Installing the SBus Adapter Software

This chapter explains how to install the SBus adapter software, which includes an FDDI SBus driver and an SNMP agent. If the software needs to be removed from your system, see the appendix "Running the FDDI deinstall Script."

Requirements

To install the SBus adapter software, you need a SPARCstation or SPARCserver with a floppy disk drive in your network. Separate procedures are included for SunOS 4.1.x (see the following section, "SunOS Installation") and Solaris 2.x and later operating systems (see the section "Installing the Solaris 2.x Driver Using the pkgadd Script" later in this chapter).

You should be familiar with the UNIX system and a UNIX text editor. You also need to know the following:

- Your superuser login

- Your Internet Protocol (IP) address and host name for each SBus adapter you are going to install

For the SunOS 4.1.x installation, you should have 2,700 kilobytes (KB) of disk space in the /usr directory. If you are installing a new kernel (linkable driver), make sure you have 1,600 KB available in your root directory for the new kernel. Use the **df** command to check available disk space.

The Solaris 2.x installation procedure automatically checks for enough disk space.

SunOS Installation

The SunOS driver floppy disk contains both loadable and kernel-resident drivers. If you use the loadable driver, you can load or unload the driver into the kernel at any time. The loadable driver is appropriate for systems that boot from a local disk. The kernel-resident driver is built into a new kernel.

The SBus adapter software disk contains an installation script called install.fddi that adds an SNMP agent and installs a loadable or kernel-resident driver.

Following is an overview of this section on how to install software packages on your SunOS 4.1.x system:

- Copying the SunOS Driver Files

- Running the SunOS Install Script

- SunOS Loadable Driver Installation

- Files Added or Modified During Installation of the SunOS Loadable Driver

    — /etc/rc.local

    — /etc/loadable

    — New files in /dev

- SunOS Linkable, Kernel-Resident Driver Installation

- Files Added or Modified During Installation of the SunOS Linkable Driver

Caution If you are currently running a kernel-resident FDDI driver and want to install the loadable driver, you must remove the kernel-resident driver, then rebuild the kernel. The script will ask you if you want to do this.

Note If you are reinstalling the FDDI driver, you must first deinstall it by running the **./deinstall.fddi** script, then reinstall it using the following procedures. For more information, see the appendix "Running the FDDI deinstall Script."

Copying the SunOS Driver Files

Perform the following tasks to load the new SunOS driver files:

Step 1   Log in to your system as root and change your directory to **/usr/local**.

Step 2   Insert the SunOS driver installation disk into the SPARCstation floppy disk drive.

Step 3   Use the **tar** command to copy files from the installation disk to the hard disk, for example:

```
tar -xvf /dev/rfd0
```

A cfddi subdirectory will be created in /usr/local.

Note   If the system in which you install the SBus adapter does not have a floppy drive, load the installation disk on a system with a floppy drive anywhere on the network. Then use **rcp** to copy the installation files to the target system (as in the following example):

```
rcp -r cfddi console:/usr/local
```

Step 4   Confirm that the cfddi directory contains the following files:

config.fddi	dflash.4.1.x
if_fddi.o.sun4c	deinstall.fddi
if_fddi.o.sun4m	download_flash.README
fddi.INSTALL	install.fddi
fddi.load.sun4c.o	mibs/
fddi.load.sun4m.o	snmpd
fddi_conf.c	snmpd.cfddi
fddistat	ttcp
README	download_flash

Step 5   To remove the disk, enter **eject** at the prompt.

> ⚠ **Caution**   If an error disrupts the installation script, stop the installation immediately by pressing **Ctrl-C**. Review the installation instructions up to this point to make sure that the steps you took were accurate and complete. If you repeat the installation process and continue to see errors, stop the installation and contact the Cisco Systems Technical Assistance Center.

Running the SunOS Install Script

Now you need to invoke the SBus adapter software installation script using the **install.fddi** command.

The script asks various questions about the kind of installation you want to perform, and about your system. Specifically, it asks for the following information:

- If you want to install the SNMP agent

- If you want to install the SBus driver

- If you want to install the loadable driver (answer **no** to install the kernel-resident or linkable driver)

- If you want to continue to use the Ethernet interface

- Number of FDDI interfaces you want to install

- Host name and IP address for each interface

- If you want the driver to be loaded after each reboot

- If you want to use the linkable FDDI driver by rebuilding the kernel

SunOS Loadable Driver Installation

Perform the following tasks to install the SunOS loadable driver:

Step 1   Change the directory to **/usr/local/cfddi**.

Step 2   At the prompt, enter **./install.fddi** to run the install script:

```
console# ./install.fddi

You have invoked the ./install.fddi script, which is used to install
software for FDDI SBus Adapters.
There are two steps to the installation:

        1) Install SNMP agent (optional).
        2) Install FDDI SBus driver.

Is this install for a diskless station (y/n) [n]
```

Step 3   At the prompt, enter **n** if this is a not a diskless station installation.

Note   If this is a diskless station installation, refer to the section "SunOS 4.1.x Diskless Boot Overview" in the chapter "Installing and Deleting Diskless Boot Software."

The following prompt appears:

```
Do you wish to install the SNMP agent (y/n) [y] ?
```

Step 4   When the SNMP agent installation prompt appears, enter **y**. The following information appears:

```
Copying snmpd.cfddi to /etc
Updating /etc/rc.local to start SNMP agent at boot time.

Installation of SNMP agent done.


Do you wish to install the FDDI SBus driver (y/n) [y]
```

Step 5 When the FDDI SBus driver installation prompt appears, enter **y**. The following information appears:

```
You can install the FDDI SBUS driver
as a kernel resident driver or as a loadable driver.
Do you wish to install the loadable driver (y/n) [y] ?
```

Step 6 When the loadable driver prompt appears, enter **y**. The following prompt appears:

```
Will the ethernet interface continue to be used
(y/n) [y] ?
```

Note   If you want to install the linkable, kernel-resident driver, see the section "SunOS Linkable, Kernel-Resident Driver Installation" later in this chapter.

Normally, the Ethernet interface is enabled each time the workstation is booted. If the new CDDI/FDDI interface will be the only network interface on the system, you can stop the Ethernet interface from being enabled at boot time. The installation procedure renames the /etc/hostname.le0 file to /etc/hostname.xx0.

The /etc/rc.boot script still uses the name in this file as the host name for the workstation, but it no longer enables the Ethernet interface.

Step 7 At the Ethernet interface prompt, enter **y** to allow the Ethernet interface to be used. The FDDI interface prompt appears:

```
How many FDDI interfaces are being installed in this machine [1] ?
```

Step 8 Enter the number of FDDI interfaces installed in this workstation.

Note Dual attachment adapters are considered one interface each.

The FDDI interface host name prompt appears:

```
Enter hostname for FDDI interface fddi0 [console-fddi]:
```

Step 9 Enter the new host name of this workstation or use the default name assigned (the existing name with the -fddi modification). The IP address prompt appears:

```
You are using NIS, do you want to get ip address from NIS (y/n) [y] ?

Retrieved ipaddr 172.20.43.146 for host console-fddi
Enter IP address for FDDI interface fddi0 [172.20.43.146]:
```

Step 10 Enter the IP address for this workstation. The FDDI driver loading prompt appears:

```
Do you want the FDDI driver to be loaded after each reboot (y/n) [y] ?
```

Step 11 Most users should enter **y** to have the FDDI driver loaded after every reboot. After some system configuration information is displayed, the kernel rebuild prompt appears:

```
Updating /etc/rc.local to load driver at boot time

Copying fddistat to /etc

Is the FDDI driver kernel resident and
do you want to rebuild the kernel now (y/n) [n]
```

Step 12 At the kernel rebuild prompt, enter **n** because this was a loadable driver installation so the kernel does not need to be rebuilt. The installable configuration screen appears:

```
optimizing tcp_sendspace && tcp_recvspace to 24K

Installation of FDDI SBus driver complete.
You should now halt the system, power down,
and install the FDDI SBus Adapter.

A log of the installation is in ./install.fddi.log

console#
```

Note The following step applies only if you need to tune your driver.

Step 13 If your workstation is a yp server and you want to allow it to receive its own yp broadcasts by binding to itself, you must enable fddimode0 using one of the following commands:

Note Before enabling fddimode0 to allow a workstation to receive its own yp broadcast messages, the total ring latency must exceed the time taken for the broadcast message to return to the broadcast source.

Sun4c architecture command:

```
adb -w fddi.load.sun4c.o
fddimode0?W 1
$q
```

Sun4m architecture command:

```
adb -w fddi.load.sun4m.o
fddimode0?W 1
$q
```

Driver built into kernel command:

```
adb -w /vmunix
fddimode0?W 1
$q
```

Note   The restrictions in the following step are valid for Sun4c workstations with multiple adapters only.

Step 14   Driver buffers take up input output page buffer (IOPB) space that is used to perform direct virtual memory access (DVMA). If the workstation runs out of IOPB space after installation of the SBus adapter driver, decrease the number of nfddimaxtbd and set the **fddimaxcopysz** command to 4500. The following command examples show the variables set for a single Sun4c workstation with multiple adapters installed.

Sun4c architecture linkable kernel command:

```
adb -w fddi.load.sun4c.o
nfddimaxtbd?W 8
fddimaxcopysz?W Ox1194
$q
```

Driver built into kernel command:

```
adb -w /vmunix
nfddimaxtbd?W 8
fddimaxcopysz?W Ox1194
$q
```

Step 15 Power down the system and install the FDDI SBus adapter, or if the adapter is already installed, log out and reboot to cause the system to read the modified rc.local file. Refer to the chapter "Installing the SBus Adapter Hardware."

Caution If your system is running Network Information Service (NIS), you must also update the NIS databases with the host name and IP address. Refer to the Sun manual *System and Network Administration* for instructions on how to update NIS databases. You must have an NIS server on the newly created FDDI subnet.

Files Added or Modified During Installation of the SunOS Loadable Driver

The installation of the loadable FDDI driver removes any existing /etc/hostname.fddi*x* files to prevent the rc.boot script from bringing up the interfaces.

The installation also modifies the following files:

- /etc/rc.local
- /etc/loadable

/etc/rc.local

The installation procedure adds the following text to rc.local to load the loadable driver and bring up the interfaces. This must occur before NIS and other networking daemons are started.

In this example, console-fddi is the name of the fddi interface.

```
# Load loadable modules.
if [ -f /etc/loadable ]; then
    /etc/loadable
fi
ifconfig fddi0 console-fddi netmask + -trailers up
```

/etc/loadable

The installation procedure adds the following text to /etc/loadable. If this file does not exist, the installation creates one.

```
#
# Load the fddi driver.
#
if [ -f /dev/fddi.LOAD ]; then
if [ -f /dev/fddi.AUTOLOAD ]; then
    /dev/fddi.LOAD
fi
fi
```

New files in /dev

The installation procedure creates the following files and links in /dev:

```
/dev/fddi.AUTOLOAD
/dev/fddi.INSTALL -> /usr/local/cfddi/fddi.INSTALL
/dev/fddi.LOAD -> /dev/fddi.INSTALL*
/dev/fddi.MKDEV -> /dev/fddi.INSTALL*
/dev/fddi.RMDEV -> /dev/fddi.INSTALL*
/dev/fddi.UNLOAD -> /dev/fddi.INSTALL*
/dev/fddi.load.sun4c.o -> /usr/local/cfddi/fddi.load.sun4c.o*
/usr/local/cfddi
```

> **Note** Notice that /dev/fddi.INSTALL and /dev/fddi.load.sun4c.o are linked to files in the cfddi installation directory. Make sure that these linked files are not deleted. Also, if the installation directory is on a different file system (that is, other than /usr/local), make sure that the file system is mounted before rc.local executes during the boot process.

SunOS Linkable, Kernel-Resident Driver Installation

The following steps describe how to install the SunOS linkable, kernel-resident driver:

Step 1   Change directory to /usr/local/cfddi.

Step 2   At the prompt, enter **./install.fddi** to run the install script:

```
console# ./install.fddi

You have invoked the ./install.fddi script, which is used to install
software for FDDI SBus Adapters.
There are two steps to the installation:

1) Install SNMP agent (optional).
2) Install FDDI SBus driver.

Is this install for a diskless station (y/n) [n] ? n
```

Step 3   At the prompt, enter **n** if this is a not a diskless station installation.

> **Note**   If this is a diskless station installation, refer to the section "SunOS 4.1.x Diskless Boot Overview" in the chapter "Installing and Deleting Diskless Boot Software."

The following prompt appears:

```
Do you wish to install the SNMP agent (y/n) [y] ?
```

Step 4 When the SNMP installation prompt appears, enter **y** to install the cfddi SNMP agent. The following information appears:

```
Copying snmpd.cfddi to /usr/etc

Installation of SNMP agent done.


Do you wish to install the FDDI SBus driver (y/n) [y] ?
```

Step 5 When the FDDI SBus installation prompt appears, enter **y**. The following information appears:

```
You can install the FDDI SBUS driver
as a kernel resident driver or as a loadable driver.
Do you wish to install the loadable driver (y/n) [y] ?
```

Step 6 When the loadable driver prompt appears, enter **n** to install the kernel-resident driver. The Ethernet interface prompt appears:

```
Will the ethernet interface continue to be used (y/n) [y] ?
```

Note   If you want to install the loadable driver, see the section "SunOS Loadable Driver Installation" earlier in this chapter.

Normally, the Ethernet interface is enabled each time the workstation is booted. If the new CDDI/FDDI interface will be the only network interface on the system, you can stop the Ethernet interface from being enabled at boot time. The installation procedure renames the /etc/hostname.le0 file to /etc/hostname.xx0.

The /etc/rc.boot script still uses the name in this file as the host name for the workstation, but it no longer enables the Ethernet interface.

Step 7 Enter **y** to allow the Ethernet interface to be used. The FDDI interface prompt appears:

```
How many FDDI interfaces are being installed in this machine [1] ?
```

Step 8 Enter the number of FDDI interfaces installed on this workstation. The FDDI interface host name prompt appears:

```
Enter hostname for FDDI interface fddi0 [console-fddi]:
```

Step 9 Enter the new name of this workstation or use the default name assigned (the existing name with the -fddi modification). The IP address prompt appears:

```
Enter IP address for FDDI interfacefddi0 [172.20.43.146]:
```

Step 10 Enter the IP address for this workstation or use the default address. The existing kernel prompt appears:

```
Enter existing kernel configuration file [GENERIC]:
```

Step 11 Enter the name of the kernel being used. A prompt appears asking for a new name for the kernel to be built:

```
Enter new kernel configuration file [FDDI]:
```

Step 12 Enter the new name for the kernel.

Note The existing kernel will not be modified but will be copied and renamed.

The following installation confirmation screen appears:

```
Copying/updating files ...
Copying fddi_conf.c to /usr/kvm/sys/sunif
Copying if_fddi.o to /usr/kvm/sys/sun4c/OBJ
Adding config.fddi to /usr/kvm/sys/sun4c/conf/FDDI
Copying fddistat to /usr/etc

Rebuilding kernel ...

Doing a "make depend"
cc -sparc -c -O -Dsun4c -DGENERIC -DSUN4C_60 -DWINSVJ -DVDDRV
-DASYNCHIO -DLWP -DVFSSTATS -DRFS -DCRYPT -DTCPDEBUG -DIPCSHMEM
-DIPCSEMAPHORE -DIPCMESSAGE -DSYSAUDIT -DSYSACCT -DPCFS...
.
. (data omitted)
.
... -DSUN4C_60 -DWINSVJ -DVDDRV -DASYNCHIO -DLWP -DVFSSTATS -DRFS
-DCRYPT -DTCPDEBUG -DIPCSHMEM -DIPCSEMAPHORE -DIPCMESSAGE -DSYSAUDIT
-DSYSACCT -DPCFS -DHSFS -DTMPFS -DTFS -DLOFS -DNFSSERVER -DNFSCLIENT
-DUFS -DQUOTA -DINET -DKERNEL -I. -I.. -I../.. confvmunix.c
loading vmunix
rearranging symbols
textdatabssdechex
13680642260641217681715896 1a2eb8

Installing kernel ...
Saving old /vmunix file in /vmunix.save
Copying vmunix to /vmunix

Installation of FDDI SBus driver complete.
You should now halt the system, power down,
and install the FDDI SBus Adapter.

A log of the installation is in ./install.fddi.log

console#
```

Step 13 Power down the system and install the FDDI SBus adapter, or if the adapter is already installed, reboot the system and log back in to read the modified kernel file. Refer to the chapter "Installing the SBus Adapter Hardware."

Files Added or Modified During Installation of the SunOS Linkable Driver

The installation of the linkable driver creates /etc/hostname.fddi*x* files so that the rc.boot script brings up each interface when the system boots.

Solaris 2.x Installation

Software running on a Solaris 2.x system is installed in packages using the **pkgadd** command. Refer to the pkgadd(1m), pkgrm(1m), and pkginfo(1m) man pages for more information.

Following is an overview of this section on how to install software packages on your Solaris 2.x system:

- Copying the Solaris 2.x Files on a Local System

- Copying the Solaris 2.x Files From a Remote Workstation

- Copying the Solaris 2.x Files from Diskette to Tape to Workstation

---

Note If you are reinstalling the SBUSfddi driver, you must first deinstall the FDDI driver by running **pkgrm** (see the appendix "Running the FDDI deinstall Script"), and then reinstall it using the following procedures.

Your Solaris driver floppy disk contains the following packages:

- SBUSfddi: FDDI driver

- CSCOmibs: Management Information Base (MIB) definitions for the Workgroup Concentrator and adapter

- SBUSsnmp: SNMP agent for the adapter

Copying the Solaris 2.x Files on a Local System

Perform the following steps to load the new software on to your local SPARCstation or SPARCserver running Solaris 2.x :

Step 1   Log in to your system as root and insert the Solaris driver floppy disk into the disk drive.

Step 2   If your Sun Volume Manager is disabled, enter the following commands (see the note below if your Sun Volume Manager is enabled) :

```
mount -r /dev/diskette /mnt
pkgadd -d /mnt
```

Step 3   Proceed to the section "Installing the Solaris 2.x Driver Using the pkgadd Script."

Note   The normal device name for the floppy device on a Solaris 2.x workstation is /dev/diskette. If you are using the Sun Volume Management, the floppy device name and how to access it have changed. The default name under Volume Management is /floppy/floppy0. In order to access the floppy, you must invoke File Manager and select Check for Floppy. You do not need to physically mount the floppy. See *SunOS 5.x Adding and Maintaining Devices and Drivers* for more information on the new location of the floppy device.

Copying the Solaris 2.x Files From a Remote Workstation

Perform the following steps to load the new software on your local SPARCstation or SPARCserver running Solaris 2.x from a remote workstation:

Note See preceding note.

Step 1 Insert the Solaris driver disk into the disk drive on a remote Sun workstation on your network.

Step 2 If you are running Solaris 2.x on the remote workstation with the disk drive and the workstation is configured as a Network File System (NFS) server, enter the following commands:

```
mount -r /dev/diskette /mnt
share -F nfs /mnt
sh /etc/init.d/nfs.server start
```

Step 3 On the workstation where you are installing the driver, enter the following commands:

```
mount hostname:/mnt /mnt
pkgadd -d /mnt
```

where *hostname* is the host name of the remote workstation with the floppy disk drive and diskette.

Step 4 Proceed to the section "Installing the Solaris 2.x Driver Using the pkgadd Script."

Copying the Solaris 2.x Files from Diskette to Tape to Workstation

You can load the Solaris driver on a SPARCstation or SPARCserver running Solaris 2.x if you cannot mount a remote floppy drive over the NFS network. You need another workstation with a floppy drive and a tape drive to perform the floppy-to-tape duplication.

Transfer the Solaris driver software to media (for example, 4-mm, 8-mm, or QIC cartridge tape) that is compatible with the workstation that requires the SBus driver by performing the following steps:

Step 1 Locate a workstation with a floppy drive and a tape device and insert the Solaris driver diskette.

Step 2 If you are running Solaris 2.x, enter the following command:

```
mount -r /dev/diskette /mnt
```

If you are running SunOS 4.1.x enter the following command:

```
mount -r /dev/fd0 /mnt
```

Step 3 Enter the following command to transfer the files from the diskette to the tape:

```
tar cvf tapedevice /mnt
```

The following steps are performed at the workstation requiring the SBus driver.

Step 4 Create a /usr/local/fddi directory.

Step 5 Change the directory name to `/usr/local/fddi`

Step 6 Copy the files from the tape to the /usr/local/fddi directory:

```
tar xvf tapedevice
```

Step 7 Enter the following command to execute the pkgadd command:

```
pkgadd -d /usr/local/fddi
```

Step 8 Proceed to the following section, "Installing the Solaris 2.x Driver Using the pkgadd Script."

Installing the Solaris 2.x Driver Using the pkgadd Script

This script asks various questions about the kind of installation you want to perform, and about your system. Specifically, it asks for the following information:

- If you want to install the CISCO mibs package

- If you want to install the SBus driver

- If you want to install the SNMP agent

- If you want to continue to use the Ethernet interface

- Number of FDDI interfaces you want to install

- Host name and IP address for each interface

- IP address of the workstation

Perform the following tasks to use the Solaris pkgadd script:

Step 1 Select the method described in one of the preceding sections:

- "Copying the Solaris 2.x Files on a Local System"

- "Copying the Solaris 2.x Files From a Remote Workstation"

- "Copying the Solaris 2.x Files from Diskette to Tape to Workstation"

After information is displayed about the packages that are available, the prompt to select package(s) to process appears:

```
The following packages are available:
  1  CSCOmibs     Solaris 2.X Mibs
                  (sparc) 4.1
  2  SBUSfddi     Solaris 2.X FDDI Driver
                  (sparc) 3.1
  3  SBUSsnmp     Solaris 2.X FDDI SNMP Agent
                  (sparc) 4.1

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

Step 2 Enter the number(s) corresponding to the package(s) you want to install. If you choose the default, the following information appears:

```
Processing package instance <CSCOmibs> from
</sw/release/c300/driver/sun5/3.1/pkgbin>

Solaris 2.X Mibs
(sparc) 4.1
Cisco Systems, Inc.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

Installing Solaris 2.X Mibs as <CSCOmibs>

## Installing part 1 of 1.
/opt/CSCOmibs/INSTALL
/opt/CSCOmibs/README
/opt/CSCOmibs/cisco-adapter.mib <symbolic link>
/opt/CSCOmibs/cisco-stack.mib <symbolic link>
/opt/CSCOmibs/rfc1213.mib
/opt/CSCOmibs/rfc1285.mib
/opt/usr/OV/snmp_mibs/cisco-adapter
/opt/usr/OV/snmp_mibs/cisco-stack
/opt/usr/snm/agents/cisco-adapter.oid
/opt/usr/snm/agents/cisco-adapter.schema
/opt/usr/snm/agents/cisco-stack.oid
/opt/usr/snm/agents/cisco-stack.schema
/opt/usr/snm/agents/rfc1285.oid
/opt/usr/snm/agents/rfc1285.schema
[ verifying class <mibs> ]

Installation of <CSCOmibs> was successful.

Processing package instance <SBUSfddi> from
</sw/release/c300/driver/sun5/3.1/pkgbin>

Solaris 2.X FDDI Driver
(sparc) 3.1
Copyright (c) 1991-1995 Cisco Systems, Inc.
```

```
Using </> as the package base directory.

Is this installation for a diskless station [n] [y,n,?,q]
```

Step 3   Enter **n** for a non-diskless station.

```
Is the FDDI Adapter currently installed in the machine [y] [y,n,?,q]
```

Step 4   When the FDDI adapter prompt appears, enter **y** if the adapter is installed. The
Ethernet interface prompt appears:

```
Will the ethernet interface continue to be used [y] [y,n,?,q]
```

Normally, the Ethernet interface is enabled each time the workstation is booted. If
the new CDDI/FDDI interface will be the only network interface on the system,
you can stop the Ethernet interface from being enabled at boot time. The
installation procedure renames the /etc/hostname.le0 file to /etc/hostname.*xx*0.

The system still uses the name in this file as the host name for the workstation, but
it no longer enables the Ethernet interface.

Step 5   Enter **y** to allow the Ethernet interface to be used. The FDDI interface prompt
appears:

```
How many FDDI interfaces are being installed in this machine [1]
[1-4,?,q]
```

Step 6   Enter the number of SBus adapters installed on this workstation. The IP address
prompt appears:

```
NIS is running, Do you want to get ip addresses from NIS [y] [y,n,?,q]
```

Step 7   Enter **y**. The FDDI interface host name prompt appears:

```
Enter hostname for FDDI interface fddi0 [console-fddi0] [?,q]
```

Step 8   Enter the new host name of this workstation or use the default name assigned (the
existing name with the -fddi modification). The IP address prompt appears:

```
Enter IP address for FDDI interface fddi0 [172.20.43.146] [?,q]
```

Step 9 Use the default IP address for this workstation. The following information appears:

```
## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of this package [y,n,?]
```

Step 10 When the installation confirmation prompt appears, enter **y** if you want to continue with the installation. The following information appears indicating that the installation was successful:

```
Installing Solaris 2.X FDDI Driver as <SBUSfddi>

## Installing part 1 of 1.
/kernel/drv/fddi
[ verifying class <driver> ]
/opt/SBUSfddi/README
/opt/SBUSfddi/dflash.4.1.X
/opt/SBUSfddi/dflash.solaris
/opt/SBUSfddi/download_flash
/opt/SBUSfddi/download_flash.README
/opt/SBUSfddi/fddistat
/opt/SBUSfddi/network_download
/opt/SBUSfddi/ttcp
[ verifying class <tools> ]
## Executing postinstall script.
Running add_drv to add driver to system ...
Creating file //etc/hostname.fddi0 with host console-fddi

If the FDDI Adapter is currently active you must reboot
after this installation in order for the new driver to be loaded.

Activating interface fddi0 with hostname: console-fddi ip address:
172.20.43.146

Installation of <SBUSfddi> was successful.
```

```
Processing package instance <SBUSsnmp> from
</sw/release/c300/driver/sun5/3.1/pkgbin>

Solaris 2.X FDDI SNMP Agent
(sparc) 4.1
Copyright (c) 1991–1995 Cisco Systems, Inc.
Using </> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

Installing Solaris 2.X FDDI SNMP Agent as <SBUSsnmp>

## Installing part 1 of 1.
/etc/init.d/snmpsetup
/etc/snmpd.cfddi
[ verifying class <snmp> ]
/etc/rc2.d/K90snmpsetup <linked pathname>
/etc/rc2.d/S90snmpsetup <linked pathname>

Installation of <SBUSsnmp> was successful.


console#
```

Step 11 Power down the system and install the SBus adapter or, if the adapter is already installed, reboot the system and log back in to read the modified kernel. Refer to the chapter "Installing the SBus Adapter Hardware."

Setting Up Routers for SunOS 4.1.x

When you install an FDDI SBus adapter in a system with an existing Ethernet interface, it automatically becomes a router serving both the FDDI and Ethernet networks. The router is known to the Ethernet network by its Ethernet IP address and host name, and to the FDDI network by its FDDI IP address and host name.

Stations on an internetwork can be reached via multiple routes. When a standard SunOS system is booted, the route daemon (routed) sends out packets over both the Ethernet and the FDDI networks. The route daemon determines the optimal route between stations by relative hop count, not by the speed of the interface. Therefore, in cases where the hop counts are equal, the use of FDDI is not guaranteed. You can guarantee the use of FDDI for network commands by specifying the FDDI host name or IP address of the destination machine.

In Figure 3-1, two commands will each resolve the same physical file on the workstation called Aria.

Figure 3-1   Setting Up a Router
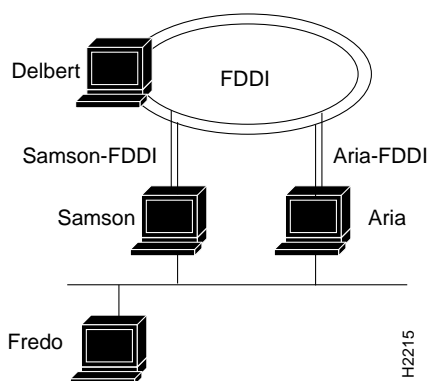
If a user on Fredo mounts files on Delbert, then NFS traffic goes over the Ethernet to either Samson or Aria and from there over an FDDI network to Delbert. However, if a user on Samson mounts files on Aria, the NFS traffic can go over either the FDDI or Ethernet.

The user can specify which interface to use by including Aria's FDDI or Ethernet host name in the **mount** command, as follows:

```
fredo@samson => mount aria:/usr/etc/install
 /usr/etc/install
fredo@samson => mount aria-FDDI:/usr/etc/install
 /usr/etc/install
```

Both these commands mount to the same physical files on Aria. However, the first results in NFS traffic being routed over the Ethernet networks, while the second results in NFS traffic being routed over the FDDI network.