Solaris™ 2.5 (BETA) x86 Driver Update 1 Guide

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Contents

About This Book

This document provides information about x86 hardware devices that are now supported on the Solaris™ 2.5 computing environment. Typically, as new drivers become available, they will be bundled with releases on separate (BETA) Driver Update diskettes. You can use the (BETA) Driver Update diskettes to install a new system for the first time, or you can use them to update your installed Solaris 2.5 (BETA) system with new drivers.

Before You Read This Book

This document contains additional device configuration information for newly supported hardware. The importance of properly configured hardware prior to installing Solaris is discussed in the *x86 Device Configuration Guide*. This document assumes you have fully read and understood that guide; Appendix A, "Device Reference Pages," in this document is an addendum to that guide. Likewise, the installation instructions for this (BETA) Driver Update are very brief and serve only to supplement the instructions found in *x86: Installing Solaris Software*.

How This Book Is Organized

A brief description of the contents of the (BETA) Driver Update diskettes is followed by installation instructions for the new drivers, and detailed configuration instructions for the hardware devices that are supported by the new drivers.

Note – Even though the instructions for installing the new drivers are presented first, read and follow the appropriate hardware configuration instructions in Appendix A, "Device Reference Pages," before installing the new drivers. The hardware must be configured properly for the Solaris software to install and run correctly.

Chapter 1, "Solaris 2.5 (BETA) x86 Driver Update 1," provides information about what is new in this release and how to install it.

Chapter 2, "Solaris 2.5 (BETA) x86 Driver Update 1 Video," provides information about the contents, installation instructions, and known problems for the video support in this (BETA) Driver Update.

Appendix A, "Device Reference Pages," provides device configuration information for the hardware supported by the drivers in this (BETA) Driver Update. This appendix should be read and the hardware configured *prior* to installing the (BETA) Driver Update software.

Related Books

You may need to refer to the following books when installing the (BETA) Driver Update:

- *x86 Device Configuration Guide*
  Describes how to configure x86 devices before installing the Solaris software.
- *x86: Installing Solaris Software*
  Describes how to install the Solaris software on x86 systems.
- *x86: Solaris 2.5 Installation Notes*
  Describes late-breaking news about running Solaris 2.5 (BETA) software, including known problems with supported hardware or device drivers.
- *Solaris 2.5 x86 Hardware Compatibility List*
  Contains a list of supported hardware on Solaris 2.5 (BETA) x86 systems.

Solaris 2.5 (BETA) x86 Driver Update 1 — 1

(BETA) Driver Update Contents

Solaris 2.5 (BETA) x86 Driver Update 1 contains four diskettes labeled:

- “Driver Update 1 CD/Disk Boot for Solaris 2.5 (BETA) x86 Platform”
- “Driver Update 1 Net Boot for Solaris 2.5 (BETA) x86 Platform”
- “Driver Update 1 Distribution for Solaris 2.5 (BETA) x86 Platform”
- “Driver Update 1 Distribution (Video) for Solaris 2.5 (BETA) x86 Platform”

The Boot and Distribution diskettes are intended to be used with a Solaris 2.5 (BETA) x86 CD or network boot server. The “Driver Update 1 Distribution (Video) for Solaris 2.5 (BETA) x86 Platform” diskette can only be used on systems that already have the Solaris 2.5 (BETA) operating environment installed. The contents of the this diskette are discussed in Chapter 2, “Solaris 2.5 (BETA) x86 Driver Update 1 Video.”

(BETA) Driver Update Boot Diskette

The Solaris 2.5 (BETA) operating environment can be installed on x86 systems with one of two new boot diskettes labeled “Driver Update 1 CD/Disk Boot for Solaris 2.5 (BETA) x86 Platform” and “Driver Update 1 Net Boot for Solaris

2.5 (BETA) x86 Platform.” The Net Boot diskette is to be used when installing over a network; the CD/Disk Boot diskette is to be used when installing from a CD. Choose the one appropriate for your installation.

Note – Throughout the rest of this document, the name of the Boot diskette will be referred to as “Driver Update 1 Boot for Solaris 2.5 (BETA) x86 Platform” or “(BETA) Driver Update Boot.”

This Multiple Device Boot (MDB) diskette contains scripts and configuration files that enable you to boot and install your system using one of the newly supported devices. During installation of the Solaris software, one or more of the (BETA) Driver Update Distribution diskettes will be read.

(BETA) Driver Update Distribution Diskette

The (BETA) Driver Update *Distribution* diskette (labeled “Driver Update 1 Distribution for Solaris 2.5 (BETA) x86 Platform”) is read when the (BETA) Driver Update Boot diskette is used to install Solaris. Alternatively, the (BETA) Driver Update Distribution diskette can be used without the boot diskette to add new drivers to an existing x86 system running Solaris 2.5 (BETA).

The (BETA) Driver Update Distribution diskette contains the drivers listed in Table 1-1 and Table 1-2. A new or updated Section 7D manual page for each of the drivers that added new device support will also be installed in the appropriate `man` page directory during installation.

Table 1-1 Device Drivers Added in Solaris 2.5 (BETA) Driver Update 1

SCSI HBA Drivers	
`adp`	Adaptec® AIC-7870/7850 driver that supports the AHA™-2940 and AHA-2940W PCI-to-Fast SCSI host bus adapters, and motherboards that integrate the Adaptec AIC-7870 and AIC-7850 controller chips, such as the DECpc™ XL 590 and the Samsung Magic Power SPC8500P
`corvette`	IBM® SCSI-2 Fast/Wide Adapter/A
`mlx`	Updated driver to support IBM DMC960 RAID controllers (IBM SCSI-2 RAID and IBM SCSI-2 Fast/Wide Streaming-RAID Adapter/A)

Table 1-1 Device Drivers Added in Solaris 2.5 (BETA) Driver Update 1 *(Continued)*

Network Drivers	
eepro	Intel® EtherExpress™ PRO Ethernet
nee	Novell/Eagle Technology NE3200 Ethernet
nei	Novell/Eagle Technology NE2000, NE2000plus Ethernet
pcn	AMD® PCnet™ driver to support integrated motherboards based on the AMD PCnet-ISA and PCnet-PCI controller chips
riles	Racal InterLan® ES3210/ES3210 TP Ethernet

Updated versions of the following drivers are included in this distribution to correct some known problems.

Table 1-2 Updated Drivers to Correct Known Problems

dpt	Updated SCSI HBA driver for DPT® adapters
dsa	Updated SCSI HBA driver for Dell® SCSI Array adapters
elink	Updated network driver for 3Com® EtherLink® 16 (3C507) adapters
esa	Updated SCSI HBA driver for Adaptec AIC-7770/ AHA-274*x*/AHA-284*x* adapters
smce	Updated network driver for the SMC® Elite32 adapter

For a complete list of the known problems that are fixed in this (BETA) Driver Update, see the `README` files that get installed in the patch directories `/var/sadm/patch/`<*patch number*>, where <*patch number*> is one of the following for Solaris 2.5 (BETA) Driver Update 1: `102503-01`, `102504-01`, `102505-01` and `102506-01`.

Note – The Novell® NE2000 and NE2000plus are sensitive to autoprobing by other drivers and require autoprobe reset sequences that may disturb other cards. For this reason, the Solaris `nei` driver is disabled by default, and special steps must be taken to enable it. See “Modifying the Solaris (BETA) Driver Update Boot Diskette” on page 4 or “Enabling Support for the Novell NE2000/NE2000plus After Installing the (BETA) Driver Update” on page 8.

Note – Due to conflicts, the IBM SCSI-2 Fast/Wide Adapter/A should not be installed until the Solaris `mcis` driver is disabled. See "Modifying the Solaris (BETA) Driver Update Boot Diskette" on page 4 or "Disabling Drivers After Installing the (BETA) Driver Update" on page 9.

(BETA) Driver Update Distribution (Video) Diskette

See Chapter 2, "Solaris 2.5 (BETA) x86 Driver Update 1 Video," for a complete list of the video display adapters supported in this release.

Solaris 2.5 (BETA) Driver Update 1 Release Notes

Known Problems

(1207598) Attempting to netinstall on some systems with a built-in PCnet card may cause system panics while trying to netboot. The panics have been observed on the Hewlett-Packard HP Vectra and the Intergraph® TD-2.

Modifying the Solaris (BETA) Driver Update Boot Diskette

Before you install the Solaris operating environment on your system, it may be necessary to modify the (BETA) Driver Update Boot diskette to remove or enable certain drivers that conflict with each other. For example:

- The Novell NE2000/NE2000plus Ethernet adapters are sensitive to autoprobing by other drivers and require reset sequences that may disturb other network cards. For this reason, the `nei` driver is disabled by default, and special steps must be taken to enable it.
- The Solaris `mcis` driver interferes with the proper operation of the newly supported IBM SCSI-2 Fast/Wide Adapter/A. To avoid conflicts, the Solaris `mcis` driver must be disabled before the IBM SCSI-2 Fast/Wide Adapter/A can be installed.
- The Solaris `elink` driver may interfere with the proper operation of PCnet-ISA adapters. If you are installing the Solaris software over a network that uses a PCnet-ISA adapter, and you experience problems with the network hanging, it may be necessary to exclude the `elink` driver from the (BETA) Driver Update Boot diskette before attempting to install again.

There are scripts on the (BETA) Driver Update Boot diskette for these purposes. The diskette must be modified using DOS. As a precaution, you should make a backup of the original Boot diskette prior to invoking the special script.

1. **Boot DOS on your system.**
2. **Insert a blank 3.5–inch diskette into drive A: and format it:**
   `format a:`
3. **Insert the (BETA) Driver Update *Boot* diskette into drive A: and make a copy of it:**
   `diskcopy a: a:`
4. **Store your original Boot diskette in a safe place.**
5. **Label the copy of the Boot diskette as "Modified."**
   For example:
   "Modified Driver Update 1 Boot for Solaris 2.5 (BETA) x86 Platform (NE2000/NE2000plus)," or "Modified Driver Update 1 Boot for Solaris 2.5 (BETA) x86 Platform (IBM SCSI-2 Fast/Wide Adapter/A)," or "Modified Driver Update 1 Boot for Solaris 2.5 (BETA) x86 Platform (PCnet-ISA)."

   Note: Solaris 2.5 (BETA) Driver Update 1 contains two Boot diskettes. Remember to include CD/Disk or Net on the label of the modified Boot diskette.
6. **Put the modified Boot diskette back into drive A:.**
7. **Change to drive A: (remember DOS is still running):**
   `a:`
8. **Run the batch command file.**
   - For NE2000/NE2000plus support, run the `nov2000.bat` command file:
     `nov2000`
   - For IBM SCSI-2 Fast/Wide Adapter/A support, run the `corvette.bat` command file:
     `corvette`
   - To avoid PCnet-ISA conflicts, run the `pcnet.bat` command file:
     `pcnet`

Now the Boot diskette is prepared to install the Solaris software on your system. If you have not already done so, configure your hardware as described in Appendix A, "Device Reference Pages."

Installing Solaris Using the (BETA) Driver Update Diskettes

To install Solaris 2.5 (BETA) on an x86 system, follow the instructions in *x86: Installing Solaris Software* using the diskette labeled "*Driver Update 1 Boot for Solaris 2.5 (BETA) x86 Platform*."

The procedure for installing Solaris using the (BETA) Driver Update Boot diskette is almost the same as that described in *x86: Installing Solaris Software*. There will be many times during the early booting process when the system will read data from the diskette, but the sequence of interaction with the user remains the same. Early in the boot process there will also be warning messages for each new driver whose device is not on the system being installed. The warning messages will look like the following:

```
Warning: forceload of drv/xxx failed.
```

Such warning messages are expected and can be ignored.

Before the installation program begins to install the Solaris software, you will be able to choose whether you want the system to reboot after installing the software.

Late in the install process, after all the standard packages have been installed, new driver packages will be installed from the (BETA) Driver Update Distribution diskette. At the start of that phase of the installation, one of the install scripts will ask you to insert the (BETA) Driver Update Distribution diskette into the drive. After the new driver packages have all been added, the script will ask you to remove the diskette from the drive. In each case, it will wait for you to perform the requested action and then press Enter.

After this is accomplished, the system will reboot as usual (unless you chose the option not to reboot after installing the software). When it comes up, the new device drivers should be completely installed and functional.

To install the new video display support, see Chapter 2, "Solaris 2.5 (BETA) x86 Driver Update 1 Video," for instructions.

Adding New Drivers After Solaris Is Installed

If you already have the Solaris 2.5 (BETA) software installed, the simplest way to add one of the new drivers to your system is to obtain the (BETA) Driver Update *Distribution* diskette and install it as a patch on your Solaris 2.5 (BETA) x86 system.

Note – Before adding new drivers, the newly supported hardware devices should be installed and configured according to the instructions in Appendix A, "Device Reference Pages."

Follow these procedures to install the new drivers:

1. **Insert the (BETA) Driver Update *Distribution* diskette into drive 0.**

2. **Become root.**

3. **Use `cpio` to copy files off the diskette and run the installation script.**
   The following commands assume Volume Management is running on your system. If it isn't, `volcheck` should *not* be run and the device name of the diskette drive needs to be replaced with `/dev/diskette0`.

To see if Volume Management software is running, type:
`ps -e | fgrep vold`
For more information about managing diskettes and drives, see *System Administration Guide, Volume I*.

```
# mkdir /tmp/Drivers
# cd /tmp/Drivers
# volcheck &
# cpio -iduBI /vol/dev/aliases/floppy0
# ./installdu.sh
```

4. **Remove the diskette from drive 0, and follow the instructions on the screen to shut down the system.**
   The instructions include how to restart the system.

5. **A second `reboot` may be required if you have installed new hardware that uses a new network driver. See "Replacing a Network Card" on page 11.**

When the system comes up, the new device drivers should be completely installed and functional. However, there may be additional steps you need to take:

- If you want to support an NE2000 or NE2000plus Ethernet adapter, you must enable the driver before the card is installed and configured. See "Enabling Support for the Novell NE2000/NE2000plus After Installing the (BETA) Driver Update" on the next page.
- If you want to support an IBM SCSI-2 Fast/Wide Adapter/A, you must disable the Solaris `mcis` driver before the adapter is installed and configured. See "Disabling Drivers After Installing the (BETA) Driver Update" on page 9.
- If you have a PCnet-ISA adapter and you experience network problems, you may need to disable another driver so that it won't interfere with the operation of the PCnet-ISA adapter. See "Disabling Drivers After Installing the (BETA) Driver Update" on page 9.
- If you are replacing a network card with a newly supported network card, see "Replacing a Network Card" on page 11."

To install the new video display support, see Chapter 2, "Solaris 2.5 (BETA) x86 Driver Update 1 Video," for instructions.

Enabling Support for the Novell NE2000/NE2000plus After Installing the (BETA) Driver Update

If you already have the Solaris 2.5 (BETA) operating environment running on your system and you now want to add an NE2000 or NE2000plus Ethernet card, you need to disable the conflicting drivers that are already installed on your system. This must be done *prior* to installing the NE2000/NE2000plus card but *after* installing the Solaris 2.5 (BETA) x86 Driver Update 1 software.

1. **Follow the instructions under "Adding New Drivers After Solaris Is Installed" on page 7 of this document to install Solaris 2.5 (BETA) x86 Driver Update 1.**

2. **Become root.**

3. **Use a text editor (such as `vi`) to edit the `/etc/system` file, and add the following lines:**

```
exclude: eepro
exclude: el
exclude: elink
exclude: iee
```

```
exclude: pcn
exclude: smc
exclude: tiqmouse
```

To comment out a line in the `/etc/system` file, place an asterisk * at the beginning of the line.

4. **Remove or comment out the following lines:**

```
exclude: nei
forceload: drv/eepro
forceload: drv/el
forceload: drv/elink
forceload: drv/iee
forceload: drv/pcn
forceload: drv/smc
```

To uncomment a line in the `/etc/system` file, remove the asterisk * at the beginning of the line.

5. **Add or uncomment the following line:**

```
set nei:nei_forceload = 1
```

6. **Save your changes and exit the editor.**
7. **Shut down the system and power it off.**
8. **Install the NE2000 or NE2000plus card and configure it according to the information in Appendix A, "Device Reference Pages."**
9. **Reboot the system.**

Note – Upon reboot, the Ethernet cards listed in the device page for "Novell NE2000, NE2000plus Ethernet" in Appendix A, "Device Reference Pages," will no longer be recognized by the Solaris software and cannot be used in the system with the NE2000/NE2000plus.

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10. **If the newly installed NE2000/NE2000plus Ethernet card is replacing another network card, there is an additional step you must take. See "Replacing a Network Card" on page 11.**

Disabling Drivers After Installing the (BETA) Driver Update

It is sometimes necessary to disable certain Solaris drivers so that they will not interfere with the proper operation of other hardware. For example:

- The Solaris `mcis` driver interferes with the proper operation of the IBM SCSI-2 Fast/Wide Adapter/A. Before you can install and configure this newly supported adapter, the `mcis` driver must be disabled.

- The Solaris `elink` driver may interfere with the proper operation of PCnet-ISA adapters. If you already have Solaris installed on your system, and after installing this (BETA) Driver Update you experience network problems with your PCnet-ISA adapter, try disabling the Solaris `elink` driver.

To disable a driver requires modifying a system file and rebooting.

1. **Install the (BETA) Driver Update by following the instructions under "Adding New Drivers After Solaris Is Installed" on page 7.**
2. **Become root.**
3. **Use a text editor (such as `vi`) to edit the `/etc/system` file, and add one of the following lines.**
   - For SCSI-2 Fast/Wide Adapter/A support, add the line:
     `exclude: mcis`
   - For PCnet-ISA support, add the line:
     `exclude: elink`
4. **Remove or comment out one the following lines.**

   To comment out a line in the `/etc/system` file, place an asterisk * at the beginning of the line.

   - For IBM SCSI-2 Fast/Wide Adapter/A support, remove or comment out the line:
     `forceload: drv/mcis`
   - For PCnet-ISA support, remove or comment out the line:
     `forceload: drv/elink`
5. **Save your changes and exit the editor.**
6. **Shut down the system and power it off.**
7. **Install the IBM SCSI-2 Fast/Wide Adapter/A or the PCnet-ISA adapter and configure it according to the information in Appendix A, "Device Reference Pages."**
8. **Reboot the system.**

Note – Upon reboot, the IBM Micro Channel® SCSI adapter will no longer be recognized by the Solaris software, and it cannot be used in a system with the IBM Micro Channel SCSI-2 Fast/Wide Adapter/A.

Note – Upon reboot, the 3Com EtherLink 16 (3C507) Ethernet card will no longer be recognized by the Solaris software, and it cannot be used in a system with the PCnet-ISA.

9. **If the newly installed PCnet-ISA card is replacing another network card, there is an additional step you must take. See the next section, "Replacing a Network Card."**

Replacing a Network Card

If you have replaced your network card with one that uses a different network driver (for example, `eepro`), you will need to rename the `/etc/hostname.`*olddriver*`0` file to `/etc/hostname.`*newdriver*`0` before rebooting the second time. For example, if you have replaced a 3Com EtherLink III card with an Intel EtherExpress PRO card, you would need to run the following command as root:

```
# mv /etc/hostname.elx0 /etc/hostname.eepro0
```

Now perform a reconfiguration boot to make your changes take effect:

```
# touch /reconfigure
# reboot
```

Solaris 2.5 (BETA) x86 Driver Update 1 Video

2

A brief description of the contents of the video support included in Solaris 2.5 (BETA) x86 Driver Update 1 is followed by installation instructions and known problems. Read through the entire chapter once before installing the (BETA) Driver Update Video.

(BETA) Driver Update Video Contents

Solaris 2.5 (BETA) x86 Driver Update 1 Video contains one diskette labeled: "Driver Update 1 Distribution (Video) for Solaris 2.5 (BETA) x86 Platform." The Video Distribution diskette is intended to be used on Solaris 2.5 (BETA) x86 systems only. Table 2-1 contains a list of video display adapters supported in this (BETA) Driver Update. While this table includes the resolution and color depth capabilities of each adapter, it is important to note that the resolution and color depth you select are also dependent on the capabilities of your monitor and the amount of video memory on the card. See *x86 Device Configuration Guide* for more information.

Note – Throughout the rest of this chapter, the name of the Video diskette wil be referred to as "(BETA) Driver Update Video."

Table 2-2 on page 14 lists the additional notebook display support included in this (BETA) Driver Update. Note that the resolution and color depth capabilities may depend on whether an external monitor is attached.

Table 2-1 New Video Display Adapters Supported in This (BETA) Driver Update

Vendor	Model	Bus[2]	Chipset	Resolution and Color Depth									
				800x600		1024x768		1152x900		1280x1024		1600x1200	
				8	24	8	24	8	24	8	24	8	24
AST	Manhattan 5090P[1]	—	Cirrus Logic 5424	✓									
Cirrus Logic	5420 chipset w/512Kbyte DRAM			✓									
	5424 chipset w/512Kbyte DRAM[1]			✓									
Compaq	ProLiant	—	Cirrus Logic 5420	✓									
	ProSignia	—	Cirrus Logic 5420	✓									
Micronics	Mpower 4 plus	—	ATI Mach64	✓		✓							

1. Video adapters based on the Cirrus Logic 5424 chipset with 512Kbyte DRAM may not perform well in 800x600x256 mode, particularly if the selected monitor refresh rate is 60 Hz or higher. See the release note on page 15.

2. "—" Indicates onboard video controller.

Table 2-2 New Video Support for Notebook Displays in This (BETA) Driver Update

Vendor	Model	Chipset	Resolution and Color Depth E=With External Monitor I=With Internal Monitor					
			640x480		800x600		1024x768	
			8	24	8	24	8	24
Ergo	Power Brick	Western Digital 90C24	**I**					
NEC	Versa M75C	Chips&Technology 65540	**E,I**		**E**		**E**	
	Versa M75HC	Chips&Technology 65545	**E,I**		**E,I**		**E**	
Toshiba	4900CT	Chips&Technology 65545	**E,I**		**E**		**E**	

Caution – Even though many notebook computers are capable of supporting external monitors at a resolution higher than 640x480, you should not change the default video resolution on a notebook computer to be anything other than what the internal monitor can support. Higher resolution video modes do not work on the integrated LCD screen; if you happen to start up the window system without an external monitor, you may not be able to see anything on the LCD screen. In some cases, this may even damage your LCD screen. See "Configuring Secondary Displays" on page 17.

(BETA) Driver Update Video Release Notes

- Video adapters based on the Cirrus Logic 5424 chipset with 512Kbyte DRAM may not perform well in 800x600x256 mode under the Solaris OpenWindows™ environment. This is particularly noticeable if the selected monitor refresh rate is 60 Hz or higher. This is a hardware limitation. To obtain the best performance in 800x600x256 mode, choose the "`Multifrequency—38kHz`" monitor type when configuring the window system.
- This (BETA) Driver Update Video release also includes software fixes to some known problems. See the `README` file in the directory `/var/sadm/patch/102535-01` for a list of the problems fixed.

Known Problems

(1200644) When using an LCD screen at a resolution of 800x600 in 256 color mode, sometimes the image in the upper left portion of the screen will expand to fill the entire screen.
Workaround: To adjust the size and position of the screen, press the screen-switching function key three times. For example, press the Fn key and the LCD/CRT key simultaneously. Refer to your notebook computer manual to see how your particular machine operates.

Most notebook computers have a function key that can be used to switch between the LCD and the external monitor, or simultaneously display both.

Installing (BETA) Driver Update Video

The contents of the (BETA) Driver Update Video diskette is installed as patches on your Solaris 2.5 (BETA) x86 system. To do this, you must already have Solaris 2.5 (BETA) installed and running on your x86 system.

Note – When installing the Solaris 2.5 (BETA) software on a system that contains one of the newly supported video cards listed in Table 2-1, if you choose to configure the window system, your card will not be included yet in the list of supported display adapters. However, you can still use a graphics-based interface to the Solaris installation program by choosing the standard 16 colors, 640x480 VGA. Alternatively, you can use a character-based interface by choosing not to configure the window system when asked.

After installing the (BETA) Driver Update software, the installation script will give you the option of configuring the window system by running the `kdmconfig` program. If you choose to do this, you will be asked to configure your keyboard, mouse, and video card again; however, this time you will be able to select from a list that includes the newly supported video cards.

1. **Insert the (BETA) Driver Update Video diskette into drive 0.**
2. **Become root.**
3. **Use `cpio` to copy files off the diskette and run the installation script.**
   The following commands assume Volume Management is running on your system. If it isn't, `volcheck` should *not* be run and the device name of the diskette drive needs to be replaced with `/dev/diskette0`.

To see if Volume Management software is running, type:
`ps -e | fgrep vold`
For more information about managing diskettes and drives, see *System Administration Guide, Volume I*.

```
# mkdir /tmp/Drivers
# cd /tmp/Drivers
# volcheck &
# cpio -iduBI /vol/dev/aliases/floppy0
# ./installdu.sh
```

4. **Configure the window system.**
   After the (BETA) Driver Update Video software has been installed, the installation script asks if you want to configure the window system. If you do not want to configure the window system at this time, you must run the following commands after the installation script ends *and* before you start the OpenWindows software:

```
# kdmconfig -u
# kdmconfig -cf
```

   If you want to configure the window system at this time, the `kdmconfig` program will be started for you. The `kdmconfig` program will ask you to configure your keyboard, mouse, and display adapter. The list of display adapters will appear alphabetically by vendor. To quickly scroll through the list, type the first few letters of the vendor name. For example, type `Mi` to get to the "`Micronics Mpower4 Plus`" entry. Some of the names of display adapters on the list may be followed by the amount of video memory on the card. For example, "`Diamond Stealth 64 (2MB)`" indicates 2 Mbytes of memory on the Diamond Stealth 64™ card. Be sure to select an entry that matches your configuration.

After you have selected your display adapter, you may be asked additional questions about screen size, color depth, display resolution, and monitor type.

5. **Select the Correct Screen Size, Color Depth, Resolution, and Monitor from the list displayed by `kdmconfig`.**
   Selecting '8' for color depth means your adapter is capable of 8-bit color (256 colors), whereas '24' means 24-bit color (2^{24} or 16,777,216 colors). After choosing the monitor's screen size, color depth, and resolution, you will be shown a list of supported monitors. If you have a multisync/multifrequency monitor, check the manufacturer's documentation to find out the maximum horizontal synchronization rate supported by the monitor. For example, if you have a ViewSonic® 17 monitor, which has a maximum horizontal sync rate of 82 kHz, select "`MultiFrequency-80kHz (up to 1600x1200@60 Hz)`" as the monitor type.

6. **Remove the diskette from drive 0.**

7. **Clean up the temporary workspace.**

```
# cd /
# rm -fr /tmp/Drivers
```

Installation of (BETA) Driver Update Video is complete and you can now run the `openwin` command to start the window system.

Configuring Secondary Displays

These instructions allow you to configure a secondary display for notebook computers that have an external monitor without changing the default video resolution.

Caution – Even though many notebook computers are capable of supporting external monitors at a resolution higher than 640x480, you should not change the default video resolution on a notebook computer to be anything other than what the internal monitor can support. Higher resolution video modes do not work on the integrated LCD screen; if you happen to start up the window system without an external monitor, you may not be able to see anything on the LCD screen. In some cases, this may even damage your LCD screen.

The configuration that will be installed will define display 0 as the internal monitor, and display 1 as the external monitor. The external monitor will be configured for 1024x768, 256 colors.

1. **Become root.**
2. **Change to the** `/etc/openwin/server/etc` **directory.**

```
# cd /etc/openwin/server/etc
```

3. **Copy the appropriate OpenWindows configuration file for your notebook to the file** `OWconfig`**.**
   a. **If you have a Toshiba 4900CT notebook computer, type:**
   `cp /usr/openwin/server/etc/OWconfig.4900ct OWconfig`
   b. **If you have an NEC® Versa™ M75C, type:**
   `cp /usr/openwin/server/etc/OWconfig.vm75c OWconfig`
   c. **If you have an NEC Versa M75HC, type:**
   `cp /usr/openwin/server/etc/OWconfig.vm75hc OWconfig`

To perform a reconfiguration boot, type the commands:
`touch /reconfigure`
`reboot`

Note – The OpenWindows configuration file that is being installed assumes you are using a built-in PS/2® style mouse. If you connect a PS/2 style mouse to the external mouse/keyboard port, you will need to perform a reconfiguration boot before bringing up the OpenWindows environment.

4. **Exit from superuser status.**
5. **Start the OpenWindows software, indicating which display to use.**
   a. **To use the internal display, type:**
   `openwin -display :0`
   b. **To use the external display, type:**
   `openwin -display :1`

Device Reference Pages A

This appendix supplements Appendix B, “Device Reference Pages,” in the *x86 Device Configuration Guide*. It includes necessary device configuration information for hardware supported by the new or updated drivers.

Use the following table to locate information about your hardware and proceed directly to those pages.

SCSI Host Bus Adapters	**Solaris Driver**	
Adaptec AIC-7870/AIC-7850/AHA-294x PCI SCSI HBAs	`adp`	*page 21*
IBM DMC960 RAID Micro Channel HBAs (IBM SCSI-2 RAID, IBM SCSI-2 Fast/Wide Streaming-RAID Adapter/A)	`mlx`	*page 23*
IBM Micro Channel SCSI-2 Fast/Wide Adapter/A	`corvette`	*page 25*
Network Adapters		
AMD PCnet Ethernet (PCnet-ISA, PCnet-PCI)	`pcn`	*page 28*
Intel EtherExpress PRO	`eepro`	*page 30*
Novell NE2000, NE2000plus Ethernet	`nei`	*page 31*
Novell NE3200 EISA Ethernet	`nee`	*page 31*
Racal InterLan ES3210/ES3210 TP EISA Ethernet	`riles`	*page 37*

Part 1 — SCSI Host Bus Adapters

Adaptec AIC-7870/AIC-7850/AHA-294*x* PCI SCSI HBAs

Description

The Adaptec AHA-2940 and AHA-2940W cards are PCI-to-Fast SCSI controllers based on the Adaptec AIC-7870 and AIC-7850 chips.

Device Configuration

Configuring the Device

1. **Ensure that the SCSI bus is properly terminated.**
2. **Set up the IRQ for the controller by using the CMOS setup utility supplied with the motherboard (if this feature is available for your computer).**
   If you have more than one controller (or an embedded controller), use one IRQ per controller.
3. **If you have more than one PCI SCSI board, be sure to attach the CD-ROM drive to the primary controller.**
4. **Run the vendor-supplied configuration utility by pressing Ctrl-A at boot time.**
5. **Ensure that support for more than two DOS drives is disabled.**
   For older drives, tapes, and most CD-ROM devices, make sure the maximum SCSI data transfer speed is set to 5.0 Mbytes per second.

Known Problems and Limitations

- On some PCI systems with an Adaptec 294*x* card installed, user-level programs may core dump under heavy system load (such as during installation). The problem is *not* with the Adaptec hardware. However, if you continue to see user-level programs dumping core, disable write-back caching (or all caching if there is no control over the caching algorithm) via the CMOS. This problem has been observed on a number of PCI motherboards, including the following:
  - PCI motherboards with a 60 MHz Pentium™ chip, with PCI chipset numbers S82433LX Z852 and S82434LX Z850. The part number of the Intel motherboard is AA616393-007.

- PCI motherboards with a 90 MHz Pentium chip, with PCI chipset numbers S82433NX Z895, S82434NX Z895, and S82434NX Z896. The part number of the Intel motherboard is 541286-005. (Gateway 2000 uses this motherboard.)

- The Adaptec 2940 SCSI adapter does not recognize the Quantum Empire™ 1080S SCSI disk drive or the HP 3323 SE SCSI disk drive.
  Workaround: Reduce the Synchronous Transfer rate on the Adaptec controller to 8 Mbytes per second.

IBM DMC960 RAID Micro Channel HBAs (IBM SCSI-2 RAID, IBM SCSI-2 Fast/Wide Streaming-RAID Adapter/A)

Description

The IBM DMC960 RAID Micro Channel bus controllers include the IBM SCSI-2 RAID and the IBM SCSI-2 Fast/Wide Streaming-RAID Adapter/A.

Device Configuration

Preparing for Configuration

- The choice of SCSI target ID numbers is limited. Assuming the maximum number of targets per channel on the particular model IBM host bus adapter is MAX_TGT, the SCSI target IDs on a given channel should range from 0 to (MAX_TGT – 1). See the vendor documentation for more information.
- SCSI target IDs on one channel can be repeated on other channels.

  Example:
  The IBM DMC960 model supports a maximum of seven targets per channel, that is, MAX_TGT = 7. Therefore, the SCSI target IDs on a given channel should range from 0 to 6.

Configuring the Device

1. **Consult your Device Configuration Worksheet to see if the IBM DMC960 settings need to be changed.**

2. **Follow the configuration instructions in the vendor's manual.**

Known Problems and Limitations

- If a SCSI disk drive is not defined to be part of any physical pack within a system drive, it is automatically labeled as a *standby* drive. If any SCSI disk drive within a system drive fails, data on a standby drive *may be lost* due to the standby replacement procedure. This procedure will overwrite the standby drive if the failed disk drive is configured with any level of redundancy (RAID levels 1, 5, and 6) *and* its size is identical to the size of the available standby drive.

- The driver does not currently support variable-length tape drives. At this time, multivolume backup/restore is not supported for tape drives connected to the IBM DMC960.
- Other than the “hot replacement” of disk drives, which is described in the manufacturer’s user’s guide, the IBM DMC960 series does not currently support “hot-plugging” (adding or removing devices while the system is running). To add or remove devices you must shut down the system, add or remove devices, reconfigure the host bus adapter using the configuration utility provided by the manufacturer, and then reboot your system.
- **(1192152)** System panics may occur when certain CD-ROM players are installed and the `vold` program tries to access a non-audio CD-ROM. *Workaround*: Disable the Solaris Volume Management software when one of the following CD-ROM drives is installed:
  - Chinon CDS 535
  - NEC MultiSpin 4X
  - Pioneer DRM-604X

IBM Micro Channel SCSI-2 Fast/Wide Adapter/A

Description

The IBM SCSI-2 Fast/Wide Adapter/A is a SCSI controller used with a Micro Channel bus.

Caution – The Solaris `mcis` driver, which supports the IBM Micro Channel SCSI adapter, conflicts with the IBM SCSI-2 Fast/Wide Adapter/A. To avoid conflicts, the Solaris `mcis` driver must be disabled before the IBM SCSI-2 Fast/Wide Adapter/A can be installed. This is done by modifying the (BETA) Driver Update Boot diskette using the `corvette.bat` file under DOS; see "Modifying the Solaris (BETA) Driver Update Boot Diskette" in Chapter 1 for instructions.

If you already have the Solaris operating environment running on your system and you want to add support for the IBM SCSI-2 Fast/Wide Adapter/A, you should *not* install the adapter until steps have been taken to disable the `mcis` driver; see "Disabling Drivers After Installing the (BETA) Driver Update" in Chapter 1 for instructions.

Device Configuration

Preparing for Configuration

Ensure that the controller board is properly installed in any slot between 1 and 7. Slots 8 and above are not supported in this release.

Avoiding Possible Device Conflicts

The IBM SCSI-2 Fast/Wide Adapter/A cannot be installed on a system with the IBM Micro Channel SCSI adapter.

Valid Configurations

• IRQ	14
• I/O Address	0x3540, 0x3548, 0x3550, 0x3558, 0x3560, 0x3568, 0x3570, 0x3578

Known Problems and Limitations

- The microcode version of the SCSI-2 Fast/Wide Adapter/A board should be 0x71 or later. Boards with older versions, such as version 0x58, may cause the Solaris system to hang when using certain tape drives. The Solaris `corvette` driver displays a warning message if it detects an older, unsupported version of the adapter.
- The IBM SCSI-2 Fast/Wide Adapter/A is currently only supported on systems with at least 32 Mbytes of memory installed.

Part 2 — Network Adapters

AMD PCnet Ethernet (PCnet-ISA, PCnet-PCI)

Description

The Solaris `pcn` driver supports the PCnet family of Ethernet controllers based on the AMD PCnet-ISA and PCnet-PCI controller chips. These include PCnet controllers embedded on motherboards found in systems from Intergraph and Hewlett-Packard, and a variety of add-in NICs.

Device Configuration

Avoiding Possible Device Conflicts

- The Solaris `elink` driver may interfere with the proper operation of PCnet-ISA adapters. If you are installing over a network that uses a PCnet-ISA Ethernet and you experience problems with the network hanging, try excluding the `elink` driver before attempting to install again. This is done by modifying the boot diskette using the `pcnet.bat` file under DOS; see "Modifying the Solaris (BETA) Driver Update Boot Diskette" in Chapter 1 for instructions.

- If you already have Solaris installed on your system, and after installing this (BETA) Driver Update you experience network problems with your PCnet-ISA adapter, try disabling the Solaris `elink` driver. This is done by modifying a system file and rebooting; see "Disabling Drivers After Installing the (BETA) Driver Update" in Chapter 1 for instructions.

- If your system has a PCnet-ISA controller note the configuration of other add-in adapters because the PCnet-ISA controller uses I/O addresses common to many other ISA and EISA adapters. It is particularly important to verify the configuration when installing add-in adapters to a system whose motherboard embeds the AMD chip.

Configuring the Device

PCnet-ISA

Be sure that your PCnet-ISA adapter does not conflict with other adapters configured in the system. The valid parameter settings for PCnet-ISA are listed under "Valid Configurations."

PCnet-PCI

PCI devices are autoconfigured by the system BIOS. No configuration is necessary.

Valid Configurations

The following parameters are supported for PCnet-ISA adapters:

• IRQ	3, 5, 9, 10, 11
• I/O Address	0x300, 0x320, 0x340, 0x360

Known Problems and Limitations

- In some cases, IRQ 4 may be offered as a configuration option for the PCnet-ISA adapters; the Solaris `pcn` driver does not support IRQ 4.
- On some systems, particularly those with PCI controllers, IRQ 9 may not be usable by a PCnet-ISA adapter; configure the PCnet-ISA adapter to use another interrupt. PCnet-PCI adapters are not affected.
- Some versions of the PCnet-PCI chip have known problems which result in unreliable network operation. These chip problems can also cause the system to completely "freeze."
  Workaround: Unfortunately, there are no known software workarounds. If you encounter these symptoms while using an adapter based on a PCnet-PCI chip, contact the vendor of the adapter to determine if the adapter contains the version of the chip known to exhibit these problems.
- **(1192044)** PCnet doesn't serve `rpl` requests until `snoop` is started.
  Any adapter supported by the Solaris `pcn` driver will not function as a network installation server unless the `snoop` command is also run using that adapter. This will be fixed in a future (BETA) Driver Update.

Intel EtherExpress PRO

Description

The Intel EtherExpress PRO is an Ethernet controller for the connectionless Data Link Provider Interface and is used with an ISA bus.

Device Configuration

Configuring the Device

1. **The Intel EtherExpress PRO can be configured to any I/O address that does not conflict with another device.**
2. **Choose one of the valid IRQ values listed below.**
3. **For all other settings, use the defaults.**

Valid Configurations

• IRQ	3, 5, 9, 10, 11 (10 is recommended)
• I/O Address	Any I/O address that does not conflict with another device; 0x300 is recommended

Novell NE2000, NE2000plus Ethernet

Description

The Novell NE2000 and NE2000plus are ISA bus Ethernet controllers. The NE2000plus card is software configurable; the NE2000 card must be manually configured with dip switches and jumpers.

Caution – The NE2000/NE2000plus adapters are sensitive to autoprobing by other drivers, and require autoprobe reset sequences that may disturb other cards. To avoid conflicts, the NE2000/NE2000plus cards cannot be installed on a system with the Solaris drivers listed in Table A-1.
In addition, the Solaris `nei` driver is disabled by default, and steps must be taken to enable it. There is a script (`nov2000.bat`) on the (BETA) Driver Update Boot diskette that will disable the other drivers and enable the `nei` driver; see “Modifying the Solaris (BETA) Driver Update Boot Diskette” in Chapter 1 for instructions.
If you already have the Solaris operating environment running on your system and you want to add support for the NE2000 or NE2000plus adapter, you should *not* install the adapter until steps have been taken to disable other drivers; see “Enabling Support for the Novell NE2000/NE2000plus After Installing the (BETA) Driver Update” in Chapter 1.

Table A-1 Solaris Drivers and Hardware That Conflict With the NE2000/NE2000plus

Solaris Driver	Supported Hardware
`eepro`	Intel EtherExpress PRO
`el`	3Com EtherLink II (3C503), EtherLink II/16 (3C503-16)
`elink`	3Com EtherLink 16 (3C507)
`iee`	Intel EtherExpress 16, 16C, 16TP, MCA, MCA TP
`pcn`	AMD PCnet Ethernet (PCnet-ISA, PCnet-PCI)
`smc`	SMC EtherEZ, EtherCard Elite16 Ultra, EtherCard PLUS Elite16, EtherCard PLUS (8416, 8216, 8013, 8003)
`tiqmouse`	Texas Instruments TravelMate 4000E QuickPort Ball Point mouse

Device Configuration

Preparing for Configuration

The NE2000/NE2000plus Ethernet cards present special problems for configuration. Various early versions and some clones of these models may hang the system when probed. The large I/O space used by the card (0x20 bytes) also increases the chance of conflicts with other devices. To avoid these problems, read and follow the advice on the next few pages.

- The Solaris `nei` driver expects the NE2000/NE2000plus card to be in a 16-bit ISA slot. Ensure that the card is in a 16-bit slot and is jumpered for 16-bit operations.
- Some NE2000/NE2000plus clones allow you to configure the bus speed; the bus speed on the card should match that of the system.
- Certain I/O Base addresses (0x320, 0x340, and 0x360) are not supported under the Solaris operating environment. These are described in the next section.

Avoiding Possible Device Conflicts

- Due to the large I/O space (0x20 bytes) used by the NE2000/NE2000plus cards, the I/O Base addresses of 0x320, 0x340, and 0x360 are not supported by default because of conflicts with other drivers. This leaves only 0x300 for the NE2000, and 0x240, 0x280, 0x2C0, and 0x300 for the NE2000plus.
- Unfortunately, some NE2000 clones will not operate at all combinations of I/O Base address and IRQ settings, so configuration may be further restricted to the default values of IRQ 3 and I/O Base address 0x300. Be sure to read the configuration information in the manual provided by the manufacturer of the card.

Caution – *Never* use an IRQ or I/O Base address other than the ones listed under "Valid Configurations," even if they are supported by the NE2000/NE2000plus card. Due to conflicts with other Solaris drivers, for example, the I/O Base addresses of 0x320, 0x340 and 0x360 are specifically disallowed in the Solaris `nei.conf` file.

- **For NE2000plus cards *only*:** If the card has been configured to run in SHARED MEMORY mode, it will use 0x4000 bytes of shared memory in the range 0xD0000-0xDFFFF. Be sure to check that the BIOS setup allocates this range of memory to the adapter and that other cards in the system do not conflict. If a conflict is unavoidable, configure the NE2000plus in I/O mode so that it will not use shared memory. (To configure the NE2000plus card, a vendor-supplied DOS program PLUSDIAG must be used.)

Configuring the Device

The NE2000 card is configured using dip switches. These must be set prior to installing the card. The NE2000plus card is configured using the vendor-supplied DOS program PLUSDIAG. To use it, the NE2000plus card must first be installed in your system.

1. **Set the IRQ to one of the interrupts listed under "Valid Configurations."**
2. **Set the I/O Base address to one of the values listed under "Valid Configurations."**
3. **Set the bus speed and bus width to match that of the system.**
4. **For NE2000plus cards *only*: The SHARED MEMORY address should be set starting from 0xD0000, increasing by 0x4000 for each additional card.**
5. **See "Known Problems and Limitations" for other potential problems.**

Valid Configurations

Note that some NE2000 clones may further restrict these choices.

NE2000:

• IRQ	2,3, 4, 5
• I/O Base Address	0x300

NE2000plus:

• IRQ	2, 3, 4, 5, 10, 11, 12, 15
• I/O Base Address	0x300, 0x240, 0x280, 0x2C0
• SHARED MEMORY	0xD0000-0xDC000

Known Problems and Limitations

- If data corruption errors occur while an NE2000/NE2000plus card is installed, check the bus speed that is set on the card. (This is a configurable option on some clone cards.) Some cards may not run reliably at 16 MHz, and must be configured to run at 8 MHz.

- Some NE2000/NE2000plus clones may misidentify slot width, or may not work with all mode or jumper settings. For example, some NE2000plus clones may only work in both data modes (I/O and shared memory), depending on the system configuration.
  Workaround: Try a different bus slot, if the card misdetects a 16-bit slot for an 8-bit slot. For NE2000plus clones, try both data modes by either setting the jumpers or using the DOS configuration program.
- If the NE2000 card is not recognized by the Solaris operating environment, it's possible the clone does not sufficiently resemble the NE2000 hardware; improper configuration setup may also cause this failure.
- If the system is hanging or the NE2000 card is not recognized by the Solaris software, it may be necessary to reset the bus speed or I/O recovery time (which may be settable in the system BIOS). General bus noise may also affect the behavior of certain NE2000 clones; try swapping devices into different slots until the card begins to function satisfactorily.
- If the system hangs after booting with a NE2000/NE2000plus card installed and removing the card no longer causes the system to hang, check the following:
  - The Solaris software has not been properly configured to support the NE2000/NE2000plus Ethernet driver. See the Caution at the beginning of this Device Reference Page.
  - The NE2000/NE2000plus card has not been jumpered for 16-bit operation, or has not been placed in a 16-bit slot. Some cards misdetect slot type. See "Preparing for Configuration."
  - The NE2000/NE2000plus clone is too poorly implemented to be recognizable. Replace the card.
  - The NE2000/NE2000plus card has not been configured properly. See "Avoiding Possible Device Conflicts" and "Configuring the Device."

Novell NE3200 EISA Ethernet

Description

Novell NE3200 EISA Ethernet controller.

Device Configuration

Preparing for Configuration

- The Novell NE3200 Ethernet card must be installed in an EISA slot.
- The media type must be decided before the device is configured. For example, the media type may be BNC (thin wire) or DIX (thick wire).

Avoiding Possible Device Conflicts

Proper EISA device configuration ensures no conflicts with other devices.

Configuring the Device

1. **Use the EISA configuration utility on your system to configure the controller.**
2. **Set the media type to either BNC or DIX.**
3. **Set the interrupt type to LEVEL TRIGGERED.**
4. **Choose an IRQ that is not taken by another device.**
   Note that IRQs for ISA devices are not usually displayed in the EISA configuration utility.

Valid Configurations

All of the EISA configurable parameters are also valid under the Solaris operating environment. As with any device, be wary of interrupt sharing.

Known Problems and Limitations

- If error messages such as "no such device" are displayed when attempting to access the Ethernet card, the device is probably not configured in the EISA configuration.

- Some NE3200 clones do not work with level-triggered interrupts.
  If you install an NE3200 card and your system hangs while trying to configure devices after reboot, it may not work with level-triggered interrupts.
  Workaround: Use the EISA configuration utility to select an interrupt type of EDGE TRIGGERED instead of LEVEL TRIGGERED.

Racal InterLan ES3210/ES3210 TP EISA Ethernet

Description

The Racal InterLan ES3210 is a 32-bit Ethernet adapter compatible with an EISA-bus. The card comes in two versions:

- ES3210 supports standard Ethernet (10Base5) and thin Ethernet (10Base2).
- ES3210 TP supports standard Ethernet (10Base5) and unshielded twisted-pair (10BaseT).

The ES3210 cards are based on the National 8390 network interface controller.

Note – Only the latest revision of the ES3210 is supported—it uses surface-mount technology; the earlier revision does not. The older boards have a white sticker on the back bearing the number 625-0136-00; the newer cards have the number 625-0367-00 or higher.

Device Configuration

Preparing for Configuration

- The Solaris driver for the ES3210/ES3210 TP does not support I/O-mapped I/O. Since this is the default setting for each card ("Shared memory disabled"), it must be changed. An explicit address for the memory area on the board must be configured as described under "Configuring the Device."
- The driver currently does not use DMA channels 0-3 since 32-bit burst mode DMA transfers cannot be accomplished on these channels. The driver forcibly uses memory-mapped I/O even when one of these DMA channels is configured.

Avoiding Possible Device Conflicts

- Check the IRQ levels used by devices on your system. The default setting for the IRQ on this Ethernet adapter is 3, which is typically used by COM2. IRQ 6 is typically used by the diskette controller.
- The choices for shared memory on the Racal InterLan ES3210 are C0000, C4000, C8000, CC000, D0000, D4000, D8000, and DC000; however, note that C0000-C3FFF is used by the VGA BIOS, if present.

Configuring the Device

Use the EISA configuration utility for your system to make the following settings for the ES3210 card:

1. **Select the interrupt (IRQ) the card will use.**
   This is done at the "Interrupt Level Select" prompt. Be sure to check this.

2. **Set the base address of the ES3210 memory to any available (unused) location.**
   This is done at the "Memory Base Address Selection" prompt.

Note – The default setting is "Memory Mapped Disable." The Solaris driver will not work with this setting; you must change it.

   Be sure that the address you choose is not being used by some other adapter, particularly an ISA adapter. Note that the EISA configuration utility cannot accurately detect conflicts with ISA cards; it relies on information you enter about these devices to determine if conflicts exist.

3. **Choose a DMA channel.**
   This is done at the "DMA Channel Select" prompt. If you choose DMA channel 0, 1, 2, or 3, DMA will *not* be used.

Valid Configurations

The following parameters are valid for the Racal InterLan ES3210:

• IRQ	3, 4, 5, 6, 7, 9, 10, 11, 12, 14, 15
• Memory Base Address	0xC0000, 0xC4000, 0xC8000, 0xCC000, 0xD0000, 0xD4000, 0xD8000, 0xDC000
• DMA Channel	Disable, 0, 1, 2, 3, 5, 6, 7

Known Problems and Limitations

(1188007) The current release of the Solaris `riles` driver causes the network performance to degrade considerably when the Ethernet adapter is configured to use a DMA channel of 5, 6, or 7. Even though these values are valid, it is best not to use them.