



SunPCi™ II 2.2 Installation Guide

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SunPCi II Hardware and Software Installation

The instructions in this guide will help you to install one or more SunPCi™ II Coprocessor Version 2 card(s) and the Sun™ software (referred to as SunPCi II), as well as where to locate the SunPCi II documentation on the software CD.

With this version of the SunPCi II product, Sun introduces support for multiple SunPCi II cards in the UltraSPARC™-based systems listed in the section “Supported Systems and Power Requirements” on page 2.

Using the SunPCi II product you can install one Microsoft Windows operating system per card (see “Supported Microsoft Windows Software” on page 3 for the list of operating systems).

What's On This CD?

The SunPCi II CD contains the following software and documentation:

- SunPCi II version 2.2 software
- *SunPCi II 2.2 Installation Guide* in PDF (Adobe Acrobat) format for English and some languages
- *SunPCi II 2.2 User's Guide* in PDF format for English and some languages

The *SunPCi II 2.2 Installation Guide* (this guide) describes how to install one or more SunPCi II cards, and the SunPCi II software in supported UltraSPARC systems.

The *SunPCi II 2.2 User's Guide* describes how to configure the SunPCi II software to use one or more SunPCi II cards, and how to install the Microsoft Windows software on each SunPCi II card.

Before You Install the SunPCi II Card(s)

This section describes prerequisite system hardware requirements, supported Microsoft Windows software, guidelines for installing multiple SunPCi II cards, and the equipment and software you need for the installation.

System Hardware and Solaris Requirements

You can install the software on a supported UltraSPARC system, with a Peripheral Component Interconnect (PCI) bus, running the Solaris™ 2.6, Solaris 7, or Solaris 8 operating environment software.

Supported Systems and Power Requirements

The SunPCi II card is a 33/66-MHz PCI card that draws 25 Watts (DC) of power. You can install the card into any standard 33- or 66-MHz PCI slot on one of the UltraSPARC systems listed in the next table.

UltraSPARC System	SunPCi II Cards
Ultra 5 Workstation	1
Ultra 10 Workstation	1
Ultra 30 Workstation	2
Ultra 60 Workstation	2
Ultra 80 Workstation	2
Sun Blade 100 System	2
Sun Blade 1000 System	4
Ultra Enterprise 450 System	6
Sun Enterprise 250 System	2
Sun Enterprise 220R Server	2
Sun Enterprise 420R Server	2
Sun Fire 280R Server	2

Installing Multiple SunPCi II Cards

Follow these guidelines if you are installing more than one SunPCi II card into your system:

- When you install each card, write down both the card's machine (MAC) Ethernet address (on the yellow label attached to the card) and the PCI slot number on the system back panel into which you will install the card. You will need this information after you configure the SunPCi II software.
- Install all your SunPCi II cards before you install the SunPCi II software.
- Configure only physical Ethernet networking with multiple cards; virtual networking is disabled with multiple cards.
- Each card draws 25 Watts (DC). Consult the documentation that came with your system for additional DC power calculation information.

Supported Microsoft Windows Software

The SunPCi II product supports one-per-card installation of the following Microsoft Windows operating systems:

- Microsoft Windows 2000 Server Edition (Windows 2000 Server)
- Microsoft Windows 2000 Professional (Windows 2000 Professional)
- Microsoft Windows NT Workstation 4.0 (Windows NT4 WS)
- Microsoft Windows NT Terminal Server 4.0 (Windows NT4 TS)
- Microsoft Windows Millennium Edition (Windows ME)
- Microsoft Windows 98 Second Edition (Windows 98 SE)

Note – This release of the SunPCi II product does not support Windows 95.

After you have installed the SunPCi II hardware and software using this guide, you will be ready to configure and install your Microsoft Windows operating system(s) (purchased separately).

Equipment and Software

To install your SunPCi II hardware, you need to have the following equipment and software available:

- SunPCi II card or cards
- UltraSPARC system with available PCI slots (two available slots per card if you plan to use the add-on backplate with parallel and serial ports)
- Grounding wrist strap (included in the SunPCi II package)
- Phillips screwdriver (not included)
- SunPCi II software (included on the SunPCi II CD)

Note – Make sure that you keep the box and all packing materials in case you need to return the card for service.

Getting Started

Before you can configure and install the Microsoft Windows operating systems, you need to perform the following steps:

1. Remove a SunPCi II card (if necessary)
2. Install the SunPCi II hardware
3. View the documentation files
4. Install the SunPCi II software

The sections that follow describe each of these steps in detail.

Removing a SunPCi II Card From Your System

If you have an earlier version of the SunPCi card installed in your system, you need to remove the card and the existing SunPCi software package before installing the SunPCi II card. For instructions about removing the PCI card, refer to the

documentation that accompanied your UltraSPARC system. Refer to the *SunPCi II 2.2 User's Guide* for Microsoft Windows removal instructions. To remove SunPCi software, see "Removing SunPCi II Software" on page 24.

Note – You will not be able to use your SunPCi 1.x C: drive as a SunPCi II boot drive. If you have data on your old C: drive that you want to use with the new SunPCi II card, attach the old C: drive as a D: drive *after* you install the SunPCi II card and software. You will have to reinstall your applications on your new C: drive.

Installing the SunPCi II Hardware

This section explains how to install a SunPCi II card and its optional add-on backplate into your system. You only need to install the backplate if you plan to connect an external serial or parallel device, such as a modem or a local printer, directly to the SunPCi II card.

Note – Make sure you install all the SunPCi II cards before you install the SunPCi II software. You only need to install the software once on each system.

Shutting Down the System

1. If you have not done so already, become superuser on the system into which you want to install the SunPCi II card.

To become superuser, type the following command at the system prompt and press Return.

```
% su
```

2. Type the superuser password and press Return.

If you do not know the superuser password, see your system administrator.

3. Type the following command:

```
# uadmin 2 6
```

Make sure that you type spaces between the `uadmin` command and the 2, and between the 2 and the 6.

4. **Your system unit powers off. Turn off the power to any peripherals that are connected to your system.**
5. **Remove all cables, except the power cord, from the back of the system. Leaving the power cord plugged in ensures that you have a path to ground; this reduces the possibility of damage to static sensitive devices.**

If you are installing the SunPCi II card into a new system, make sure that you plug the power cord into the power outlet on the system and into the wall outlet. This ensures that static electricity is properly discharged and does not damage the card or your system.

Removing the System Cover

1. **Remove the system cover or unit top.**

Refer to the instructions included with your particular system.

2. **Attach the grounding wrist strap.**

Attach the copper end of the wrist strap to the metal frame of the system or the casing of the power supply. *Be sure to attach the copper to bare metal; do not attach it to any painted surface or to any of the labels on the power supply.*

Identifying the PCI Slots

To locate the PCI slots in your system, refer to the figure that corresponds with the model of your system, or to the system documentation.

Note – The SunPCi II card operates in either 32-bit or 64-bit PCI slots.

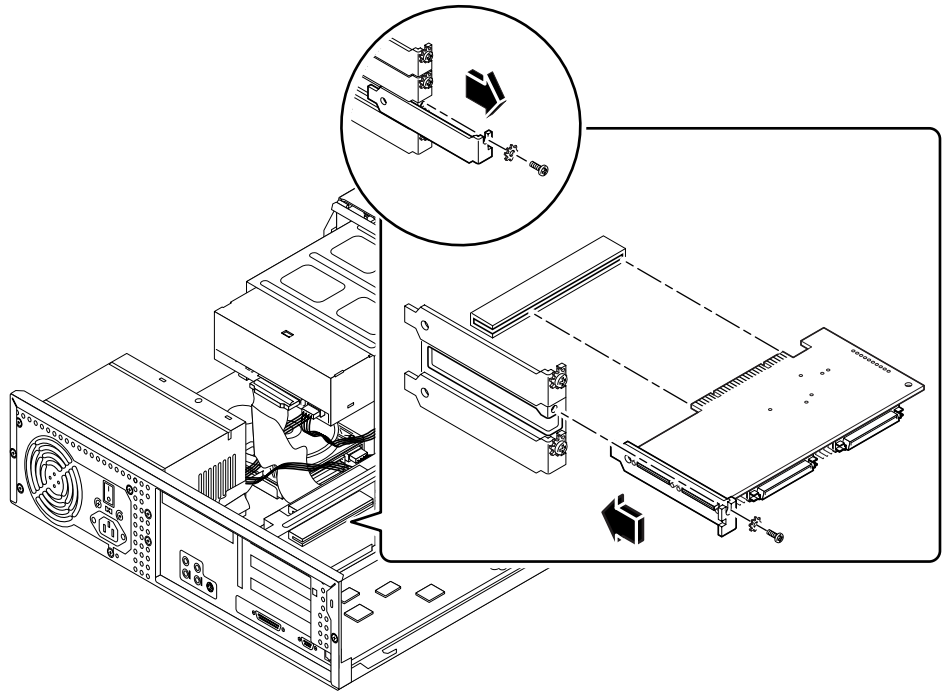


FIGURE 1 Ultra 5 System PCI Slots

For more information about the PCI slots, see the *Sun Ultra 5 Service Manual*.

Tip – When installing the SunPCi II card into the Ultra 10 system, you will find it necessary to turn the system unit upside down and lift the cover upward.

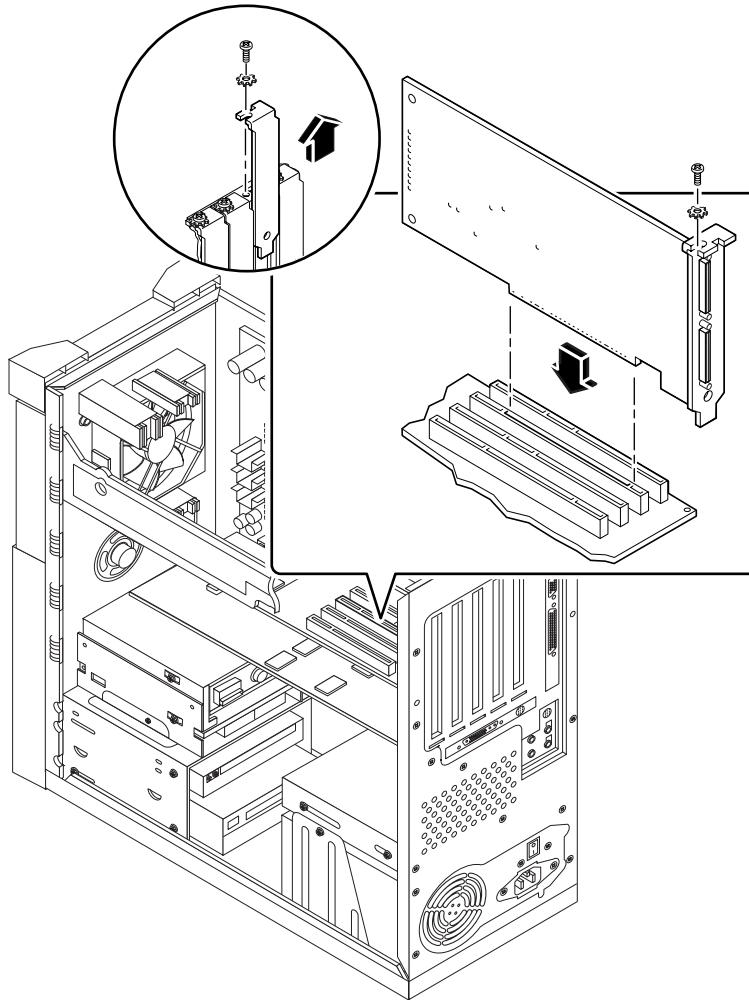


FIGURE 2 Ultra 10 System PCI Slots

If your Ultra 10 system also has a Fast Frame Buffer (FFB) card (or any other auxiliary card) installed, be careful not to dislodge the FFB card as you insert the SunPCi II card into its PCI slot. If you ordered the FFB card with your system, it will come pre-installed. If you did not order the FFB card, you will not have one installed.

For more information about the PCI slots, see the *Sun Ultra 10 Service Manual*.

Tip – When installing the SunPCi II card into the Ultra 30 or Ultra 60 system, make sure to push down on the cable. This helps move the cable out of the way of the card while you are inserting it into the PCI slot.

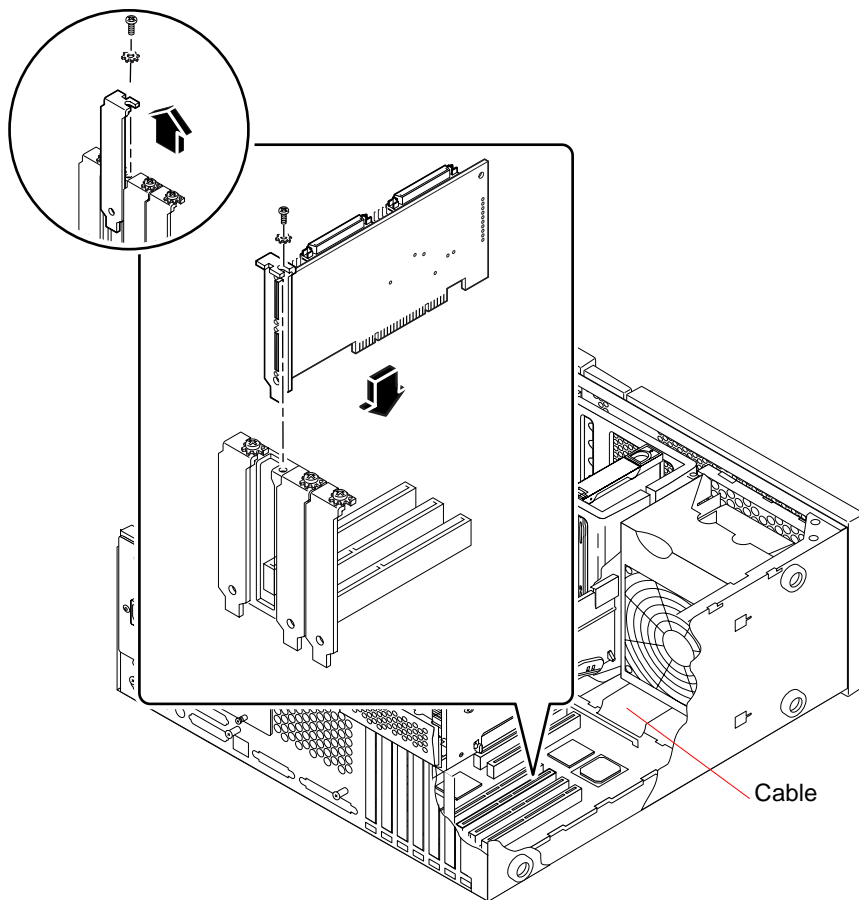


FIGURE 3 Ultra 30/Ultra 60 System PCI Slots

If your Ultra 30 or Ultra 60 system also has a Fast Frame Buffer (FFB) card (or any other auxiliary card) installed, be careful not to dislodge the FFB card as you insert the SunPCi II card into its PCI slot. If you ordered the FFB card with your system, it will come pre-installed. If you did not order the FFB card, you will not have one installed.

For more information about the PCI slots, see the *Sun Ultra 30 Service Manual* or the *Sun Ultra 60 Service Manual*.

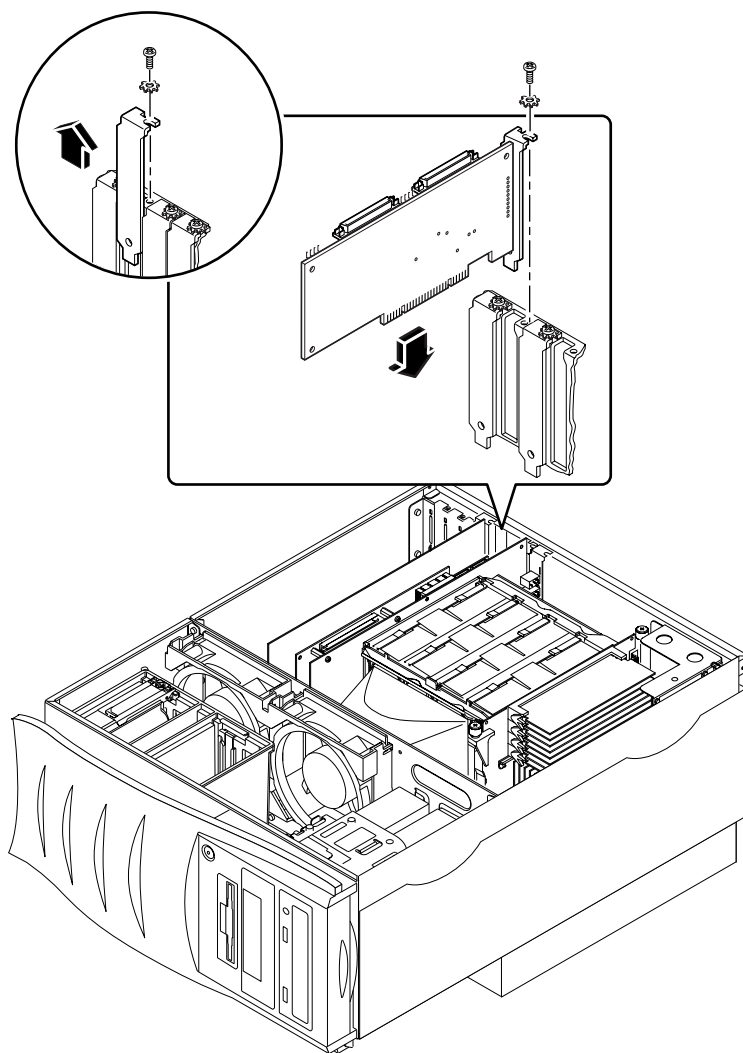


FIGURE 4 Ultra 80 System PCI Slots

For more information about the PCI slots, see the *Sun Ultra 80 Service Manual*.

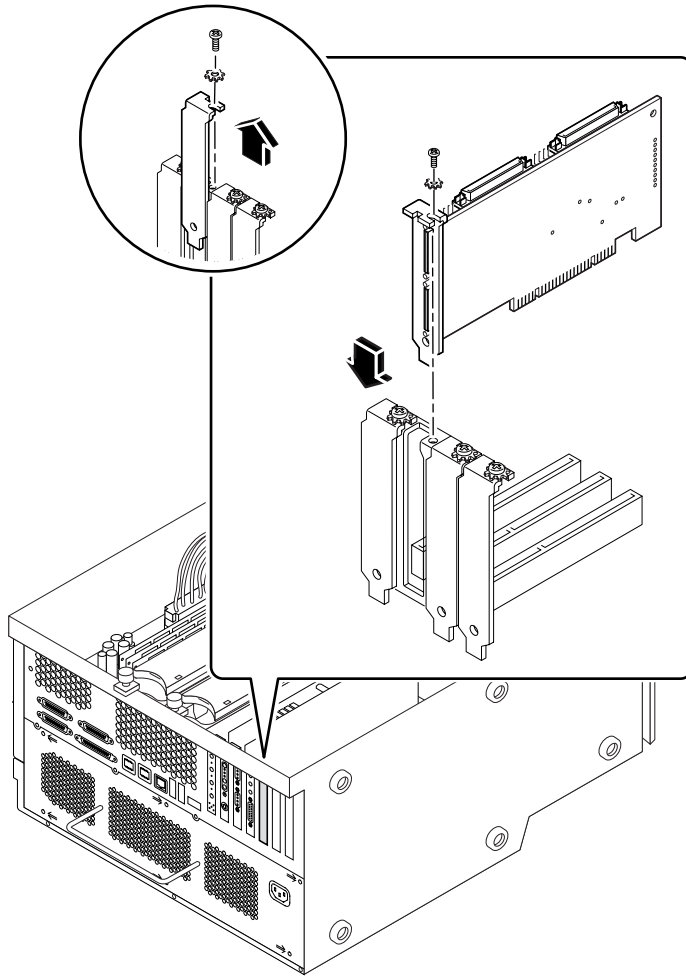


FIGURE 5 Sun Blade 1000 System PCI Slots

For more information about the PCI slots, see the *Sun Blade 1000 Service Manual*.

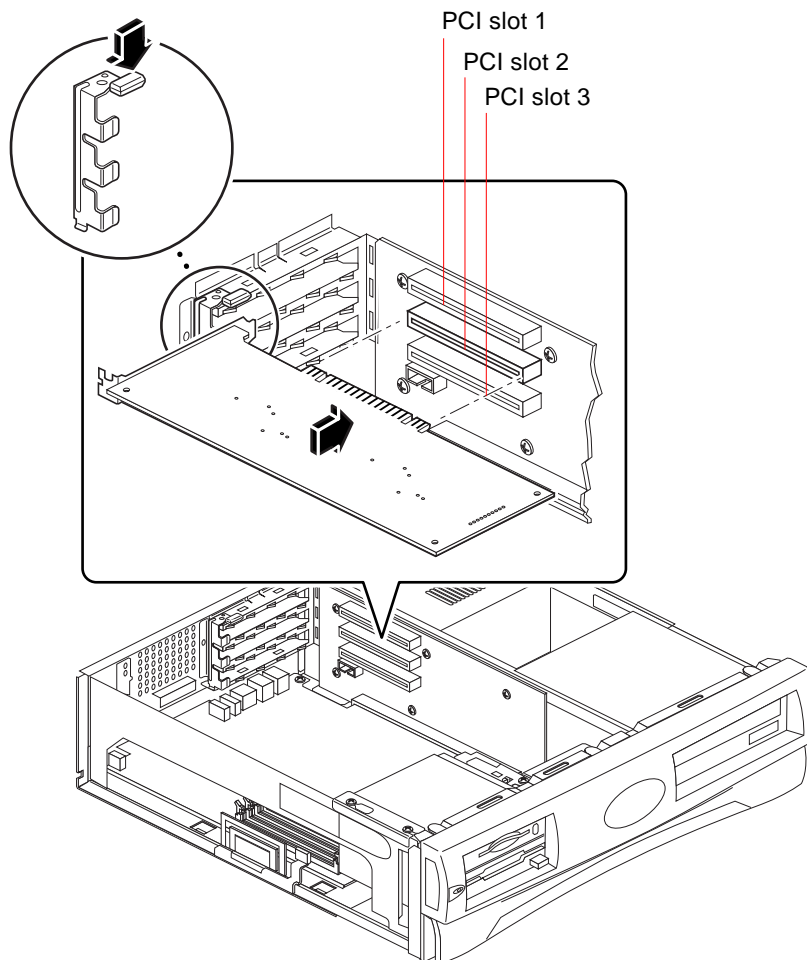


FIGURE 6 Sun Blade 100 System PCI Slots

PCI slots 1, 2, and 3 support 33-MHz PCI cards. See the *Sun Blade 100 Service Manual* for more PCI slot information.

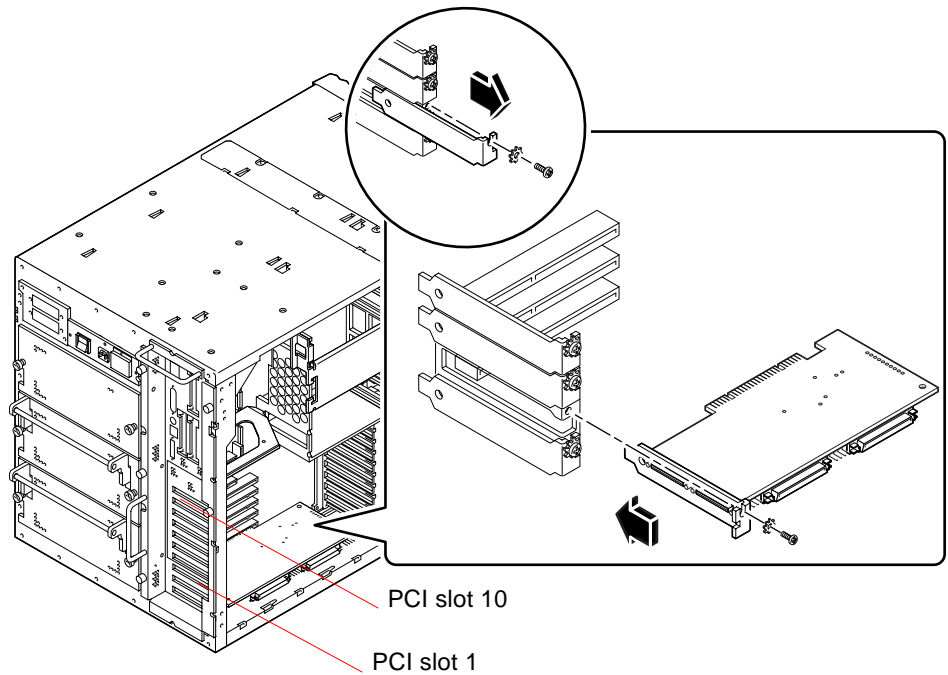


FIGURE 7 Ultra Enterprise 450 System PCI Slots

The Ultra Enterprise 450 PCI slots will accept up to three 66-MHz cards in PCI slots 4, 5, and 6, which operate at 3.3 V DC (66 MHz). Slots 1 through 3 and slots 7 through 10 operate at 5 V DC (33 MHz). Consult the *Ultra Enterprise 450 Server Owner's Guide* for more PCI information.

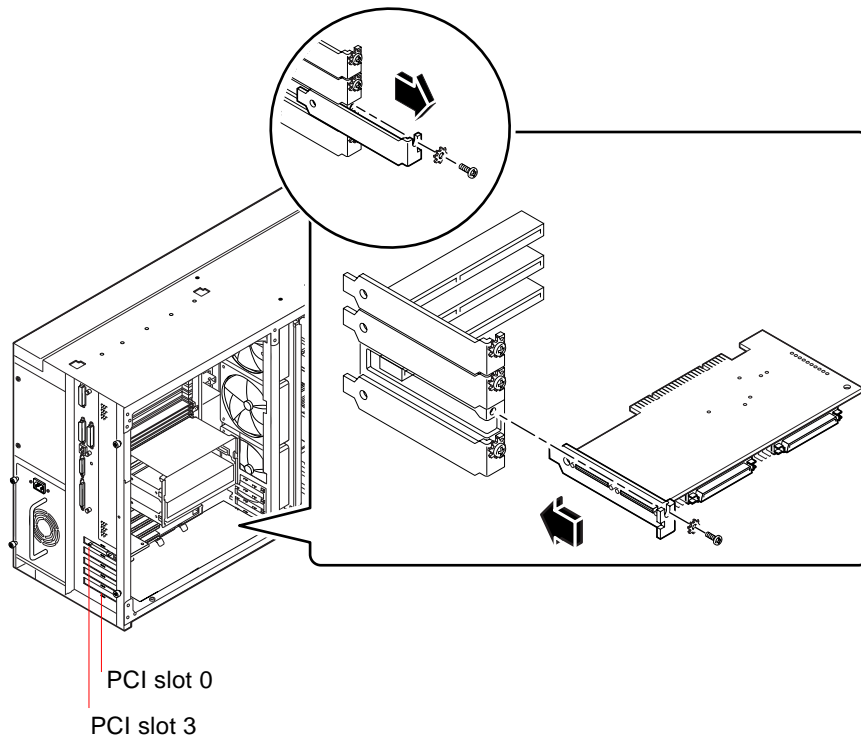


FIGURE 8 Sun Enterprise 250 System PCI Slots

Sun Enterprise 250 PCI slots 0, 1, and 2 support 5-V DC (33-MHz) cards. Slot 3 supports 3.3-V DC (66- or 33-MHz) cards. Consult the *Sun Enterprise 250 Server Owner's Guide* for more PCI information.

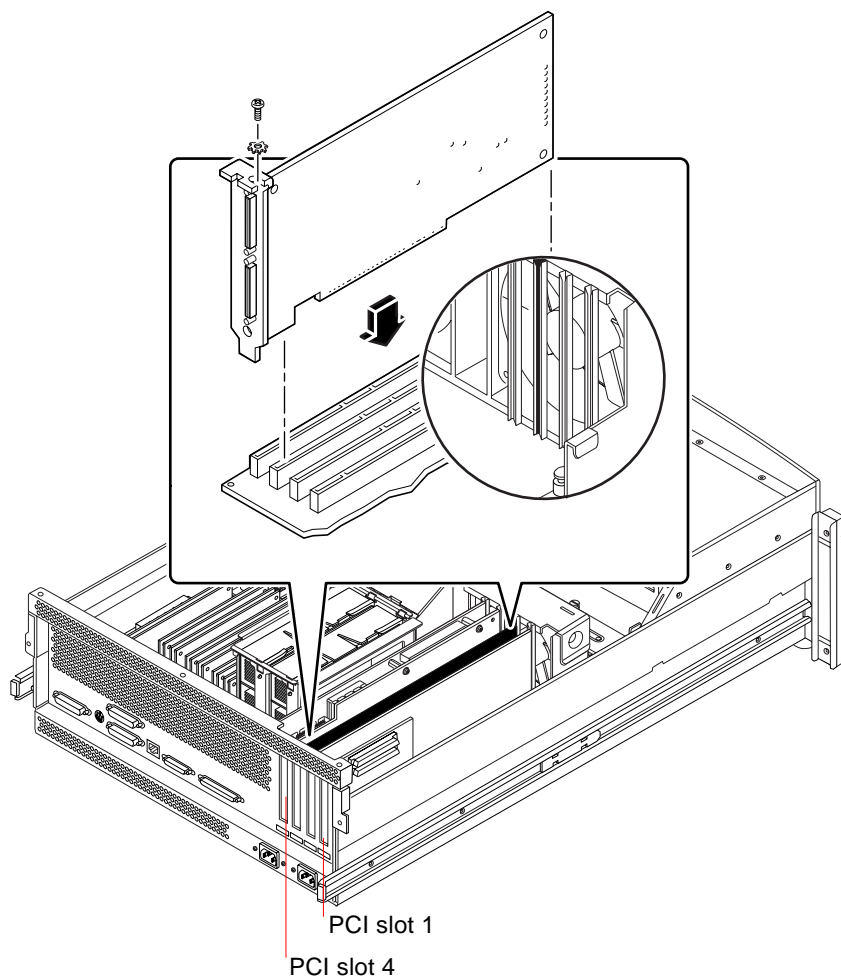


FIGURE 9 Sun Enterprise 220R System PCI Slots

Sun Enterprise 220R PCI slot 1 supports 3.3-V DC (66- or 33-MHz) cards on PCI Bus 1. PCI slots 2, 3, and 4 support 5-V DC (33-MHz) cards on PCI Bus 0. Consult the *Sun Enterprise 220R Server Owner's Guide* and the *Sun Enterprise 220R Server Service Manual* for more PCI information.

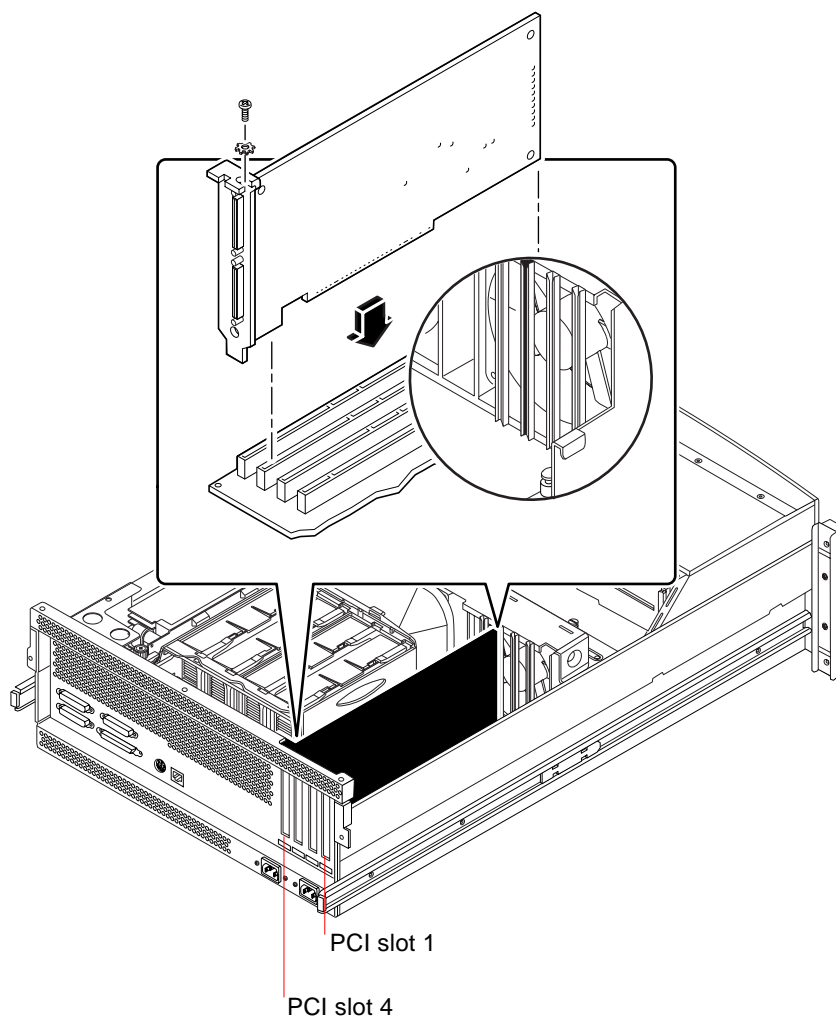


FIGURE 10 Sun Enterprise 420R System PCI Slots

Sun Enterprise 420R PCI slot 1 supports 3.3-V DC (66- or 33-MHz) cards. PCI slots 2, 3, and 4 support 5-V DC (33-MHz) cards. Consult the *Sun Enterprise 420R Server Owner's Guide* and the *Sun Enterprise 420R Server Service Manual* for more PCI information.

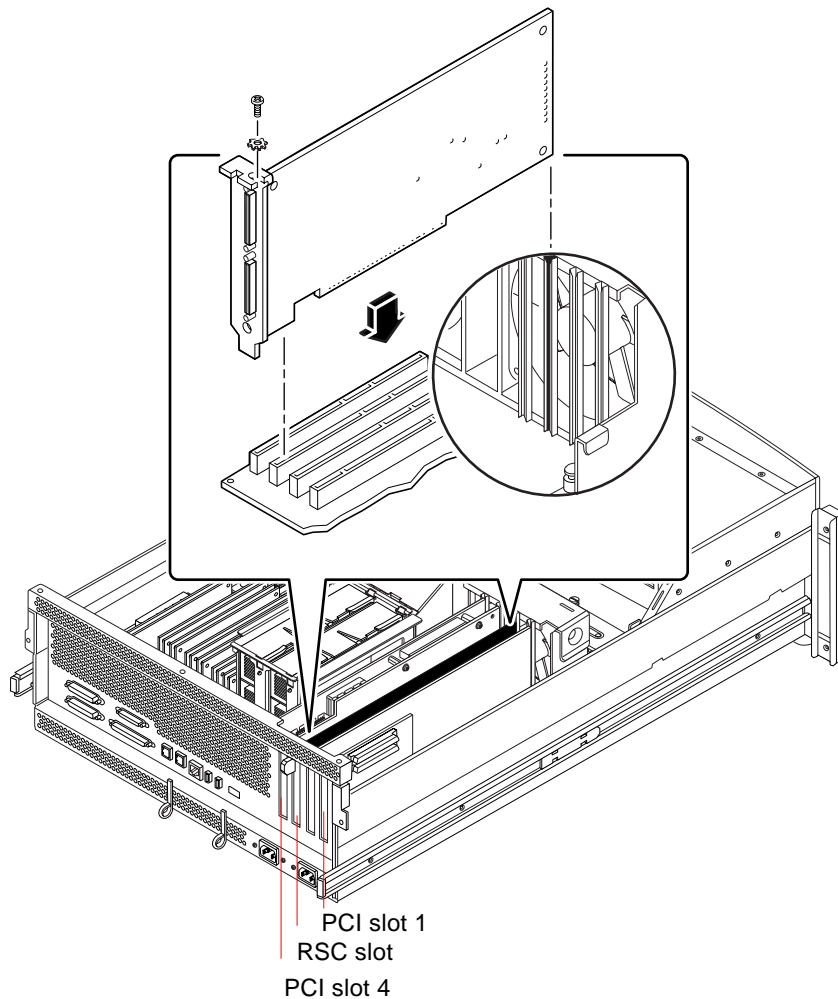


FIGURE 11 Sun Fire 280R Server PCI Slots

Sun Fire 280R PCI slot 1 is reserved for high-speed (66-MHz) cards. Installing a low-speed (33-MHz) card into PCI slot 1 will affect FC-AL performance. Do not install a low-speed card into PCI slot 1. The Sun Remote System Control (RSC) card is installed in the RSC slot.

For more information about the PCI slots, see the *Sun 280R Server Service Manual*.

Preparing the Slots

Before you can install the SunPCi II hardware, you need to prepare the PCI slot(s) you will use.

Note – If you plan to use the optional add-on backplate with serial and parallel ports, you need to use two adjacent back panel slots per card that you install.

- **Use your Phillips screwdriver to remove the filler panels from two adjacent empty slots (if necessary), or remove the installed card(s).**

The filler panel is the removable metal strip that is installed inside your system enclosure at the back panel to cover each PCI slot's opening.

- a. **If you are installing the card into a pair of empty slots, remove the filler panels covering the slots in the system.**
- b. **If you are installing the card into an occupied slot, remove the current card. Put your index fingers or thumbs under the corners of the card and lift the card upward. Remove the card from the system.**

Installing the SunPCi II Card(s)

1. **Remove the SunPCi II card from its antistatic bag.**

Hold the card by the edges. Place it on the antistatic bag, or on an antistatic mat (if you have one available).

2. **If you have purchased the optional additional RAM SODIMMs, install them now. If you did not purchase the additional RAM, skip this step.**

The SunPCi II card ships in a standard configuration with one SODIMM installed. If desired, you can add a second SODIMM as described in the *SunPCi II SODIMM Installation Guide* (accompanying the optional SODIMM).



Caution – The SunPCi II card is designed to operate only with the SODIMMs supplied by Sun for the card. If you install a SODIMM not supplied by Sun, you will invalidate the warranty for your SunPCi II card.

3. In the table after this step, write down the machine or MAC (Ethernet) address found on the card’s sticker, together with the card’s PCI slot number into which you will install the card. Do this for all cards you plan to install.

The SunPCi II card bears a yellow sticker with the card’s machine or MAC (Ethernet) address. This label is located on the center of the card, above the connectors. Consult your system back panel or documentation for the PCI slot number.

Machine or MAC (Ethernet) Address	PCI Slot Number	Computer Name	IP Address

Note – You will provide a Microsoft Windows computer name for the PC or server when installing Microsoft Windows software, and you may also obtain a corresponding Internet Protocol (IP) address later from your system administrator (if you plan on using the network). The *SunPCi II 2.2 User’s Guide* describes these configuration procedures.

4. Insert the SunPCi II card into the PCI slot.

Remove the slot cover. Slide the tab on the bottom of the backplate into the opening in the back panel of your system. Remember that if you are using the add-on backplate, you will need to use adjacent slots.

Be careful not to dislodge any other cards that may be installed in other slots. Make sure the SunPCi II card ports, and the add-on backplate ports (if installed) face out through the back panel of the system.

5. If you are using the optional add-on backplate, attach it to each SunPCi II card as shown in the following figure; if you are not using the backplate, skip this step.

Attach the connectors before installing the backplate. You can use the add-on backplate to install external PC peripherals to each SunPCi II card, such as local printers and modems.

This figure shows the proper orientation of the SunPCi II card and the backplate. You can see the location of the ports that show through the back of the system after the card is installed.

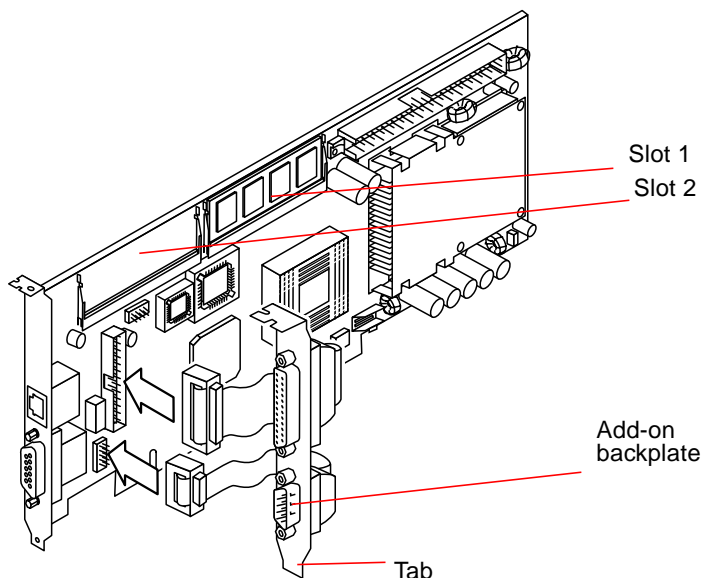


FIGURE 12 Attaching the Add-on Backplate

- 6. Tighten the screw on the SunPCi II card to secure it in place.**
Use the screw you removed from the filler panel.
- 7. If you are using the optional add-on backplate, insert its tab correctly and tighten the screw to secure the backplate in place beside the SunPCi II card.**
- 8. If you are installing multiple cards, repeat this procedure until all SunPCi II coprocessor cards are installed.**
Verify that each card and slot is recorded properly in the table above Step 4, after each installation.

Finishing the Installation

1. Remove the wrist strap from your wrist and detach it from the system.
2. Replace the system cover or unit top, following the instructions appropriate to your system.
Refer to the instructions that accompanied your system.
3. Reconnect all cables to the back of the system.



Caution – Do not turn on the power to your system until you have re-installed and secured the system cover or unit top.

4. Power on your system.
The system automatically reboots when you turn on the power to the system unit.
5. Turn on the power to your system peripherals.
6. Log in again, become superuser, and continue with the SunPCi II software installation instructions in the following section.

Note – If you have other PCI cards installed in your system in addition to the SunPCi II card, type `halt` at the superuser prompt and then type `boot -r` to start your system. This allows your UltraSPARC system to recognize the old and new PCI cards. If you do not have any additional PCI cards installed, just start your system normally.

Note – If your system does not recognize the SunPCi II card or cards, or does not restart after you turn on the power, the SunPCi II card(s) may not be seated correctly in the PCI slot. Turn off the power to your system, open the system cover again, reseal each SunPCi II card, and repeat this procedure.

Viewing the PDF Files

The translated versions of the *SunPCi II 2.2 Installation Guide* and all versions of the *SunPCi II 2.2 User's Guide* are stored on the SunPCi II software CD in PDF (Adobe Acrobat) format. To view these files, perform the following steps:

1. **Use the `cd` command to go to the subdirectory where the PDF files for your locale are stored on your SunPCi II software CD.**

Refer to the *SunPCi II 2.2 Read Me First* or the README file on the CD for information on the paths for each locale.

2. **In a separate Terminal window, type the following command and press Return:**

```
% acroread &
```

After a few seconds, the Adobe Acrobat splash screen is displayed, followed by the main program window.

3. **From the File menu, choose Open, and then click through the directory paths described in Step 1 until you reach the document you want to view.**
4. **Double-click on the document file name to open the document.**

You can now use the Page Up and Page Down keys, as well as the commands in Adobe Acrobat, to navigate and print the PDF files.

Installing the SunPCi II Software

You can install the SunPCi II software package on any system running Solaris 2.6, Solaris 7, or Solaris 8 software.

After you install the package, refer to the *SunPCi II 2.2 User's Guide* for instructions on how to install your Microsoft Windows operating system. See "Supported Microsoft Windows Software" on page 3 for a list of operating systems.

To install the SunPCi II package, perform the following procedure:

1. **Open a command (Terminal) window on the Solaris desktop.**
2. **Become superuser on the system on which you want to copy the SunPCi II package.**

3. Start the `pkgadd` program. Type the following command:

```
# /usr/sbin/pkgadd -d /cdrom/cdrom0/Product
```

The `pkgadd` program starts, and displays the following message:

```
The following packages are available:
1 SUNWspci2 SunPCi II

      (sparc) 2.2

Select package(s) you wish to process (or 'all' to process all
packages). (default: all) [?,??,q]:
```

4. Press Return to accept the default choice (install the SunPCi II package), and then press `y` to continue.

The `pkgadd` program copies the SunPCi II files to the `/opt` directory on your system. The files are listed on your screen as they are copied. When all the SunPCi II files are copied, `pkgadd` displays the following message:

```
Installation of SUNWspci was successful.
The following packages are available:
1 SUNWspci2 SunPCi II
      (sparc) 2.2

Select package(s) you wish to process (or 'all' to process all
packages). (default: all) [?,??,q]:
```

5. Type `q` to exit the `pkgadd` program.
6. Type the `exit` command to end your superuser session.
You are returned to your normal user session.
7. To verify that your cards have been recognized by the SunPCi II software, type the following command at the prompt, and press Return.

```
% /opt/SUNWspci2/bin/sunpci -l
```

The system will return a list of installed cards.

How to Proceed

Now that you have successfully installed the SunPCi II card and software, you are ready to install a supported Microsoft Windows operating system (see “Supported Microsoft Windows Software” on page 3 for the list of the workstation and server operating systems). Proceed to the instructions in the *SunPCi II 2.2 User's Guide* to continue the installation process. The *SunPCi II 2.2 User's Guide* contains complete step-by-step instructions for installing and running Microsoft Windows with SunPCi II software.



Caution – Even if you are familiar with Microsoft Windows installation, and the Solaris operating environment software installation, follow the instructions in the *SunPCi II 2.2 User's Guide*. There are certain ways in which the SunPCi II product behaves differently than a standard Microsoft Windows PC installation, and the *SunPCi II 2.2 User's Guide* contains critical information on the ways in which Solaris and Microsoft Windows interact. Your installation will fail unless you follow the directions.

The next sections explain how to perform the following procedures:

- How to remove the SunPCi II software
- How to obtain warranty service

These sections appear for future reference. You will not need them to complete the installation process.

Removing SunPCi II Software

This section provides instructions for completely removing SunPCi II software from your system, should you ever want to do so.

To remove SunPCi II software, follow these steps:

1. **Become superuser on your system. Type `su`, and then type your superuser password at the prompt.**

2. Type the following command to remove the SunPCi II installation package:

```
# /usr/sbin/pkgrm SUNWspci2
```

You will see many file names scroll by as they are being removed.

3. Type `exit` to exit your superuser session.

Obtaining Warranty Service

After the warranty period, various service options are available for the SunPCi II card; contact your local service provider or your Sun reseller/sales office for a description of these options and the benefits that each affords you.

The following procedure describes what to do if you believe that your SunPCi II card is defective while under warranty.

Note – The specific procedure you should follow depends on the warranty service available from your service provider or sales representative.



Caution – Performing field upgrades to the processor or adding RAM SODIMMs to the card that are not supplied by Sun will invalidate your warranty.

Replacing a Defective Card

1. Make sure that the problem is with your card. Verify that the card is correctly installed, as described in “Installing the SunPCi II Hardware” on page 5.

2. If there is a problem, contact your service provider or sales representative.

To speed service, have your system serial number and SunPCi II card sales order number available. Note that the benefits provided by your service provider may differ from those provided by the standard Sun factory warranty.

3. Remove the defective card.

Follow the instructions about removing the PCI card in the documentation that accompanied your UltraSPARC system, or have your service provider remove the card for you.

Note – If you installed additional memory into your SunPCi II card, make sure to remove it before returning the card for service. The card you return should be shipped in its original configuration with its original capacity SODIMM installed, and with the add-on backplate and all accompanying materials. If you require a replacement card, the replacement will not have additional memory installed. Keep your additional memory for installation when the replacement card arrives.

4. Wait for the replacement card to arrive.

The specific method used to ship your replacement part to you will vary depending on your service provider.

5. Install the replacement card and verify that it is working correctly.

6. Return the defective card to your service provider.

Again, specific instructions for returning the defective card will vary depending on your service provider.

The *SunPCi II 2.2 User's Guide* contains troubleshooting instructions for SunPCi II hardware and software. Refer to Appendix A, "Troubleshooting," in the User's Guide for more information.