. CPU Module Jumper Settings**

	Bus Speed	CPU Speed				
	66 MHz	166 MHz	200 MHz		Pipeline	
Jumper	J2	J4	J11	J4	J11	J8
Setting	Pin 1 to 2	On	On	Off	On	On



DEC00962-

- A = Secondary cache socket
- B + C = Voltage regulator pins
- D = Voltage regulator board

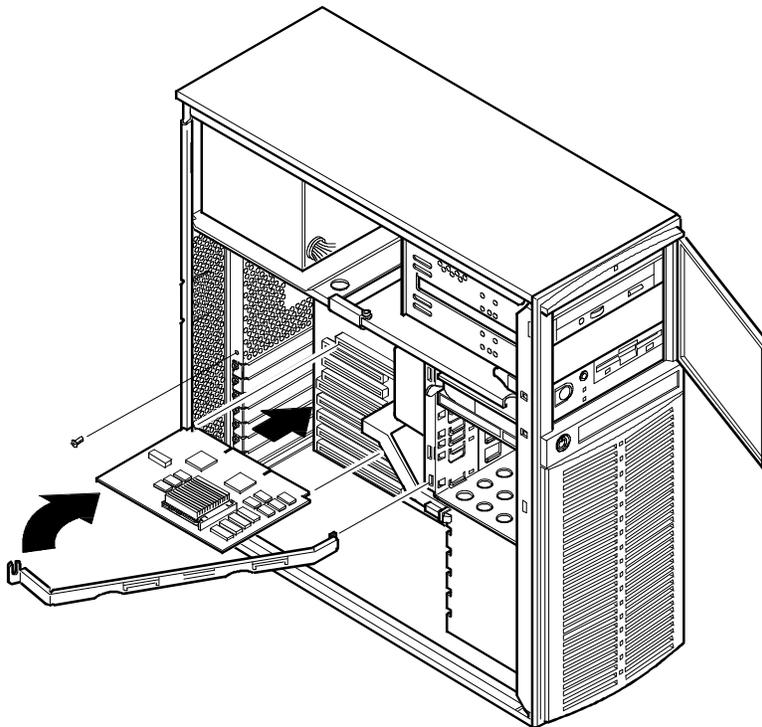
**Figure 5. CPU Module Jumper and Socket Locations**

## Install the Voltage Regulator Module

For kits FR-PC97U-AB, -AC, -AD, -AE, -AF, and -AH only, install the Voltage Regulator module onto the voltage regulator pins on the CPU module, B and C in Figure 5.

## Install the CPU Module

1. Install the CPU module into the dedicated CPU slot on the main logic board.
2. Secure the CPU module to the main logic board using the previously removed retaining bracket, screw, and a Phillips screwdriver (Figure 6).



DEC00243-3

**Figure 6. Installing the CPU Module**

## Install the New Medallion

Install the new medallion (product nameplate) to identify your server to service personnel. To replace the nameplate:

1. Remove the tape on the back to expose the adhesive surface.
2. Press the new nameplate into place over the previous nameplate.

## Replace the Panel 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`. Example:

If you installed a video option card, select the `Advanced Control Group` and disable the `Embedded - PCI VGA controller`.

4. Select **Save** and **Exit** to configure your server for the CPU module.
5. When complete, remove the SCU diskette from drive A and reboot your server.

*Refer to Chapter 3, "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 Recovery 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 installed (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.windows.digital.com>

<http://www.windows.digital.com/~ftp/00-index.htm>

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