

Fibre Channel PCI Adapter

**Software Installation Guide**





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**Note**

Before using this information and the product it supports, be sure to read the general information under Appendix A, "Notices" on page 25.

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## Chapter 1. Introduction

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After successfully installing your IBM® Netfinity® Fibre Channel PCI Adapter, you are ready to install the device drivers you need for the adapter to communicate between your computer and your peripheral devices.

### Before you begin

- Locate and make backup copies of the following driver diskettes included with the Fibre Channel PCI Adapter.
  - *Netfinity Fibre Channel for SCO UnixWare*
  - *Netfinity Fibre Channel for Windows NT and NetWare* (referred to as the *DOS Device Drivers* diskette in this guide)
- Read through this guide to determine which drivers you want to install.

If you have DOS device drivers, Windows NT, or NetWare already installed on your system, you can check the driver versions by performing the following procedure:

1. Place the DOS Device Drivers diskette in the diskette drive.
2. Copy the QLVER.EXE file from the diskette into the directory with the QLogic device drivers. For example:

```
COPY A:\QLVER.EXE C:\QLC\QLVER.EXE
```

3. Change directories to the subdirectory containing the QLogic drivers. For example:

```
CD \QLC
```

4. At the prompt type:

```
QLVER *.*
```

A QLogic banner is displayed, followed by the drivers and their corresponding version numbers. For more information about QLVER.EXE, use the following /h (help) parameter:

QLVER /h

*Note:* The latest versions of the device drivers and documentation are available on the following IBM Web site:

<http://www.pc.ibm.com/support>

Device drivers for the following supported operating systems are provided with your Fibre Channel PCI Adapter:

- Santa Cruz Operations (SCO) UnixWare Version 7.0
- Windows NT Version 4.0
- Novell NetWare Version 4.1X



## Chapter 2. Installing the SCO UnixWare Device Driver

---

This chapter provides instructions for installing the SCO UnixWare device driver (QLC2100F) under the following operating system conditions:

- Initial installation of SCO UnixWare and the QLC2100F driver
- Installation of the QLC2100F driver in an already installed SCO UNIX system

If SCO UnixWare is not installed on your system, perform the installation procedures in “Installing SCO UnixWare and the QLC2100F Device Driver.”

If SCO UnixWare is already installed, perform the installation procedures in “Installing the QLC2100F Device Driver” on page 4. The QLC2100F driver package on the QLogic SCO UnixWare 7.0 host bus adapter (HBA) driver diskette is provided for installation of the QLC2100F driver.

*Note:* This diskette cannot be read from a DOS environment.

The installation of host adapters and devices is covered in the SCO UnixWare documentation. See the following topics for more information:

- Using boot-time loadable drivers (*Installation Guide*)
- Adding hard disks and CD-ROM drives (*System Administrator's Guide*)

### Installing SCO UnixWare and the QLC2100F Device Driver

Perform the following steps to install SCO UnixWare and the QLC2100F device driver:

1. Follow the installation instructions that come with the SCO UnixWare 7.0 installation diskette. During the installation, you will be prompted to install the driver for the adapter.

When installing SCO UnixWare 7.0, the following choices appear (the asterisk is the system default):

- ( ) Install HBA diskette
- (\*) Proceed with installation

2. Remove the *SCO UnixWare* installation diskette and insert the *Netfinity Fibre Channel SCO UnixWare HBA* driver diskette.
  - a. Press **Enter**; then select **Install HBA diskette**.
  - b. Press **F10** to continue; the QLC2100F driver is automatically installed.
3. At the end of the installation, you are prompted with the following (the asterisk is the system default):
  - ( ) Install HBA diskette
  - (\*) Proceed with installationRemove the Netfinity Fibre Channel SCO UnixWare HBA driver diskette and press **F10**.

## Installing the QLC2100F Device Driver

Perform the following steps to install the QLC2100F driver in a previously installed SCO UnixWare 7.0 system.

1. Make sure you have root privileges.
2. Enter the following text at the prompt to run the PKGADD program:

```
pkgadd -d diskette1
```

The following prompt appears:

```
Insert diskette into Floppy Drive 1.  
Type (go) when ready,  
or (q) to quit: (default: go)
```

3. Insert the *Netfinity Fibre Channel SCO UnixWare HBA driver* diskette for UnixWare 7 into your diskette drive and press **Enter** (*go*). You will see the following screen:

Installation in progress. Do not remove the diskette.

The following packages are available:

```
1   QLC1020           QLogic QLA1040/1041 IHV HBA
                        (i386) 1.16
2   QLC1240           QLogic QLA1240/1240D IHV HBA
                        (i386) 1.0
3   QLC2100           QLogic QLA2100/2100F IHV HBA
                        (i386) 1.06
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) (?,??,quit):

4. When prompted to select a driver package, type **3** and press **Enter** to install the QLC2100F driver.

When the driver is installed, the following prompt appears:

Installation of QLogic QLA2100/2100F IHV HBA (QLC2100) was successful.

Insert diskette into Floppy Drive 1.

Type (go) when ready,  
or (q) to quit: (default: go)

5. Type **q** and press **Enter** to exit the installation program.
6. Remove the *Netfinity Fibre Channel SCO UnixWare HBA driver* diskette for UnixWare 7 driver diskette.
7. Restart the system to load the driver.



## Chapter 3. Installing the Windows NT Device Driver

---

This section provides instructions for installing the Windows NT device driver under the following operating system conditions:

- Initial installation of the Windows NT operating system and the Windows NT device driver
- Installation of the Windows NT driver in an already installed Windows NT operating system
- Installing an updated Windows NT device driver in an already installed Windows NT operating system that has an older version of the driver

The following files on the Netfinity Fibre Channel DOS Device Drivers diskette are provided for installation of the Windows NT driver:

- TXTSETUP.OEM - driver installation script for initial Windows NT text setup
- QLOGIC - identification file for Windows NT setup program
- \NT\OEMSETUP.INF - driver installation script for the Windows NT setup program
- \NT\QL2100.SYS - Windows NT 4.0 driver
- \NT\README.TXT - helpful hints about the Windows NT driver

Be sure to review the README.TXT file for both new and changed information.

To install Windows NT 4.0 on your system, perform the installation procedures in “Installing Windows NT and the Windows NT Driver” on page 8.

If Windows NT 4.0 is already loaded on your system, perform the installation procedures in “Installing the Windows NT Driver” on page 8.

If Windows NT 4.0 and an older Windows NT driver are already installed on your system, perform the update procedures in “Updating the Windows NT Driver” on page 8.

## Installing Windows NT and the Windows NT Driver

Perform the following steps to install Windows NT 4.0 on the Fibre Channel drive attached to the QLA2100F adapter.

1. Start the Windows NT installation procedure using the Windows NT setup diskettes.
2. After the standard devices have been detected and configured, use the **S** option to **Specify Additional Device**.
3. Select **Other**; then, press **Enter**.
4. Insert the Netfinity Fibre Channel DOS Device Drivers diskette, then press **Enter**.
5. Select **QLogic QLA2100**; then, press **Enter**.
6. Continue with the standard installation procedure.

## Installing the Windows NT Driver

Perform the following steps to add the Windows NT driver to a previously installed Windows NT 4.0 system.

1. Select **My Computer** from the desktop.
2. Select **Control Panel**.
3. Select **SCSI Adapters**.
4. Select the **Drivers** tab and click **Add**.
5. Select **QLogic** from the list of manufacturers and **QLogic QLA2100 64-bit Fibre Channel Adapter** from the list of supported adapters. Click **OK**.
6. Follow the instructions on the screen and the standard procedures from your Windows NT source media to install the driver.

## Updating the Windows NT Driver

Perform the following steps if a Windows NT driver is already installed and you want to install an updated version of the driver.

1. Open a DOS command prompt window.
2. Change the current directory to the Windows NT driver directory, for example:  
`CD \WINNT\SYSTEM32\DRIVERS`
3. Make a backup copy of the old driver. You can copy the file into the same directory with a .SAV extension indicating that it is the saved file, for example:  
`COPY QL2100.SYS QL2100.SAV`
4. Insert the Netfinity Fibre Channel DOS Device Drivers diskette into your diskette drive.
5. Copy the new driver over the old driver, for example:  
`COPY A:\NT\QL2100.SYS`
6. Remove the Netfinity Fibre Channel DOS Device Drivers diskette.
7. Restart your system to load the driver.





## Chapter 4. Installing the NetWare Device Driver

---

This section provides instructions for installing the NetWare device driver in an already installed Novell NetWare system.

### NetWare Driver Files and Parameters

The following files on the Netfinity Fibre Channel DOS Device Drivers diskette are provided for installation of the NetWare 4.1X driver:

- NETWARE\QL2100.HAM - driver for NetWare 4.1X
- NETWARE\README.TXT - helpful hints about the driver and setting options for NetWare 4.1X

Be sure to review the README.TXT file for both new and changed information.

To customize the interface between the driver and Novell NetWare, load the QL2100.HAM driver with the following parameters.

Parameter	Description
SLOT	Provides support for multiple QL2100F adapters and loads the driver for each adapter individually. This switch is mandatory if you have more than one adapter.
/LUN	Enables support for multiple LUN (logical unit number) devices. This switch is optional.

### Installing the NetWare 4.1X Driver

The QL2100.HAM driver may not be compatible with NetWare versions earlier than 4.1X.

*Note:* The LOAD command lines can be entered in your NetWare STARTUP.NCF file to load the driver automatically when your system starts.

Perform the following steps to install the NetWare 4.1X driver in a previously installed NetWare system.

1. Place the Netfinity Fibre Channel DOS Device Drivers diskette in the diskette drive.

2. Copy the QL2100.HAM driver file from the diskette to the server root directory;

```
COPY A:\NETWARE\QL2100.HAM C:\NWSERVER\
```

3. Load the driver at the NetWare server prompt (:) by typing the LOAD command with the SLOT parameter.

The following LOAD example works for a default (factory setting) QL2100/2100F adapter.

```
LOAD QL2100.HAM SLOT=X
```

Replace the *X* in the load line example with the slot identification number of the slot in which the board is installed.

4. If you are attaching multiple LUN devices, such as tape changers, add the /LUN switch to the LOAD line, for example:

```
LOAD QL2100.HAM SLOT=X /LUN
```

## Chapter 5. Getting Help, Service, and Information

---

If you need help, service, technical assistance, or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you.

For example, IBM maintains pages on the World Wide Web where you can get information about IBM products and services, find the latest technical information, and download device drivers and updates. Some of these pages are:

<a href="http://www.ibm.com">http://www.ibm.com</a>	Main IBM home page
<a href="http://www.pc.ibm.com">http://www.pc.ibm.com</a>	IBM Personal Computing
<a href="http://www.pc.ibm.com/support">http://www.pc.ibm.com/support</a>	IBM Personal Computing Support
<a href="http://www.pc.ibm.com/us/desktop/">http://www.pc.ibm.com/us/desktop/</a>	IBM Commercial Desktop (U.S.)
<a href="http://www.pc.ibm.com/us/intellistation/">http://www.pc.ibm.com/us/intellistation/</a>	IBM IntelliStation (U.S.)
<a href="http://www.pc.ibm.com/us/netfinity/">http://www.pc.ibm.com/us/netfinity/</a>	IBM Netfinity and PC Servers (U.S.)
<a href="http://www.pc.ibm.com/us/options/">http://www.pc.ibm.com/us/options/</a>	IBM Options (U.S.)

You can select a country-specific Web site from these pages.

Help is also available from bulletin boards and online services, as well as by fax and telephone. This section provides information about these sources.

Services available and telephone numbers listed are subject to change without notice.

### Service Support

With the original purchase of an IBM hardware product, you have access to extensive support coverage. During the IBM hardware product warranty period, you may call the IBM Personal Computer HelpCenter (1-800-772-2227 in the U.S.) for hardware product assistance covered under the terms of the IBM Statement of Limited

Warranty. See “Getting Help by Telephone” on page 18 for HelpCenter telephone numbers in other countries.

The following services are available during the warranty period:

- Problem Determination - Trained personnel are available to assist you with determining if you have a hardware problem and deciding what action is necessary to fix the problem.
- IBM Hardware Repair - If the problem is determined to be caused by IBM hardware under warranty, trained service personnel are available to provide the applicable level of service.
- Engineering Change Management - Occasionally, there might be changes that are required after a product has been sold. IBM or your reseller, if authorized by IBM, will make Engineering Changes (ECs) available that apply to your hardware.

Be sure to retain your proof of purchase to obtain warranty service.

Please have the following information ready when you call:

- Machine Type and Model
- Serial numbers of your IBM hardware products
- Description of the problem
- Exact wording of any error messages
- Hardware and software configuration information

If possible, be at your computer when you call.

The following items are not covered:

- Replacement or use of non-IBM parts or nonwarranted IBM parts  
*Note:* All warranted parts contain a 7-character identification in the format IBM FRU XXXXXXX.
- Identification of software problem sources
- Configuration of BIOS as part of an installation or upgrade
- Changes, modifications, or upgrades to device drivers
- Installation and maintenance of network operating systems (NOS)
- Installation and maintenance of application programs

Refer to the IBM Statement of Limited Warranty for a full explanation of IBM's warranty terms.

## **Before You Call for Service**

Many computer problems can be solved without outside assistance, by using the online help or by looking in the online or printed documentation that comes with your computer or software. Also, be sure to read the information in any README files that come with your software.

Most computers, operating systems, and application programs come with documentation that contains troubleshooting procedures and explanations of error messages. The documentation that comes with your computer also contains information about the diagnostic tests you can perform.

If you receive a POST error code when you turn on your computer, refer to the POST error-message charts in your hardware documentation. If you do not receive a POST error code, but suspect a hardware problem, refer to the troubleshooting information in your hardware documentation or run the diagnostic tests.

If you suspect a software problem, consult the documentation (including README files) for the operating system or application program.

## **Getting Customer Support and Service**

Purchasing an IBM PC hardware product entitles you to standard help and support during the warranty period. If you need additional support and services, a wide variety of extended services are available for purchase that address almost any need.

## **Using Electronic Support Services**

If you have a modem, you can get help from several popular services. Bulletin boards and online information services provide assistance through question-and-answer message areas, live chat rooms, searchable databases, and more.

Technical information is available on a wide range of topics, such as:

- Hardware setup and configuration
- Preinstalled software
- OS/2, DOS, and Windows
- Networking
- Communications
- Multimedia

In addition, the latest device driver updates are available.

The IBM Bulletin Board System (BBS) can be reached 24 hours a day, 7 days a week. Modem speeds of up to 14 400 baud are supported. Long distance telephone charges might apply. To access the IBM BBS:

- In the U.S., call 1-919-517-0001.
- In Canada:
  - In Montreal, call 514-938-3022.
  - In Toronto, call 905-316-4255 or 416-956-7877.
  - In Vancouver, call 604-664-6464.
- In the U.K., call 01256 336655.

Commercial online services that contain information about IBM products include:

- CompuServe  
Use the following GO words: APTIVA, IBMPS2, ThinkPad, PowerPC, ValuePoint, IBMSVR, or IBMObI.
- PRODIGY  
Use the Jump command; type **IBM** and select **PC Product Support**.
- America Online  
Use the “Go to” keyword **IBM Connect**.

## Using the World Wide Web

On the World Wide Web, the IBM Personal Computing Web site has up-to-date information about IBM Personal Computer products and

support. The address for the IBM Personal Computing home page is:

<http://www.pc.ibm.com>

You can find support information for your IBM products, including supported options, on the IBM Personal Computing Support page at:

<http://www.pc.ibm.com/support>

If you select Profile from the support page, you can create a customized support page that is specific to your hardware, complete with Frequently Asked Questions, Parts Information, Technical Hints and Tips, and Downloadable Files. You will have the information you need, all in one place. In addition, you can choose to receive e-mail notifications whenever new information becomes available about your registered products. You also can access online support forums, which are community sites monitored by IBM support staff.

For information about specific Personal Computer products, visit the following pages:

<http://www.pc.ibm.com/us/intellistation/>

<http://www.pc.ibm.com/us/desktop/>

<http://www.pc.ibm.com/us/netfinity/>

<http://www.pc.ibm.com/us/thinkpad/>

<http://www.pc.ibm.com/us/options/>

<http://www.pc.ibm.com/us/aptiva/>

You can select a country-specific Web site from these pages.

## Getting Information by Fax

If you have a touch-tone telephone and access to a fax machine, in the U.S. and Canada you can receive by fax marketing and technical information on many topics, including hardware, operating systems,

and local area networks (LANs). You can call the IBM Automated Fax System 24 hours a day, 7 days a week. Follow the recorded instructions, and the requested information will be sent to your fax machine.

To access the IBM Automated Fax System, do the following:

- In the U.S., call 1-800-426-3395.
- In Canada, call 1-800-465-3299.

## Getting Help Online

Online Housecall is a remote communication tool that allows an IBM technical-support representative to access your PC by modem. Many problems can be remotely diagnosed and corrected quickly and easily. In addition to a modem, a remote-access application program is required. This service is not available for servers. There might be a charge for this service, depending on the request.

For more information about configuring your PC for Online Housecall:

- In the U.S., call 1-800-772-2227.
- In Canada, call 1-800-565-3344.
- In all other countries, contact your IBM reseller or IBM marketing representative.

## Getting Help by Telephone

During the warranty period, you can get help and information by telephone through the IBM PC HelpCenter. Expert technical-support representatives are available to assist you with questions you might have on the following:

- Setting up your computer and IBM monitor
- Installing and setting up IBM options purchased from IBM or an IBM reseller
- 30-day, preinstalled-operating-system support
- Arranging for service (on-site or carry-in)
- Arranging for overnight shipment of customer-replaceable parts



In addition, if you purchased an IBM PC Server or IBM Netfinity Server, you are eligible for IBM Start Up Support for 90 days after installation. This service provides assistance for:

- Setting up your network operating system
- Installing and configuring interface cards
- Installing and configuring network adapters

Please have the following information ready when you call:

- Machine Type and Model
- Serial numbers of your computer, monitor, and other components, or your proof of purchase
- Description of the problem
- Exact wording of any error messages
- Hardware and software configuration information for your system

If possible, be at your computer when you call.

In the U.S. and Canada, these services are available 24 hours a day, 7 days a week. In the U.K., these services are available Monday through Friday, from 9:00 a.m. to 6:00 p.m.<sup>1</sup>

Country		Telephone number
Austria	Österreich	1-546 585 075
Belgium - Dutch	Belgie	02-717-2504
Belgium - French	Belgique	02-717-2503
Canada	Canada	1-800-565-3344
Denmark	Danmark	03-525-6905
Finland	Suomi	9-22-931805
France	France	01-69-32-40-03

---

<sup>1</sup> Response time will vary depending on the number and complexity of incoming calls.

<b>Country</b>		<b>Telephone number</b>
Germany	Deutschland	069-6654-9003
Ireland	Ireland	01-815-9207
Italy	Italia	02-4827-5003
Luxembourg	Luxembourg	298-977-5060
Netherlands	Nederland	020-504-0531
Norway	Norge	2-305-3203
Portugal	Portugal	01-791-5147
Spain	España	091-662-4270
Sweden	Sverige	08-632-0063
Switzerland - German	Schweiz	01-212-1810
Switzerland - French	Suisse	022-310-0418
Switzerland - Italian	Svizzera	091-971-0523
United Kingdom	United Kingdom	01475-555555
U.S.A. and Puerto Rico	U.S.A. and Puerto Rico	1-800-772-2227

In all other countries, contact your IBM reseller or IBM marketing representative.

## Getting Help Around the World

If you travel with your computer or need to move it to another country, you can register for International Warranty Service. When you register with the International Warranty Service Office, you will receive an International Warranty Service Certificate that is honored virtually worldwide, wherever IBM or IBM resellers sell and service IBM PC products.

For more information or to register for International Warranty Service:

- In the U.S. or Canada, call 1-800-497-7426.
- In Europe, call 44-1475-893638 (Greenock, U.K.).
- In Australia and New Zealand, call 61-2-9354-4171.

In all other countries, contact your IBM reseller or IBM marketing representative.

## **Purchasing Additional Services**

During and after the warranty period, you can purchase additional services, such as support for IBM and non-IBM hardware, operating systems, and application programs; network setup and configuration; upgraded or extended hardware repair services; and custom installations. Service availability and name might vary by country.

### **Enhanced PC Support Line**

Enhanced PC Support is available for desktop and mobile IBM computers that are not connected to a network. Technical support is provided for IBM computers and IBM or non-IBM options, operating systems, and application programs on the Supported Products list.

This service includes technical support for:

- Installing and configuring your out-of-warranty IBM computer
- Installing and configuring non-IBM options in IBM computers
- Using IBM operating systems in IBM and non-IBM computers
- Using application programs and games
- Tuning performance
- Installing device drivers remotely
- Setting up and using multimedia devices
- Identifying system problems
- Interpreting documentation

You can purchase this service on a per-call basis, as a multiple-incident package, or as an annual contract with a

10-incident limit. For more information about purchasing Enhanced PC Support, see “Ordering Support Line Services” on page 22.

## 900-Number Operating System and Hardware Support Line

In the U.S., if you prefer to obtain technical support on a pay-as-you-go basis, you can use the 900-number support line. The 900-number support line provides support for IBM PC products that are out of the warranty period.

To access this support, call 1-900-555-CLUB (2582). You will be notified of the charge per minute.

## Network and Server Support Line

Network and Server Support is available for simple or complex networks made up of IBM servers and workstations using major network operating systems. In addition, many popular non-IBM adapters and network interface cards are supported.

This service includes all of the features of the Enhanced PC Support Line, plus:

- Installing and configuring client workstations and servers
- Identifying system problems and correcting problems on the client or the server
- Using IBM and non-IBM network operating systems
- Interpreting documentation

You can purchase this service on a per-call basis, as a multiple-incident package, or as an annual contract with a 10-incident limit. For more information about purchasing Network and Server Support, see “Ordering Support Line Services.”

## Ordering Support Line Services

Enhanced PC Support Line and Network and Server Support Line services are available for products on the Supported Products list. To receive a Supported Products list:

- In the U.S.:

1. Call 1-800-426-3395.
  2. Select document number 11683 for Network and Server support.
  3. Select document number 11682 for Enhanced PC support.
- In Canada, contact IBM Direct at 1-800-465-7999, or:
    1. Call 1-800-465-3299.
    2. Select the HelpWare catalog.
  - In all other countries, contact your IBM reseller or IBM marketing representative.

For more information or to purchase these services:

- In the U.S., call 1-800-772-2227.
- In Canada, call 1-800-465-7999.
- In all other countries, contact your HelpCenter.

## Warranty and Repair Services

You can upgrade your standard hardware warranty service or extend the service beyond the warranty period.

Warranty upgrades in the U.S. include:

- Carry-in service to on-site service  
If your warranty provides carry-in repair service, you can upgrade to on-site repair service, either standard or premium. The standard upgrade provides a trained servicer within the next business day (9 a.m. to 5 p.m., local time, Monday through Friday). The premium upgrade provides 4-hour average response, 24 hours a day, 7 days a week.
- On-site service to premium on-site service  
If your warranty provides for on-site service, you can upgrade to premium on-site service (4-hour average on-site response, 24 hours a day, 7 days a week).

You also can extend your warranty. Warranty and Repair Services offers a variety of post-warranty maintenance options, including ThinkPad EasyServ Maintenance Agreements. Availability of the services varies by product.

For more information about warranty upgrades and extensions:

- In the U.S., call 1-800-426-4968.
- In Canada, call 1-800-465-7999.
- In all other countries, contact your IBM reseller or IBM marketing representative.

## **Ordering Publications**

Additional publications are available for purchase from IBM. For a list of publications available in your country:

- In the U.S., Canada, and Puerto Rico, call 1-800-879-2755.
- In other countries, contact your IBM reseller or IBM marketing representative.

## Appendix A. Notices

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