C H A P T E R 7

Installing and Deleting Diskless Boot Software

This chapter provides instructions for installing and deleting SBus adapter diskless boot software. Diskless boot driver software is provided for both SunOS 4.1.x and Solaris 2.x operating systems.

A diskless client is any system that does not have a hard disk and relies on an assigned server for all of its resources. The diskless boot client's file systems, disk storage, and swap space, which are stored on a server, require access to a server to boot.

Before you can begin installation and configuration, you will need the following:

- Your superuser login

- SBus adapter software loaded onto the server

Note For instructions on how to copy the software to the server, see the section "Copying the SunOS Driver Files" in the chapter "Installing the SBus Adapter Software."

- Your host name, IP address, Ethernet address, and client name for each server and client being installed

SunOS 4.1.x Diskless Boot Overview

This section describes how to install and delete diskless boot clients using the SunOS 4.1.x operating system. The section includes the following:

- Installing the SunOS 4.1.x Diskless Boot Server Software:

  — Adding the Client to the Server Databases

  — Installing the Driver on the Server

- Configuring the SunOS 4.1.x Diskless Boot Client

- Solaris 2.x JumpStart Installation Instructions

- Deleting the SunOS 4.1.x Diskless Boot Software

Installing the SunOS 4.1.x Diskless Boot Server Software

This section provides an overview of how to install the SunOS 4.1.x diskless boot software using the **./install.fddi** command and how to add a client using the **add_client** command. Refer to the section "Administering Workstations" in the *Sun System and Network Configuration* manual for detailed installation instructions.

Adding the Client to the Server Databases

To use the **add_client** command to add a client to the server database, refer to the section "Administering Workstations" in the *Sun System and Network Configuration* manual for detailed instructions.

Note   The steps in the following example were performed using a sun4m workstation.

Perform the following tasks to add the client to the server databases:

Step 1   Change directories to /usr/etc/install to use the **add_client** utility.

Step 2   At the server command line, enter the **./add_client -i** command. The -**i** option
invokes full screen interactive mode, as shown in the following example:

```
Server #./add_client -i
```

The following screen appears:

```
Interactive mode uses no command line arguments

CLIENT FORM  [?=help] [DEL= erase one char] [RET=end of input data]

----------------------------------------------------------------
 Architecture type  : [sun4c.sunos.4.1.3] x [sun4m.sunos.4.1.3_u1]
 Client name        : cisco-fddi
 Choice             : x [create]  [delete]   [display]  [edit]
```

```
 Ok to use these values [y/n]
 [x/X=select choice] [space=next
choice] [^B/^P=backward] [^F/^N=forward]
```

Step 3 From the preceding screen, select the following:

- Architecture type: select **sun 4m.sunos.4.1.3_u1**

- Client name: enter **cisco-fddi**, as in this example

- Choice: select **create**

Information similar to the following is added to the screen:

```
CLIENT FORM  [?=help] [DEL= erase one char] [RET=end of input data]


----------------------------------------------------------------
 Architecture type  : [sun4c.sunos.4.1] x [sun4m.sunos.4.1.3_u1]
 Client name        : cisco-fddi
 Choice             : x [create] [delete] [display] [edit]
 Root fs: /export/root (sd3h)      118805504     Hog:   3d3h 118805504
 Swap fs: /export/swap (sd3h)       118805504    Hog:   3d3h 118805504

 Client Information   :
      Internet Address           :  198.133.219.2511
      Ethernet Address           :  8:00:20:19:ef:4
      NIS Type                   :   X [none]  [client]

      Swap size (e.g. 8B, 8K)    :   16M
      Path to Root               :   /export/root/cisco-fddi
      Path to Swap               :   /export/swap/cisco-fddi
      Path to Executable         :   /usr
      Path to Kernel Executable  :   /usr/kvm
      Path to Home               :   /export/home/Boot-server-fddi
      Terminal type              :   sun

   Ok to use these values [y/n] y
    [x/X=select choice][space=next
 choice][^B/^P=backward][^F/^N=forward]
```

Note The Ethernet address displayed should be the address assigned to the workstation, not the Ethernet address assigned to the FDDI/CDDI SBus adapter. Use the **ifconfig -a** command to determine the workstation Ethernet address. You must be a superuser to display the address.

Step 4 Verify that all displayed variables are correct. If all the displayed variables are correct, enter **y**. The following confirmation screen appears:

```
CLIENT FORM      [?=Help]  [DEL= erase one char] [RET=end of input data]


-----------------------------------------------------------------------
 Architecture type  : [sun4c.sunos.4.1] x [sun4m.sunos.4.1.3_u1]
 Client name        : cisco-fddi
 Choice             : x [create] [delete] [display] [edit]

  sun4m.sunos.4.1.3_u1 Clients:

  cisco-fddi



   Are you finished with this form [y/n]
    [x/X=select choice][space=next
choice][^B/^P=backward][^F/^N=forward]
```

Step 5 Enter **y**. The **add_client** utility will add the new client. The following message appears:

```
Updating the server's database
Setting up server file system to support client
Making client's swap file
Setting up client's files system
Copying /export/exec/proto.root.sun4m.sunos.4.1.3_u1 to
/export/root/cisco-fddi
Copying binaries

Updating client's database
Setting up Client's ttytab

You must now ask the system administrator to update the NIS
master's /etc/hosts, /etc/bootparams and /etc/ethers files,
because of the change in the status of the client "cisco-fddi.'
```

Step 6 If the server where you ran the **add_client** utility contains the network information services (NIS) database, verify that the following files were updated:

- /etc/hosts
- /etc/bootparams
- /etc/ethers

If this server does not contain the NIS database, the system administrator must update the following files in the database:

- /etc/hosts—This file must contain the diskless station's IP address and name.
- /etc/ethers—This file must contain the diskless station's Ethernet addresses.
- /etc/bootparams—This file should contain information for each diskless station as in the following example:

```
cisco-fddi root=Boot_server:    /export/root/cisco-fddi\
       swap=Boot_server:/export/swap/cisco-fddi
```

Note In the preceding example, when entering the server's host name, always enter the server's *fddi* host name not the server's Ethernet hostname.

Installing the Driver on the Server

Perform the following tasks to install the SunOS diskless boot driver:

Step 1   At the server, change the directory to /usr/local/diskless/cfddi.

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

```
Boot_server # ./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] y?
```

Step 3   At the prompt, enter **y** to perform the installation for a diskless station. The following prompt appears:

```
/export/root
total 2
drwxr-xr-x  3 root            512 May 12  1994 SUNWxt
drwxr-sr-x 11 root            512 Mar  6 16:28 cisco-fddi

    Input diskless base directory == /export/root/cisco-fddi
```

Step 4   At the prompt, enter the path to the diskless boot files as in the preceding example. The following prompt appears:

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

Step 5   At the prompt, enter **y** to install the SNMP agent on the diskless station. The following information appears:

```
Copying snmpd.cfddi to /export/root/cisco-fddi/etc
Updating /export/root/cisco-fddi/etc/rc.local to start SNMP agent at
boot time.

Installation of SNMP agent done.

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

Step 6   At the prompt, enter the number of FDDI interfaces installed in this workstation. The following prompt appears:

```
Enter hostname for FDDI interface fddi0 [Boot_server]:
```

Step 7   The FDDI interface host name prompt appears. Enter the new host name of this workstation or use the default assigned (the existing name appended with -fddi). The following prompt appears:

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

Step 8   Enter **y** to have the IP address retrieved from the host. The following prompt appears:

```
Retrieved ipaddr 172.20.25.146 for host cisco-fddi
Enter IP address for FDDI interface fddi0 [172.20.25.146]:
```

Step 9   Confirm the IP address retrieved and displayed in default brackets is correct or manually add the correct IP address if needed. The following prompt appears:

```
Enter client architecture (sun4c or sun4m) [ sun4m ] ==>
```

Step 10   Enter the correct client architecture for this system. Enter **sun4m**. The following information and prompt appears:

```
/export/exec/kvm
total 3
drwxr-sr-x  7 root        1024 Sep 14 17:15 sun4c.sunos.4.1.3
lrwxrwxrwx  1 root 20 Sep 14 10:37 sun4m -> sun4m.sunos.4.1.3_U1
lrwxrwxrwx  1 root 8 Sep 14 10:37 sun4m.sunos.4.1.3_U1 -> /usr/kvm

Enter client architecture kernel build path ==>
   /export/exec/kvm/sun4m
```

Step 11   At the prompt, enter the path to the client architecture kernel. In this example, the path is **/export/exec/kvm/sun4m.** The following prompt appears:

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

Step 12   At the prompt, enter the name of the existing kernel configuration file to be copied and modified in the next step. The following prompt appears:

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

Step 13 At the prompt, enter the name you want given to the new kernel configuration file. Information similar to the following appears:

```
Copying/updating files ...
        Copying fddi_conf.c to /usr/kvm/sys/sunif
        Copying if_fddi.o to /usr/kvm/sys/sun4m/OBJ
        Adding config.fddi to /usr/kvm/sys/sun4m/conf/ERIC
      Updating /usr/kvm/sys/sun4m/conf/files to include  FDDI files
        Updating /usr/kvm/sys/netinet/in_proto.c to increase tcp
snd/rcv space
    Updating /usr/kvm/sys/sun4m/conf/ERIC for diskless station
    changing fddi_conf.c file to flag diskless booting
        Copying fddistat to /export/root/cisco-fddi/usr/etc


    Rebuilding diskless kernel ...


Doing a "make depend"

cc -sparc -c -O -Dsun4m -DGENERIC -DSUN4M_35 -DSUN4M_50 -DSUN4M_690 -
.
. data omitted
.
DSYSACCT -DPCFS -DTMPFS -DNFSCLIENT -DINET -DMULTIPROCESSOR -DKERNEL
-I. -I.. -I../.. confvmunix.c
loading vmunix
rearranging symbols
text     data     bss      dec       hex
1368064  456104    208360  2032528   1f0390
        Changing fddi_conf.c back to non-diskless case


    Installing kernel ...
        Saving old /export/root/cisco-fddi/vmunix file in
/export/root/cisco-fddi/vmunix.save
        Copying vmunix to /export/root/cisco-fddi/vmunix


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


Boot_server #
```

When the server console prompt reappears, the SunOS diskless boot driver installation is complete. Continue with the instructions in the following section "Configuring the SunOS 4.1.x Diskless Boot Client" at each diskless boot client.

Configuring the SunOS 4.1.x Diskless Boot Client

Perform the following steps at each diskless boot client to boot from the remote server:

Step 1   At the diskless station command line, enter **boot** *device_path,* where *device_path* is your type of workstation. See Table 7-1 for the proper device path.

Table 7-1   **Diskless Workstation Device Paths**

Workstation Type	Device Path	Notes
Sun4c	/sbus/fddi	
Sun4d	/io-unit@f,e0200000/sbi/fddi	For Solaris only
Sun4m	/iommu/sbus/fddi	

Following is an example of the boot device path for a Sun4c workstation:

```
Diskless # boot /sbus/fddi
```

Note   If multiple adapter cards are installed in the same workstation, you must use the absolute device path. To determine the absolute device path, enter **show-devs** at the diskless workstation command line to display the fddi absolute device path.

The following information appears, displaying the device path:

```
ok show-devs

/FM,MB86904
/virtual-memory@0,0
/memory@0,0
/obio
/iommu@0,10000000
/openprom
.
.
. (information omitted)
.
.
.
/iommu@0,10000000/sbus@0,10001000
/iommu@0,10000000/sbus@0,10001000/cgsix@3,0
/iommu@0,10000000/sbus@0,10001000/fddi@1,400000" 1
/iommu@0,10000000/sbus@0,10001000/fddi@1,400000" 2
.
.
. (information omitted)
.
.
.
ok
```

Step 2 At the ok prompt, enter **setenv boot-device** *device_path* to set the diskless
workstation open boot PROM (OBP) environment path to use the FDDI adapter
as the default boot device. See Table 7-1 for the proper device path or use the
absolute device path, as shown in the preceding example.

Following is an example setting the environment path for a Sun4c workstation:

```
ok setenv boot-device /sbus/fddi
```

Step 3 Use the **printenv** command to show the OBP's current settings; the device path is displayed as in the following example:

```
ok printenv

Parameter                          Value                    Default
Value

type-link-test                     true                     true
.
.
. (information omitted)
.
.
boot-device                        /sbus/fddi               disk net
.
.
. (information omitted)
.
.

ok
```

Step 4 At the next ok prompt, enter **boot** to boot the diskless workstation using the FDDI adapter as the boot device, as in the following example:

```
ok boot
```

Example:

```
2bcoo hostname: cisco-fddi;
domainname: eng.com
root server: Boot_server
root directory: /export/home/root/cisco-fddi
SunOS Release 5.4 Version [UNIX(R) System V Release]
Copyright (c) 1983-1994, Sun Microsystems, Inc.
```

Solaris 2.x JumpStart Installation Instructions

This section describes how to configure the diskless workstation and server to use the Sun Microsystems Custom JumpStart utility to automatically install the Solaris software over the FDDI network. Refer to the Sun Microsystems document *SPARC: Installing Solaris Software* for detailed installation instructions.

Follow the instructions in the Sun document to configure the local server as an installation server and/or as a boot server.

Note Confirm that the server already supports the Cisco FDDI interface.

The following instructions will not affect the kernel running on the server, but will make changes to JumpStart files to allow Solaris installation over the FDDI.

Follow these steps in preparing the installation server to perform the JumpStart function over FDDI.

Step 1 Access the diskette file system from the server. Use a file manager, or mount the Solaris FDDI/CDDI diskette.

Step 2 Copy the SBUSfddi directory and its contents from the diskette to the *install_dir_path*/Solaris_2.4 directory on the server:

```
# cp -r SBUSfddi install_dir_path/Solaris_2.4
```

This creates a directory with all FDDI files and scripts in *install_dir _path*/Solaris_2.4/SBUSfddi.

Note Do not copy the SBUSsnmp directory and CSCOmibs directory from the diskette to the server.

Step 3 Change directories to *install_dir_path*/Solaris_2.4/SBUSfddi/reloc.

Step 4   Change the permission of the neti file. Enter the following:

```
# chmod +x neti
```

Step 5   Enter **./neti** to run the neti script. The following appears:

```
# ./neti

# Are you sure you want to continue with FDDI jumpstart network
installation script [n]
```

Step 6   Enter **y** to continue with the FDDI jumpstart network installation script. The following appears:

```
# Begin network installation
# Enter type of architecture for target installation machine [sun4m]
```

Step 7   At the prompt, enter the type of Sun architecture on the target workstation, either **sun4m, sun4c** or **sun 4d**. Information similar to the following appears:

```
Performing add_drv to jumpstart directory
../../../export/exec/kvm/sparc.sum.Solaris_2.4
removing request entry from pkgmap
changing .package toc
changing .order
Done

#
```

Step 8   Change directories to the *install_dir_path,* and run the **add_an_install_client** utility. Following is an example:

```
./add_install_client -i 188.122.139.45 -e 8:0:20:0d:92:23 -s
install_srv:/ install_dir_path -c install_srv:/var/adm/jumpstart
install_cli sun4m
```

Step 9 Refer to the document *Sun SPARC: Installing Solaris Software*, Chapter 4, "Preparing Custom Jumpstart Installations," for instructions on how to create the JumpStart directory and profile. Confirm that the SBUSfddi package is included in the profile. For example:

```
# Profile Keyworks     profile values
# ---------------      --------------

package                SBUSfddi add
```

Step 10 Create a rules file following the instructions in the section, "Creating the Rules File," in Chapter 4 of the *Sun SPARC: Installing Solaris Software* document.

The server is now configured to use custom JumpStart to automatically install the Solaris software over the FDDI.

Note The installed client FDDI adapter must support diskless boot.

Step 11 At the diskless station command line, enter **boot** *device_path* **-install** where the *device_path* is your type of workstation. See Table 7-2 for the proper device path.

Table 7-2   **Diskless Workstation Device Paths**

Workstation Type	Device Path	Notes
Sun4c	/sbus/fddi	
Sun4d	/io-unit@f,e0200000/sbi/fddi	For Solaris only
Sun4m	/iommu/sbus/fddi	

Following is an example of the boot device path entered for a Sun4d workstation:

```
Diskless # boot /iommu/sbus/fddi -install
```

Step 12 Once the installation is complete, you see the following message:

```
ifconfig: SIOCGIFFLAGS: fddi0: no such interface
```

Step 13 Reboot and clear the problem or use the **ifconfig** command to initiate the interface:

```
ifconfig fddi# plumb
ifconfig fddi# diskless_name up
```

where:

fddi# is the FDDI adapter number, usually fddi0.

plumb opens the device associated with the interface.

diskless_name is the name of the diskless workstation.

Note   At this point you may also specify netmask and broadcast addresses, if applicable.

Note   Other stations may not recognize the client if you issue the **ifconfig** commands and don't reboot the workstation. The ARP table of other stations on the FDDI network must be flushed by deleting the old entry for the client's MAC address using the following command:

arp -d *diskless_name*

The Solaris custom JumpStart feature configuration is complete.

Deleting the SunOS 4.1.x Diskless Boot Software

You can use the **rm_client** command to delete a client from the server database. To do so, refer to the section "Administering Workstations" in the *Sun System and Network Configuration* manual for detailed instructions.

Perform the following tasks to delete the client patch to the server databases:

Step 1 Change directories to /usr/etc/install to use the **rm_client** utility.

Step 2 At the server command line, enter the **./rm_client** *clientname* command, as in the following example where **cisco-fddi** is the client name:

```
Server# ./rm_client cisco-fddi
```

The following screen appears:

```
removing cisco-fddi's /etc/hosts entry...
Remove /etc/hosts entry -> 198.133.219.251     cisco-fddi
 (y/n)?
```

Step 3 Enter **y** to delete the client cisco-fddi /etc/hosts entry from the server database. The following screen appears:

```
removing cisco-fddi's /etc/ethers entry...
Remove /etc/ethers entry -> 8:0:20:19:ef:4     cisco-fddi
 (y/n)?
```

Step 4 Enter **y** to delete the client cisco-fddi /etc/ethers entry from the server database. The following screen appears:

```
removing /tftpboot link C685DBFB...
removing cisco-fddi's bootparams entry...
Remove client's root directory /export/root/cisco-fddi (y/n)?
```

Step 5 Enter **y** to delete the client cisco-fddi /export/root entry from the server database. The following screen appears:

```
removing /export/root/cisco-fddi...
removing /export/swap/cisco-fddi...
removing database entries for cisco-fddi...


You must now ask the system administrator to update the NIS
master's /etc/hosts, /etc/bootparams and /etc/ethers files,
because of the change in status of the client 'cisco-fddi.'


client cisco-fddi removed.
```

Step 6 If the server where you ran the rm_client utility contains the network information services (NIS) database, verify that the following files were updated:

- /etc/hosts
- /etc/bootparams
- /etc/ethers

If this server does not contain the NIS database, the system administrator must update the following files in the database:

- /etc/hosts—This file should not contain the deleted diskless station's IP and Ethernet addresses.
- /etc/ethers—This file should not contain the deleted diskless station's IP and Ethernet addresses.
- /etc/bootparams—This file should be modified to delete the following information for each diskless station deleted, as in the following example:

```
cisco-fddi root=Boot_server:     /export/root/cisco-fddi\
           swap=Boot_server:/export/swap/cisco-fddi
```

Note In the preceding example, the server's host name is always entered as the *fddi* host name, not the Ethernet host name.

Sun Solaris Diskless Boot Overview

This section describes how to install and delete diskless boot clients using the Sun Solaris operating system. The section includes the following:

- Adding a Client Using the Administration Tool
- Installing the Solaris Client Using the pkgadd Script
- Deleting the Solaris Diskless Boot Software

Adding a Client Using the Administration Tool

This section provides an overview on how to install the Sun Solaris diskless boot software using the administration tool, and how to add a client using the **pkg_add** command. Refer to the section "Introducing a Machine to a Network" in the *Solaris 2.3 System Configuration and Installation Guide* for detailed installation instructions.

Using Host Manager

Perform the following steps to modify the administration files using the host manager:

Step 1 Start the administration tool at the boot server by entering **/usr/bin/admintool** at the command line, as in the following example:

```
Boot_server# /usr/bin/admintool
```

The Administration Tool base screen appears.

Step 2 From the Administration Tool screen, select **Host Manager**. The Host Manager: Select Naming Service screen appears.

Step 3 Under Naming Service, select **none**.

Step 4 After selecting **none** at the prompt Use /etc files on host, enter the name of the server where the diskless workstation's /etc configuration files will reside.

Step 5 Select **apply**. The Host Manager base screen appears.

Step 6 From the Host Manager base screen, select **Edit**. The Host Manager Add Host screen appears.

Step 7 Click on the **Client Type** menu button, and select **diskless**.

Step 8 In the host name field, enter a host name for the diskless client workstation.

Step 9 In the IP address field, enter the IP address for the diskless client workstation.

Step 10 In the Ethernet address field, enter the Ethernet address for the diskless client workstation.

Step 11 Select the correct variable for time zone and region, file server, and OS release.

Step 12 Enter the correct root and swap paths, swap size, system core path, and size.

Step 13 Select **add** to update the administration files.

Step 14 After adding all the diskless workstations to the server administration files, quit the administration tool.

Step 15 If the server where you ran the admin_tool utility contains the network information services (NIS) database, verify that the following files were updated:

- /etc/hosts
- /etc/bootparams
- /etc/ethers

If this server does not contain the NIS database, the system administrator must update the following files in the database:

- /etc/hosts—This file must contain the diskless station's IP and Ethernet addresses.
- /etc/ethers—This file must contain the diskless station's IP and Ethernet addresses.
- /etc/bootparams—This file should contain information for each diskless station, as in the following example:

```
cisco-fddi root=Boot_server:    /export/root/cisco-fddi\
            swap=Boot_server:/export/swap/cisco-fddi
```

Note In the preceding example, when entering the server's host name, always enter the server's *fddi* host name, not the server's Ethernet host name.

Continue with the following section "Installing the Solaris Client Using the pkgadd Script" at each diskless boot client.

Installing the Solaris Client Using the pkgadd Script

At the server, use the pkgadd utility to add the SBus fddi diskless boot adapter driver for the client workstation.

Perform the following steps:

Step 1 At the command line, enter the following command to start the pkgadd script:

pkgadd -R /export/root/client name -d /floppy/floppy0

following is an example:

```
client # pkgadd -R /export/root/cisco-fddi -d /floppy/floppy0

The following information 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 At the prompt, select packages **1** and **2**. 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 </floppy/floppy0>



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

```
Using </export/root/cisco-fddi> as the package base directory.

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

Step 3   At the prompt, enter **y** to install a diskless workstation adapter driver. The following appears:

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

Step 4   At the prompt, enter **y** if the adapter is currently installed. The following appears:

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

Step 5   At the prompt, enter **y** to continue to use the Ethernet interface. The following appears:

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

Step 6   At the prompt, enter the number of interfaces installed in this machine. The following appears:

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

Step 7   At the prompt, enter **y** if you want to get the IP address from NIS. The following information will appear:

```
Enter hostname for FDDI interface fddi0 [Diskless-fddi] [?,q]
   cisco-fddi
```

Step 8   At the prompt, enter the new host name for this workstation. The following appears:

```
Enter IP address for FDDI interface fddi0 [198.133.219.99] [?,q]
   198.133.219.99
```

Step 9   At the prompt, enter the IP address for the diskless workstation. The following 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   At the confirmation, enter **y** to continue with the installation. The following information appears:

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


## Installing part 1 of 1.
/export/root/cisco-fddi/kernel/drv/fddi
[ verifying class <driver> ]
/export/root/cisco-fddi/opt/SBUSfddi/README
/export/root/cisco-fddi/opt/SBUSfddi/dflash.4.1.X
/export/root/cisco-fddi/opt/SBUSfddi/dflash.solaris
/export/root/cisco-fddi/opt/SBUSfddi/download_flash
/export/root/cisco-fddi/opt/SBUSfddi/download_flash.README
/export/root/cisco-fddi/opt/SBUSfddi/fddistat
/export/root/cisco-fddi/opt/SBUSfddi/network_download
/export/root/cisco-fddi/opt/SBUSfddi/ttcp
[ verifying class <tools> ]
## Executing postinstall script.
Running add_drv to add driver to system ...
Reboot client to install driver.
Note: major number maximum based on server, not client
Creating file /export/root/cisco-fddi/etc/hostname.fddi0 with host
cisco-fddi
Hostname: cisco-fddi ip address: 198.133.219.99
Diskless station installed successfully


Installation of <SBUSfddi> was successful.
```

```
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 11 When the initial screen reappears, enter **q** to quit the pkgadd utility, and reboot the client workstation.

Step 12 If the server where you ran the pkgadd utility contains the network information services (NIS) database, verify that the following files were updated:

- /etc/hosts

- /etc/bootparams

- /etc/ethers

If this server does not contain the NIS database, the system administrator must update the following files in the database:

- /etc/hosts—This file should not contain the deleted diskless station's IP and Ethernet addresses.

- /etc/ethers—This file should not contain the deleted diskless station's IP and Ethernet addresses.

- /etc/bootparams—This file should be modified to delete the following information for each diskless station deleted, as shown in the following example

```
cisco-fddi root=Boot_server:    /export/root/cisco-fddi\
          swap=Boot_server:/export/swap/cisco-fddi
```

> **Note** In the preceding example, when entering the server's host name always enter the server's *fddi* host name not the server's Ethernet host name.

Deleting the Solaris Diskless Boot Software

See the section "pkgrm Script Example" in the appendix "Running the FDDI deinstall Script" to delete a client from the server database using the command **pkgrm -R /export/root**/*client name*.