



Installing the FC Port Driver for Windows 2000

Version 5-2.22a8

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Installation Overview

The FC Port driver Master Kit, which you download from the Web site, includes a zip file for the driver and a zip file for the driver utilities (elxcfg, HBAnyware and HBA API files). When you install the driver package, you will perform the following steps:

1. Download the driver Master Kit to a temporary directory on your local drive.
2. Extract the contents of the driver Master Kit -- the driver zip file, the utilities zip file and a readme.first.txt file.
3. Extract the contents of the driver zip file and the contents of the utilities zip file to a temporary directory. (You can extract the two zip files to the same directory or to different directories.)
4. If you are updating an earlier version of the driver and networking is enabled through the host bus adapter, disable networking.

Note If you have networking enabled, you must disable networking before updating the FC Port driver. If you do not, unpredictable results may occur.

5. If you are updating an earlier version of the driver, uninstall the utilities package.
6. Install the FC Port driver.
7. If you are updating an earlier version of the driver, reboot the computer.
8. Install the driver utilities.
9. If desired, enable networking using the elxcfg utility.

Caution If you install the driver utilities before installing the FC Port driver and attempt to run HBAnyware, an operating system error may occur (often referred to as a "blue screen"). The computer may freeze and require restarting to make the computer operational.

Driver Information

Prerequisites

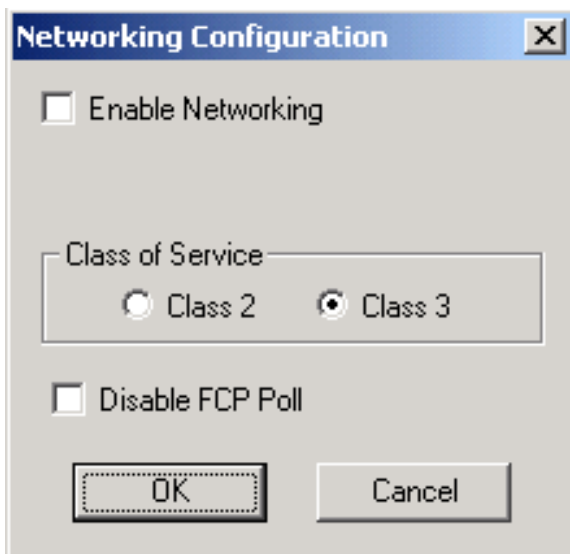
- Windows 2000 (Service Pack 3 or later is highly recommended for all installations)
- Installed compatible HBA

Compatibility

- The Emulex® FC Port driver is compatible with the following Fibre Channel host bus adapters (HBAs):
 - LP10000ExDC and LP1050Ex (minimum firmware version 1.90a4)
 - LP10000DC and LP10000 (minimum firmware version 1.80a2)
 - LP1050 and LP1050DC (minimum firmware version 1.80a3)
 - LP9802DC, LP9802 and LP982 (minimum firmware version 1.00a4)
 - LP9402DC, LP9002L, LP9002DC, LP9000 and LP952L (recommended firmware version 3.90a7)
 - LP8000, LP8000DC and LP850
 - If your HBA has a Dragonfly chip version 2.00 or greater, use firmware version 3.90a7.
 - If your HBA has a Dragonfly chip below version 2.00, use firmware version 3.30a7.
 - LP7000E (minimum firmware revision 3.21a0)
- All BootBIOS versions, however we recommend 1.60 or higher
- Supports arbitrated loop, point-to-point and fabric topologies

Disable Networking

1. Start the elxcfg utility. The Main window is displayed. In the Available Adapters area, click the adapter row that represents the host bus adapter for which you want to disable networking.
2. Select Networking from the Tools menu. The Networking Configuration window is displayed.



3. On the Network Configuration window, clear the Enable Networking check box to clear networking capabilities from the selected adapter.
4. On the Network Configuration window, click OK.
5. On the File menu, click Apply.

Note If a system reboot is required for this change to take effect, you will be prompted to do so when you exit the utility.

Installing the FC Port Driver

Prerequisites

- Downloaded and extracted contents of the driver Master Kit.
- Extracted contents of the driver zip file.
- If you have previously installed the FC Port driver and enabled networking, disable networking before performing this procedure.
- Uninstall the existing utilities package (HBAnyware, lputilnt and the HBA API library).

Procedure

From the desktop:

1. Select Start, Settings, and Control Panel.
2. Double-click the System icon.
3. Select the Hardware tab.
4. Click Device Manager.
5. Open the SCSI and RAID controllers item in the list.
6. Double-click the Emulex host bus adapter (HBA).

Note The driver will affect only the selected HBA. If there are other HBAs in the system, you will need to repeat this process for each HBA. All DC models will be displayed in Device Manager as two HBA, therefore each HBA must be updated.

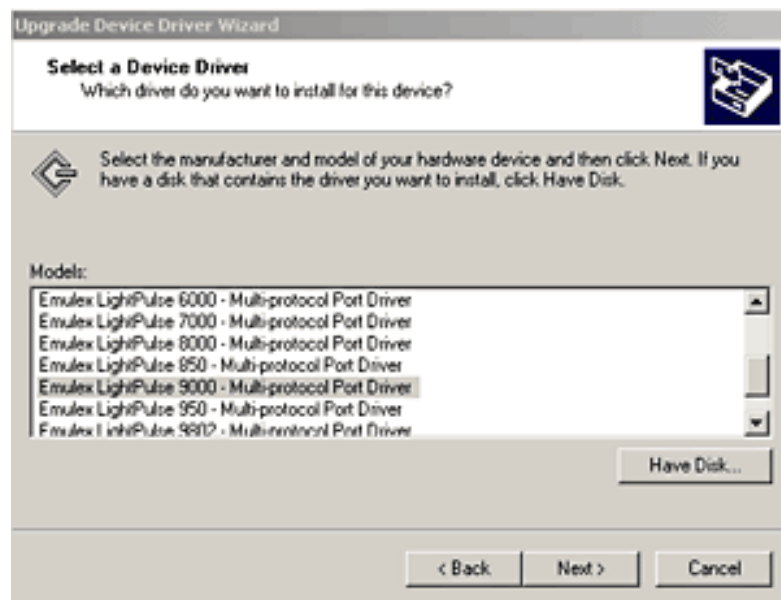
7. Select the Driver tab.
8. Click Update Driver.

The Update Driver wizard starts and walks you through the update process.

9. Click Next.
10. Check "Display a list of the known drivers for this device so that I can choose a specific driver".

A window lists the Emulex drivers. These drivers are the default drivers automatically loaded by Windows Server 2003 or Windows 2000. **Do not select any of the listed drivers.**

11. Click Have Disk.
 - If you have saved the driver files to a temporary directory, type the full path and click OK.
 - If you have saved the driver files to a diskette, the a: path is available by default. Click OK.
12. You are prompted to choose a driver based on the model number of your HBA.



The default topology for the FC Port driver is Arbitrated Loop first, then Point-to-Point with the Automatically Map SCSI Devices driver parameter enabled.

Note For information on changing topology, see the online Configuration manual

Click Next. Several standard warnings may appear. Select Yes to continue the installation in each case and finish the Update Driver wizard.

13. Click Close.

Repeat the installation process from step 6 for each adapter.

14. If you are updating an earlier version of the driver, or if you are prompted to do so, reboot the computer.
15. Install the driver utilities.
16. If desired, enable networking.

Installing the Driver Utilities

The utility installation installs elxcfg, HBAnyware and the HBA API files.

Prerequisites

- One of these versions of the Windows Server 2003, Windows 2000 or Windows NT driver installed:
 - FC Port driver version 6-2.20a12 or later (for 64-bit Windows Server 2003)
 - FC Port driver version 5-2.20a12 or later (for 32-bit Windows Server 2003 or Windows 2000)
 - FC Port driver version 4-2.20a12 or later (for Windows NT)
- Extracted setupapps.exe from the utilities zip file (to a temporary directory).
- Removed versions of older utilities. If you have a previous version of the FC Port driver for Windows 2000 (version 5-2.13a4 or earlier) or Windows NT (version 4-2.13a4 or earlier) installed, the elxcfg configuration tool is still present in the \WINNT\system32 directory. Delete this file and any shortcut icon on your desktop or in your Start\Programs associated with this elxcfg file.

Procedure

Follow these steps to install the utility:

1. Run setupapps.exe from the temporary directory to launch the Welcome dialog box.
2. Follow the instructions on the setup windows.

Note If your system does not have Windows Installer, the setupapps.exe file will install it for you.

3. Click Finish in the last dialog box to exit Setup. Your utility installation is complete. The HBAnyware agent automatically starts running, and will automatically restart if the server is rebooted.

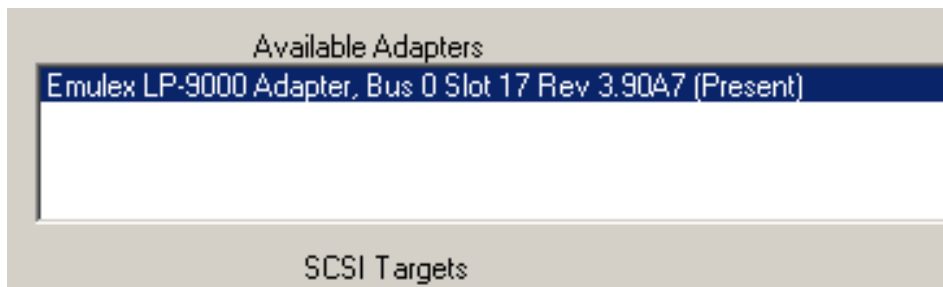
Enabling Networking (Windows Server 2003 and Windows 2000)

Prerequisites

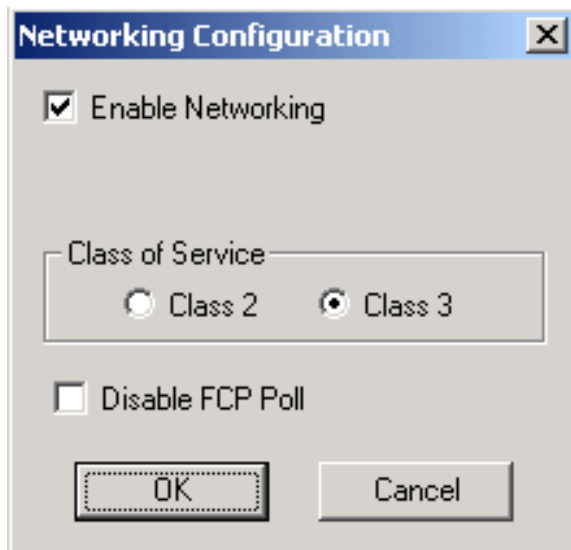
- Installed FC Port driver
- Installed driver utilities

Procedure

1. Start the elxcfg utility. The Main window is displayed.
2. Select an adapter from the Available Adapters list.



3. From the Tools menu, select Networking. The Networking Configuration window is displayed.



4. Select Enable Networking to enable networking on the selected adapter.

5. Select Class 2 or Class 3.

- Class 2 is a connectionless class of service with confirmation of delivery, or notification of non-deliverability of frames.
- Class 3 is a connectionless class of service with no confirmation of delivery or notification of non-deliverability of frames. If a frame cannot be delivered or processed, it is discarded without notification.

Attribute	Class 2	Class 3
Connection-oriented?	No	No
Bandwidth Reserved?	No	No
Guaranteed Latency?	No	No
Guaranteed Delivery Order?	No	No
Confirmation of Delivery (ACK)?	Yes	No
Frame Multiplexing?	Yes	Yes
End-to-End Flow Control?	Yes	No
Link-Level Flow Control?	Yes	No

6. Select Disable FCP Polling only if SCSI functionality is not required on the selected adapter. Clearing this option keeps the selected adapter from looking for SCSI-3 (FCP) devices.

7. Click OK.

8. On the File menu, click Apply.

The system finds new hardware and may issue the standard Windows warnings.

9. Close the Emulex Configuration Utility, elxcfg.

10. Scan for new devices. Right-click My Computer and select Manage. The Computer Management window is displayed.

11. Select Device Manager.

12. Right-click Network Adapter.

13. Select "Scan for New Hardware Changes" from the Action menu. The Found New Hardware Wizard is displayed.

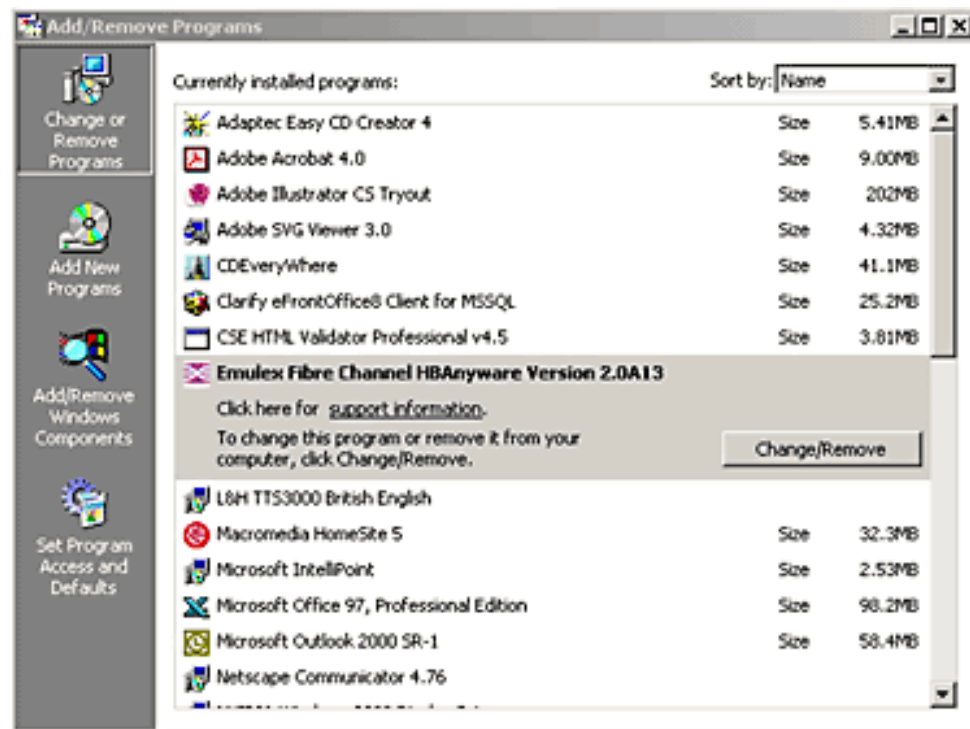
14. Click Have Disk and select the appropriate driver option.
15. Configure the driver for IP:
 - a. Right-click My Network Places and select Properties. The Networking and Dial-up Connections window is opened.
 - b. Select Local Area Network and right-click Properties.
 - c. Select Internet Protocol and click Properties.
 - d. Enter IP address information and click OK.
16. Your adapter is now enabled for networking.

Note If you change the IP class of service after the initial installation, a reboot is required for this change to take effect.

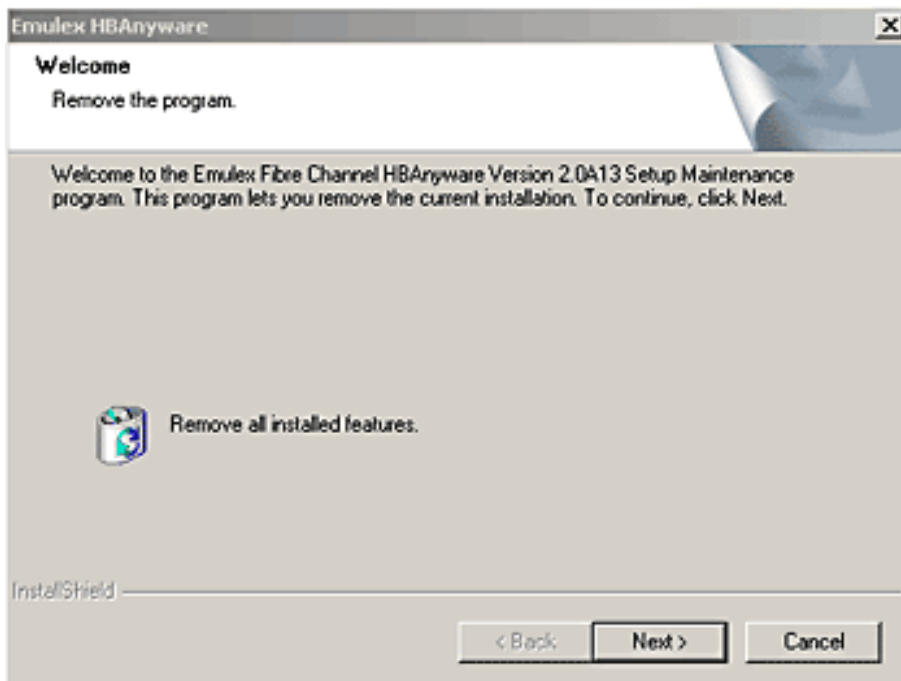
Uninstall the Utility Package

To uninstall the HBAware utility package:

1. Click Start, then Settings, and then Control Panel.
2. Double-click Add/Remove Programs. A window similar to the following will be displayed.



3. Select the Emulex Fibre Channel item and click Change or Remove Programs. A window similar to the following will be displayed.



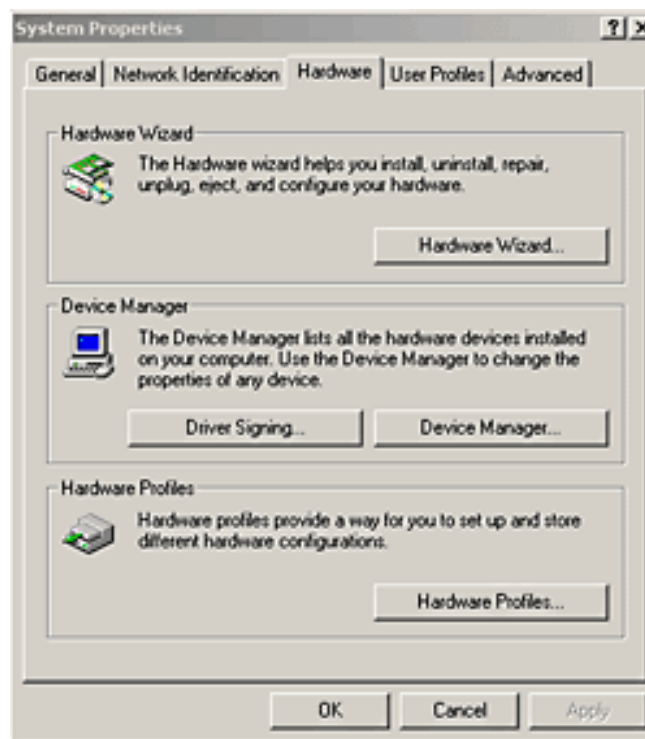
4. Click Next. The utilities are removed from the system.

Uninstall the Driver

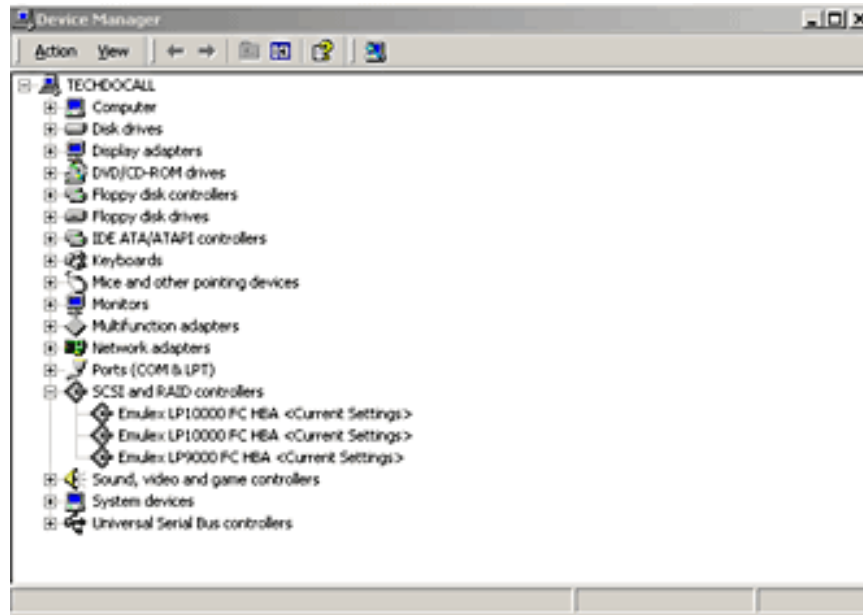
Before you can uninstall the driver, you must first uninstall the utilities package (HBAnyware, lputilnt, and the HBA API library).

To uninstall the driver, do the following:

1. From the Windows desktop, click Start, then Settings, and then Control Panel.
2. Double-click the System item. The System Properties dialog box is displayed. Click the Hardware tab.



3. Click Device Manager. The Device Manager dialog box is displayed. Double-click the SCSI and RAID controllers item.



4. Double-click the adapter from which you want to remove the driver. A device-specific dialog box is displayed. Click the Driver tab.



5. Click Uninstall.
6. When prompted, click OK to continue.
7. When prompted, click Yes to reboot the computer. The driver is uninstalled.

Verifying the Dragonfly Chip Version

There are three methods for determining the Dragonfly chip version: Looking at the Host Bus Adapter, running the DOS utility, or running the UNIX-based utility.

Looking at the Host Bus Adapter

The Dragonfly version number can be found on the top of the large chip, usually after the term "DRAGONFLY" or "DFLY".

Running the DOS Utility

1. Boot up the computer in DOS.
2. Enter this command to start the lp6dutil program.

```
c:\>lp6dutil
```

The lp6dutil program runs preliminary tests on all host adapters.

3. Press the Return or Enter key until the main menu is displayed. The lp6dutil utility resets all host adapters and resource information for all host bus adapters is displayed.

Note Press 0 to go back to the previous screen.

```
1 - Test Host Adapters
2 - Modify Test Options
3 - Restart Host Adapters
4 - Input/Output
5 - Maintenance
6 - Show Host Adapters Info
7 - Quit
```

4. Select 6, Show Host Adapter Info.

The Option menu is displayed.

1 - BIU PCI Configuration Parameters	5 - Service Parameters
2 - Host Adapter Info and Status	6 - Status/Counters Info
3 - Adapter Revision Levels	7 - Link Status
4 - Display Configuration Data	8 - Link Attention

5. Select 3, Adapter Revision Levels . If there are multiple host adapters, specify a list of numbers from 1 – 3 separated by spaces, or use a '-' between two numbers to specify a range of host adapters. The following type of information is displayed for the host bus adapter (this is an example only).

```
Chipset Revision Levels:
DragonFly Revision = 0x1002106D

Firmware Revision Levels:
Current Operational Firmware = Initial Operational Firmware
Kernel Revision = 1.00
Initial Operational Firmware Revision = Initial Load 1.01a0
(QS1.01A0 )
SLI-1 Revision = SLI-1 Overlay 1.01a0 (Q1F1.01A0 )
SLI-2 Revision = SLI-2 Overlay 1.01a0 (Q2F1.01A0 )
```



Version 1 shows a chipset revision that contains 210 near the end of the adapter's hex number (DragonFly Revision number).

Version 2 shows a chipset revision that contains 250 near the end of the adapter's hex number.

Using the UNIX-based Utility

1. Enter the appropriate command to start the lputil utility:

```
For AIX enter:    /usr/lpp/diagnostics/lputil
For HP-UX enter: /opt/lpfc/bin/lputil
For Linux enter:  /usr/sbin/lpfc/lputil
For Solaris PCI bus enter: /usr/sbin/lpfc/lputil
```

The main menu is displayed.

```
LightPulse Common Utility version 1.1 (3/17/99)
Copyright (c) 1999, Emulex Network Systems, Inc.

Emulex Fibre Channel Host Adapters Detected: 1
Host Adapter 0 is an LP7K (Ready Mode)

MAIN MENU

1. List Adapters
2. Adapter Information
3. Firmware Maintenance
4. Reset Adapter

0. Exit

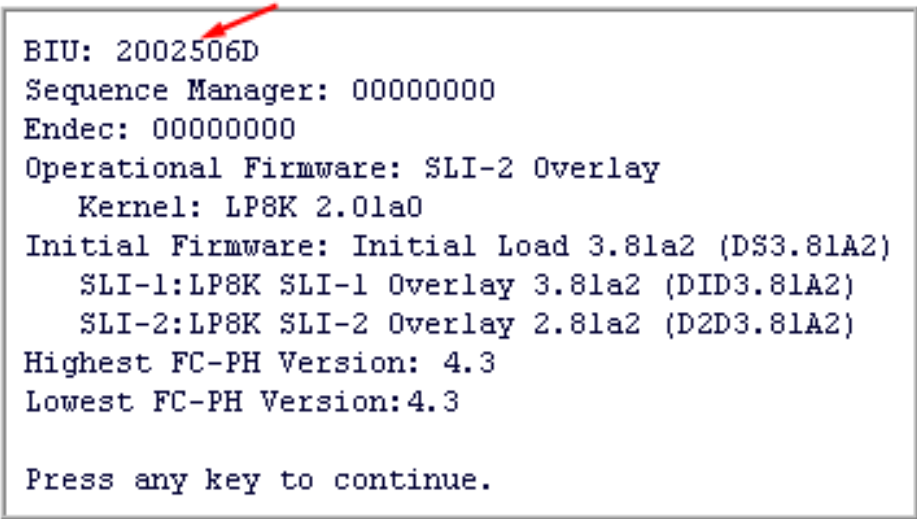
Enter Choice =>
```

2. Select 2, Adapter Information. The Adapter Information Menu is displayed.

```
1. BIU PCI Configuration Parameters
2. Adapter Revision Levels
3. Wakeup Parameters
4. IEEE Address
5. Loop Map
6. Status & Counters
7. Link Status
8. Configuration Parameters

0. Return to Main Menu.
```

3. Select 2, Adapter Revision Levels. If there are multiple host adapters, a list is displayed and you need to select an adapter. The following type of information is displayed for the host bus adapter (this is an example only).



```
BIU: 2002506D
Sequence Manager: 00000000
Endec: 00000000
Operational Firmware: SLI-2 Overlay
      Kernel: LP8K 2.01a0
Initial Firmware: Initial Load 3.81a2 (DS3.81A2)
      SLI-1:LP8K SLI-1 Overlay 3.81a2 (DID3.81A2)
      SLI-2:LP8K SLI-2 Overlay 2.81a2 (D2D3.81A2)
Highest FC-PH Version: 4.3
Lowest FC-PH Version:4.3

Press any key to continue.
```

Version 1 shows a chipset revision that contains 210 near the end of the BIU number.

Version 2 shows a chipset revision that contains 250 near the end of the BIU number.