



Software Installation Guide

Parallel SCSI Host Adapter Boards
for the PCI Bus

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OS/2	2.20
Windows 95	2.25

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Table of Contents

Section 1 Introduction

1.1	Before You Begin	1-1
1.2	Before You Install	1-1
1.3	General Description	1-2

Section 2 DOS Drivers Installation

2.1	Introduction	2-1
2.2	DOS Driver Files	2-1
2.3	Installing Your Drivers with SCSI Install	2-2
2.4	Installing Your Drivers Manually	2-3
2.4.1	DOS RAM BIOS and ASPI Manager Driver and Switch Options	2-4
2.4.1.1	Installing the RAM BIOS and ASPI Manager Driver	2-5
2.4.2	DOS Disk Driver	2-6
2.4.2.1	Installing the DOS Disk Driver	2-6
2.4.3	DOS CD-ROM Driver and Command Line Parameter	2-7
2.4.3.1	Installing the DOS CD-ROM Driver	2-8

Section 3 Windows NT Driver Installation

3.1	Introduction	3-1
3.2	Windows NT Driver Files	3-1
3.3	Windows NT Installation	3-1
3.3.1	Installing Windows NT and the Windows NT Driver	3-2

3.3.2	Installing the Windows NT Driver for Windows NT 3.51	3-2
3.3.3	Installing the Windows NT Driver for Windows NT 4.0	3-3
3.3.3.1	Enabling Enhanced Scatter/Gather	3-3
3.3.4	Updating the Windows NT Driver	3-4

Section 4 NetWare Driver Installation

4.1	Introduction.	4-1
4.2	NetWare Driver Files and Setting Options.	4-1
4.3	NetWare Driver Installation	4-3
4.3.1	Installing NetWare 3.12 through 4.11 Drivers	4-3
4.3.2	Installing the NetWare 4.1X Driver	4-4

Section 5 OS/2 ADD Installation

5.1	Introduction.	5-1
5.2	OS/2 ADD Files and Switch Options.	5-1
5.3	OS/2 Driver Installation	5-3
5.3.1	Installing OS/2 Warp Version 4	5-4
5.3.2	Updating the OS/2 ADD Using a Diskette	5-4
5.3.3	Installing the OS/2 ADD Using the OS/2 Warp CD-ROM	5-5

Section 6 Windows 95 Driver Installation

6.1	Introduction.	6-1
6.2	Windows 95 Driver Files	6-1
6.3	Windows 95 Driver Installation	6-1
6.3.1	Installing Windows 95 and the Windows 95 Driver	6-2
6.3.2	Installing the Windows 95 Driver	6-4

Section 7 SCO 5.0 Device Driver Installation

7.1	Introduction	7-1
7.2	SCO Device Driver Installation	7-1
7.2.1	Installing the SCO Operating System and the SCO Device Driver	7-2
7.2.2	Installing the SCO Device Driver	7-2
7.3	Device Configuration	7-3

TABLES

Table	Page
2-1 DOS RAM BIOS and ASPI Manager Driver Switch Options	2-4
4-1 QL10NWN3.DSK and QL10NWR3.DSK Driver Setting Options	4-2
4-2 QL1000.HAM Driver Setting Options	4-3
5-1 OS/2 ADD Switch Options	5-2

Section 1

Introduction

NOTE: The following QLogic host adapter boards are collectively referred to as the *QLA1xxx board* unless otherwise noted:

QLA1040 (wide, single-ended, ultra)

QLA1041 (wide, differential, ultra)

QLA1042 (wide, single ended, dual channel, ultra)

QLA1042D (wide, differential, dual channel, ultra)

1.1

Before You Begin

After successfully installing your QLA1xxx board, you are ready to install the software drivers you need for the QLA1xxx board to communicate between your host machine and the desired peripherals.

In your package there are two envelopes containing diskettes that have the software drivers you can use with your system. Before you continue, make sure that the envelopes contain the following diskettes:

- DOS-NT-NetWare-OS/2-Win95 – contains the drivers for all supported operating systems
- SCO Unix – contains the driver for SCO UNIX

1.2

Before You Install

Before you install the software drivers, you need to:

- Read through this guide to determine which drivers you want to install.
- Make a backup copy of the diskettes.

If you have QLogic drivers already installed on your system, you can check the driver versions by performing the following procedure:

1. Place the DOS-NT-NetWare-OS/2-Win95 diskette in an appropriate drive.
2. Copy the QLVER.EXE file from the diskette into the directory with the QLogic 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 /h (help) parameter. For example:

```
QLVER /h
```

NOTE: The latest versions of the software drivers and documentation may be obtained from the QLogic web site, <http://www.qlc.com>.

1.3

General Description

Software drivers for the following operating systems are provided with your QLA1xxx board:

- Microsoft disk operating system (MS-DOS) version 5.0 and above with advanced SCSI programming interface (ASPI) support
- Windows NT versions 3.51 and 4.0
- Novell NetWare versions 3.12 through 4.XX
- IBM Operating System/2 (OS/2) Warp 4.0
- Windows 95
- Santa Cruz Operations (SCO) UNIX version 5.0

Section 2

DOS Drivers Installation

2.1

Introduction

This section provides instructions for installing the drivers for MS-DOS versions 5.0 and above under the following operating system conditions:

- Initial installation of MS-DOS, a new SCSI hard drive, and the MS-DOS drivers

If you are installing a new system that has an uninitialized SCSI hard drive and no other hard drives attached, install MS-DOS version 5.0 or above according to the Microsoft DOS user manual before installing the DOS drivers.

- Initial installation of a SCSI hard disk and the MS-DOS drivers on an existing system

If you have an existing system and you are attaching a new SCSI hard drive to the QLA1xxx board, run the DOS FDISK and FORMAT utilities to prepare the drive for use.

2.2

DOS Driver Files

The following files on the DOS-NT-NetWare-OS/2-Win95 diskette are provided for installation of the DOS drivers:

- \DOS\INSTALL.EXE – SCSI Install program
- \DOS\QL10ASPI.SYS – Random access memory basic input/output system (RAM BIOS) and ASPI manager driver
- \DOS\QL00DISK.SYS – disk driver
- \DOS\QL00CDRM.SYS – Compact disk-read only memory (CD-ROM) driver
- README.TXT – helpful hints about the DOS drivers

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

CAUTION! Do not use the old versions of QLogic drivers QL10DOS.SYS and QL00ASPI.SYS with the new driver QL10ASPI.SYS. Using both versions may cause system problems. Remove any previous QLogic drivers before installing the new drivers.

2.3

Installing Your Drivers with SCSI Install

SCSI Install is a menu-based utility for installing and configuring the DOS drivers. SCSI Install can automatically update your CONFIG.SYS and AUTOEXEC.BAT files and create backup copies of the original files, identifying them with .QLC extensions. SCSI Install runs under MS-DOS version 5.0 and above.

If you use SCSI Install, you do not need to perform the manual installation procedures in section 2.4.

Perform the following steps to install your drivers using SCSI Install.

1. Insert the DOS-NT-NetWare-OS/2-Win95 diskette in an appropriate drive.
2. At a DOS prompt, type **(drive):INSTALL** and press <ENTER>. For example:
A:INSTALL
3. Press the <ENTER> key again to select *Continue with Installation* or press <Esc> to abort the installation.
4. If you want to install the drivers on a drive or in a directory other than the default of C:\QLC, use the up and down arrow keys and the <ENTER> key to select the location you want.
5. You are prompted to *Read the README file* or *Continue with the Installation*. Use the up and down arrow keys and the <ENTER> key to make your selection. If you choose to view the README file, press the <Esc> key when you are finished and proceed to step 6.

6. Use the up and down arrow keys and the <ENTER> key to choose *YES* if you want to connect a CD-ROM or *NO* if you don't. Follow the instructions on the screen.
7. After completing the installation, exit SCSI Install and remove the diskette from the drive.
8. Reboot your system.

The following is an example of what is added to your CONFIG.SYS file in a standard installation with CD-ROM:

```
DEVICEHIGH=C:\QLC\QL10ASPI.SYS /D
REM DEVICEHIGH=C:\QLC\QL00DISK.SYS
DEVICEHIGH=C:\QLC\QL00CDRM.SYS /D:QLC0000
```

The following is an example of what is added to your AUTOEXEC.BAT file in a standard CD-ROM installation:

```
C:\DOS\MSCDEX.EXE /D:QLC0000
```

NOTE:

If you do not have a hard drive attached to the QLA1xxx board or you have disabled the QLogic BIOS PROM, then the line that loads the QL10ASPI.SYS driver must precede any line that loads a memory manager in your CONFIG.SYS file.

If the QLogic BIOS PROM is disabled, remove the REM statement from the line containing the QL00DISK.SYS driver. Removing the statement loads the driver and allows DOS to configure the disk drives.

2.4

Installing Your Drivers Manually

The following sections contain detailed information for manually installing the DOS drivers.

When installing the software drivers, copy only the files you need to your system.

Before you install the DOS drivers, make backup copies of the CONFIG.SYS and AUTOEXEC.BAT files on your system.

NOTE: If you are running HIMEM.SYS and a memory manager such as EMM386.SYS, you can save low memory space by substituting DEVICEHIGH for DEVICE in your CONFIG.SYS file when installing the drivers.

2.4.1
DOS RAM BIOS and ASPI Manager Driver and Switch Options

The QLA1xxx board has an onboard basic input/output system programmable read-only memory (BIOS PROM) that boots the system from a SCSI disk. In addition, a RAM BIOS that includes an ASPI manager is provided. Using the RAM BIOS and ASPI manager driver gives your system enhanced performance and the additional functionality of the CD-ROM and DOS disk drivers.

NOTE: Using the RAM BIOS and ASPI manager driver is mandatory when you install the CD-ROM or disk drivers.

The DOS ASPI manager provides the standard ASPI interface to the QLA1xxx board. Many SCSI application programs require this interface for disk backup and restore operations to SCSI tape devices, scanners, removable devices, etc.

The option switches in table 2-1 may be appended to your RAM BIOS and ASPI manager driver DEVICE= line in your CONFIG.SYS file.

Table 2-1. DOS RAM BIOS and ASPI Manager Driver Switch Options

Parameter	Description
/PARITY	This switch enables SCSI bus parity checking. By default, parity check1ing is disabled.
/NORESET	This switch disables SCSI reset during initialization. This switch is useful for peripherals that take longer than 3 seconds to recover from SCSI resets.

**Table 2-1. DOS RAM BIOS and ASPI Manager Driver
Switch Options (Continued)**

Parameter	Description
/ASYNC	This switch disables synchronous data transfers.
/NODISCONNECT	This switch disables SCSI disconnects. By default, disconnects are enabled.
/NOSEEK	Some SCSI devices do not implement SCSI seek commands. This switch disables the SCSI seek commands. By default, SCSI seek commands are enabled.
/DISPLAY or /D	When enabled, this switch displays the SCSI configuration when the driver is loaded. By default, the SCSI configuration is not displayed.
/E	This switch disables the ASPI portion of the RAM BIOS and ASPI manager driver. By default, ASPI is enabled.

2.4.1.1

Installing the RAM BIOS and ASPI Manager Driver

Perform the following steps to install the RAM BIOS and ASPI manager driver.

NOTE: If you are installing NetWare, the RAM BIOS and ASPI manager driver is not required and should not be loaded.

1. Place the DOS-NT-NetWare-OS/2-Win95 diskette in an appropriate drive.
2. Create a directory on the boot drive of the computer to store the driver. For example:

```
MKDIR C:\QLC
```

3. Copy the RAM BIOS and ASPI manager driver file from the diskette to the directory created in step 2. For example:

```
COPY A:\DOS\QL10ASPI.SYS C:\QLC\*.*
```

4. Add a RAM BIOS and ASPI manager driver `DEVICE=` line to your `CONFIG.SYS` file. When you reboot your computer, this line loads the driver into your system. For example:

```
DEVICE=C:\QLC\QL10ASPI.SYS
```

If you do not have a hard drive attached to the QLA1xxx board or you have disabled the QLogic BIOS PROM, then the `QL10ASPI.SYS` line must precede any memory manager line in your `CONFIG.SYS`. For example:

```
DEVICE=C:\QLC\QL10ASPI.SYS
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.SYS
```

5. If you want to use any of the option switches, append them to the RAM BIOS and ASPI manager driver `DEVICE=` line in your `CONFIG.SYS` file. For example:

```
DEVICE=C\QLC\QL10ASPI.SYS /DISPLAY /E
```

6. Save your edited `CONFIG.SYS` file.
7. If you are installing more drivers, proceed to the next appropriate section; otherwise, reboot your system to load the drivers.

2.4.2

DOS Disk Driver

The DOS disk driver (`QL00DISK.SYS`) is used only in the following cases:

- You have hard drives attached to the QLA1xxx board and you have disabled the QLogic BIOS PROM. When the BIOS PROM is disabled, the DOS disk driver configures the disk devices into DOS and assigns drive letters.
- You have attached a removable disk drive to the QLA1xxx board and are not using the driver provided by the vendor.

2.4.2.1

Installing the DOS Disk Driver

Before you can install the DOS disk driver, you must first install the RAM BIOS and ASPI manager driver (see section 2.4.1.1).

Perform the following steps to install the DOS disk driver.

1. Place the DOS-NT-NetWare-OS/2-Win95 diskette in an appropriate drive.
2. Copy the DOS disk driver file from the diskette to the computer's boot drive. For example:

```
COPY A:\DOS\QL00DISK.SYS C:\QLC\*.*
```

3. Add a disk driver DEVICE= line to your CONFIG.SYS file after the line that loads the RAM BIOS and ASPI manager driver. For example:

```
DEVICE=C:\QLC\QL10ASPI.SYS
```

```
DEVICE=C:\QLC\QL00DISK.SYS
```

4. Save your edited CONFIG.SYS file.
5. If you are installing more drivers, proceed to the next appropriate section; otherwise, reboot your system to load the drivers.

2.4.3

DOS CD-ROM Driver and Command Line Parameter

The DOS CD-ROM driver provides the interface between the MSCDEX.EXE program and the CD-ROM device attached to the QLA1xxx board. The CD-ROM driver, RAM BIOS and ASPI manager driver, and MSCDEX.EXE program are required for accessing the CD-ROM attached to the QLA1xxx board.

The DOS CD-ROM driver and the MSCDEX.EXE program require the following parameter:

/D:your driver name This name associates the MSCDEX.EXE program and the CD-ROM driver. The name can be any legal DOS name.

NOTE: The /D: in the parameter does not refer to the drive letter of the CD-ROM. See section 2.4.3.1 for examples.

Make sure the driver name you supply to the MSCDEX.EXE program is **identical** to the one you supply to the DOS CD-ROM driver parameter (see section 2.4.3.1).

NOTE: The MSCDEX.EXE program is provided by Microsoft with MS-DOS version 6.0 and above. If you are running an older version of MS-DOS, contact Microsoft to obtain the program.

2.4.3.1

Installing the DOS CD-ROM Driver

Before you can install the DOS CD-ROM driver, you must first install the RAM BIOS and ASPI manager driver (see section 2.4.1.1).

Perform the following steps to install the DOS CD-ROM driver.

1. Place the DOS-NT-NetWare-OS/2-Win95 diskette in an appropriate drive.
2. Copy the DOS CD-ROM driver file from the diskette to the computer's boot drive. For example:

```
COPY A:\DOS\QL00CDRM.SYS C:\QLC\*.*
```

3. Add a CD-ROM driver DEVICE= line to your CONFIG.SYS file after the line that loads the RAM BIOS and ASPI manager driver. When you reboot your computer, this line loads the driver into your system. For example:

```
DEVICE=C:\QLC\QL10ASPI.SYS
DEVICE=C:\QLC\QL00CDRM.SYS /D:QLC0000
```

If you are installing NetWare from a CD-ROM, you must copy and use the QLNWCDRM.SYS CD-ROM driver (located in the \NETWARE directory of the QLogic driver disk). For example:

```
DEVICE=C:\QLC\QLNWCDRM.SYS /D:QLC0000
```

4. Save your edited CONFIG.SYS file.
5. Add a line in your AUTOEXEC.BAT file for the MSCDEX.EXE program (supplied by Microsoft). For example:

```
C:\DOS\MSCDEX.EXE /D:QLC0000
```

6. Save your edited AUTOEXEC.BAT file.
7. Reboot your system to load the driver.

Section 3

Windows NT Driver Installation

3.1

Introduction

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

- Initial installation of the Windows NT operating system and the Windows NT driver
- Installation of the Windows NT driver in an already installed Windows NT operating system

3.2

Windows NT Driver Files

The following files on the DOS-NT-NetWare-OS/2-Win95 diskette are provided for installation of the Windows NT driver:

- TXTSETUP.OEM – driver installation script for initial Windows NT text setup
- QLSCSI – identification file for Windows NT setup program
- \NT\OEMSETUP.INF – driver installation script for Windows NT setup program
- \NT\QL10WNT.SYS – Windows NT 3.51 and 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.

3.3

Windows NT Installation

To install Windows NT on your system, perform the installation procedures in section 3.3.1. If Windows NT 3.5.1 is already loaded on your system,

perform the installation procedures in section 3.3.2. If Windows NT 4.0 is already loaded on your system, perform the installation procedures in section 3.3.3.

3.3.1

Installing Windows NT and the Windows NT Driver

Perform the following steps to install Windows NT 3.51 or 4.0 on the SCSI disk drive attached to the QLA1xxx board. You may use these same steps to install Windows NT from a CD-ROM attached to the QLA1xxx board.

1. Place the Windows NT setup diskette in an appropriate drive.
2. Reboot your system.
3. Follow the standard Windows NT installation instructions. An older version of the QLogic Windows NT driver is included with the NT operating system.
4. Follow the instructions in section 3.3.4 to update the driver from diskette.

NOTE: You may also visit the QLogic web site at <http://www.qlc.com> to obtain the latest drivers.

3.3.2

Installing the Windows NT Driver for Windows NT 3.51

Perform the following steps to add the Windows NT driver to a previously installed Windows NT 3.51 system.

1. Select *Windows NT Setup* from the main program group.
2. Select *Options* from the Windows NT Setup window.
3. Select *Add/Remove SCSI Adapter* from the Options menu.
4. Select *Add* from the SCSI Adapter Setup window.
5. Read the setup message and select *OK*.

6. Select *QLogic PCI SCSI adapters* from the list of supported adapters.
7. Follow the instructions on the screen and the standard procedures from your Windows NT source media to install the driver.

3.3.3

Installing the Windows NT Driver for Windows NT 4.0

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 on *Add*.
5. Select *QLogic* from the list of manufacturers and *QLogic PCI SCSI adapters* from the list of supported adapters. Click on *OK*.
6. Follow the instructions on the screen and the standard procedures from your Windows NT source media to install the driver.

3.3.3.1

Enabling Enhanced Scatter/Gather

Windows NT 4.0 includes enhanced scatter/gather list support for handling very large SCSI I/O transfers. Version 4.0 supports up to 256 scatter/gather segments of 4096 bytes each, allowing transfers of up to 1,048,576 bytes. By default, transfers are limited to 65,536 bytes. Enabling the large transfers requires the addition of a new subkey to the registry. See the README.TXT file for the procedure to activate the enhanced scatter/gather feature.

3.3.4

Updating the Windows NT Driver

Perform the following steps if the 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 QL10WNT.SYS QL10WNT.SAV
```

4. Insert the DOS-NT-NetWare-OS/2-Win95 diskette with the updated driver in an appropriate drive.
5. Copy the new driver over the old driver. For example:

```
COPY A:\NT\QL10WNT.SYS
```

6. Reboot your system to load the driver.

Section 4

NetWare Driver Installation

4.1

Introduction

This section provides instructions for installing the NetWare driver under the following operating system conditions:

- Initial installation of Novell NetWare and the NetWare driver
- Installation of the NetWare driver in an already installed Novell NetWare system

The drivers in this section interface with Novell NetWare. The drivers with a .DSK extension are compatible with NetWare 3.12 through 4.11 operating systems. The drivers with a .HAM extension are compatible only with NetWare 4.1X operating systems.

4.2

NetWare Driver Files and Setting Options

The following files on the DOS-NT-NetWare-OS/2-Win95 diskette are provided for installation of the NetWare 3.12 through 4.1X drivers:

- NETWORK\QL10NWR3.DSK – driver for NetWare 3.12 through 4.11 with ASPI support
- NETWORK\QL10NWN3.DSK – driver for NetWare 3.12 through 4.11 without ASPI support
- NETWORK\QL1000.HAM – driver for NetWare 4.1X
- NETWORK\QLNWCDRM.SYS – DOS CD-ROM driver used with NetWare driver installation from a CD-ROM
- NETWORK\README.TXT – helpful hints about the driver and setting options for NetWare 3.12 through 4.1X

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

You can load the QL10NWR3.DSK and QL10NWN3.DSK drivers with optional settings to customize the interface between the driver and Novell NetWare. The available settings are described in table 4-1.

Table 4-1. QL10NWN3.DSK and QL10NWR3.DSK Driver Setting Options

Parameter	Description
EXTEND (0 or 1)	Disk drive geometry 0 = less than 1 gigabyte 1 = greater than 1 gigabyte
RAWV (0 or 1)	Read-after-write verification 0 = disable 1 = enable
LUNS (1-8)	Multiple LUN support (more than 1 per SCSI ID)
EXCLUDE (0 or 1) ^a	Exclude device from NetWare 0 = provides I/O and ASPI access 1 = provides only ASPI access
CARD (0 to 255 decimal)	Card number for ease of management

Table Notes

^aEXCLUDE is not normally required. This parameter is provided for some tape backup utilities and RAID software that requires only ASPI access to devices.

The EXTEND, RAWV, LUNS, and EXCLUDE parameters can be entered one of two ways.

- Parameter=x
 - EXCLUDE=0 enables I/O and ASPI access on all SCSI devices.
 - LUNS=5 enables five LUNS for each SCSI device.
- Parameter[xxx...]
 - EXCLUDE[0000000000000000] enables I/O and ASPI access on all SCSI devices. EXCLUDE[1111000000000000] disables I/O and ASPI access on SCSI devices 0-3 and enables I/O and ASPI access on SCSI devices 4-15.
 - LUNS[2222888888888888] enables two LUNS each on SCSI devices 0-3 and eight LUNS each on SCSI devices 4-15.

You can load the QL10000.HAM driver with optional settings to customize the interface between the driver and Novell NetWare. The available settings are described in table 4-2.

Table 4-2. QL1000.HAM Driver Setting Options

Setting Options	Description
SLOT	Provides support for multiple QLA1xxx boards and loads the driver for each board individually.
/LUN	Enables support for multi-LUN devices

4.3

NetWare Driver Installation

If you are installing the drivers for NetWare 3.12 through 4.11 in a previously installed NetWare system, perform the instructions in section 4.3.1. If you are installing the driver for NetWare 4.1X in a previously installed NetWare system, perform the instructions in section 4.3.2.

4.3.1

Installing NetWare 3.12 through 4.11 Drivers

If you have installed your QLA1xxx board with a CD-ROM attached and you are installing NetWare from the CD-ROM, you must first install the DOS CD-ROM driver (see section 2.4), install NetWare, then continue with this procedure.

Perform the following steps to install the drivers for NetWare 3.12 through 4.11 in a previously installed NetWare system.

1. Place the DOS-NT-NetWare-OS/2-Win95 diskette in an appropriate drive.
2. Copy the appropriate driver file from the diskette to the server root directory. For example:

```
COPY A:\NETWARE\QL10NWN3.DSK C:\SERVER\*.*
```

If your system has another SCSI board with the ASPI manager installed and you do not want ASPI support for the QLA1xxx board, copy the file \NETWARE\QL10NWN3.DSK.

If you want ASPI support with the QLA1xxx board, copy the file \NETWARE\QL10NWR3.DSK. If your system has another SCSI board with the ASPI manager installed, you must remove the ASPI manager support from the other board.

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

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

The following LOAD examples work for a default (factory setting) QLA1xxx board. The values should be changed to reflect your customized settings (see table 4-1). The values you enter in the LOAD command line override the jumper settings on the board.

```
LOAD QL10NWN3.DSK
```

or

```
LOAD QL10NWR3.DSK
```

If you have a CD-ROM attached to the QLA1xxx board, you must load CDROM.NLM, which is provided with NetWare to mount CD-ROM volumes on the server. For example:

```
LOAD QL10NWN3.DSK  
LOAD CDROM.NLM
```

If you are adding any parameters to the driver, add the parameter on the same LOAD line with the driver. For example:

```
LOAD QL10NWR3.DSK LUNS=2
```

4.3.2

Installing the NetWare 4.1X Driver

If you have installed your QLA1xxx board with a CD-ROM attached and you are installing NetWare from the CD-ROM, you must first install the

DOS CD-ROM driver (see section 2.4), install NetWare, then continue with this procedure.

The QL1000.HAM driver is not 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 boots.

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

1. Place the DOS-NT-NetWare-OS/2-Win95 diskette in an appropriate drive.
2. Copy the QL1000.HAM driver file from the diskette to the server root directory. For example:

```
COPY A:\NETWARE\QL1000.HAM C:\NWSERVER\
```

3. Load the driver at the NetWare server prompt (:) by typing the LOAD command with any desired parameters (see table 4-2).

The following LOAD example works for a default (factory setting) QLA1xxx board.

```
LOAD QL1000.HAM
```

If you are installing multiple QLA1xxx boards, add the SLOT setting to the LOAD line. Replace the XXXX in the load line example with the four-digit hexadecimal slot identification number of the slot in which the board is installed.

```
LOAD QL1000.HAM SLOT=XXXX
```

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

```
LOAD QL1000.HAM /LUN
```

NOTE: Supporting multiple LUNs requires QL1000.HAM revision 1.12a or later. You can use the QLVER.EXE utility to determine which version you have. See section 1.2 for instructions.

5. If you have a CD-ROM attached to the QLA1xxx board, in addition to loading QL1000.HAM, you must load CDRM.NLM, which is provided with NetWare to mount CD-ROM volumes on the server. For example:

```
LOAD QL1000.HAM
LOAD CDRM.NLM
```

6. If you require ASPI support for your SCSI devices, you must load the Nwaspi.CDM module, which is provided by NetWare. For example:

```
LOAD QL1000.HAM
LOAD Nwaspi.CDM
```

Section 5

OS/2 ADD Installation

5.1

Introduction

This section provides instructions for installing the OS/2 Warp version 4 and the OS/2 ADD driver under the following operating system conditions:

- Initial installation of the OS/2 Warp operating system and the OS/2 ADD driver
- Installation of the OS/2 driver in an already installed OS/2 Warp operating system

5.2

OS/2 ADD Files and Switch Options

The following files on the DOS-NT-NetWare-OS/2-Win95 diskette are provided for installation of the OS/2 ADD:

- \OS2\QL10.DDP – device driver profile script required for the OS/2 Device Driver Install utility
- \OS2\QL10.ADD – OS/2 ADD
- \OS2\README.TXT – helpful hints about the OS/2 ADD

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

The switch options listed in table 5-1 may be appended to the BASEDEV= line in your CONFIG.SYS file when installing the OS/2 ADD.

Table 5-1. OS/2 ADD Switch Options

Switch	Description
/A:d	This switch specifies the adapter (0-3) to which the following command line parameters apply.
/I	When enabled, this switch ignores the specified adapter. This switch must follow the /A:d switch.
/DM /!DM	This switch enables (/DM) or disables (/!DM) direct access storage device (DASD) manager support for the QLA1xxx board and its attached devices. Add :d,d,d to the end of the switch to specify a list of SCSI IDs, or add :(d,d),(d,d),(d,d) to specify ID,LUN pairs. By default, this switch is enabled.
/SM /!SM	This switch enables (/SM) or disables (/!SM) SCSI manager support for the QLA1xxx board and its attached devices. Add :d,d,d to the end of the switch to specify a list of SCSI IDs, or add :(d,d),(d,d),(d,d) to specify ID,LUN pairs. By default, this switch is enabled.
/!R	This switch reports removable disk devices to OS/2 as fixed disks. By default, removable disks are reported as removable.
/SI:d	This switch specifies the SCSI ID for the adapters specified by the /A:d switch. The default of this switch is SCSI ID 7 (/SI:7).
/SR /!SR	This switch enables (/SR) or disables (/!SR) SCSI bus reset at power up on the QLA1xxx board. Do not use the disable option if any device attached to the QLA1xxx board has synchronous negotiation enabled. By default, this switch is enabled.

Table 5-1. OS/2 ADD Switch Options (Continued)

Switch	Description
/ET /!ET	This switch enables (/ET) or disables (/!ET) embedded target support for the SCSI devices attached to the QLA1xxx board. By default, this switch is enabled (all eight LUNs are supported). Specify /!ET for supporting only LUN 0.
/PAR /!PAR	This switch enables (/PAR) or disables (/!PAR) SCSI bus parity checking on specified adapters. By default, this switch is enabled.
/SN /!SN	This switch enables (/SN) or disables (/!SN) synchronous negotiations for specified adapters and/or devices. Add :d,d,d to the end of the switch to specify a list of SCSI IDs, or add :(d,d),(d,d),(d,d) to specify ID,LUN pairs. By default, this switch is enabled.
/SD /!SD	This switch enables (/SD) or disables (/!SD) SCSI disconnects for specified adapters and/or devices. Add :d,d,d to the end of the switch to specify a list of SCSI IDs, or add :(d,d),(d,d),(d,d) to specify ID,LUN pairs. By default, this switch is enabled.
/V	When enabled, this switch displays configuration data during power up. By default, configuration data is not displayed.
/RA	This switch reverses the order in which the QLA1xxx boards are configured. This parameter is required on systems with some versions of access method interface (AMI) BIOS and more than one QLA1xxx board.

5.3

OS/2 Driver Installation

If OS/2 is not loaded on your system, see section 5.3.1. If OS/2 Warp is already loaded on your system, perform the update procedures in section 5.3.2 using a diskette, or section 5.3.3 using a CD-ROM.

5.3.1

Installing OS/2 Warp Version 4

The QL10.ADD drivers come with version 4 of OS/2 Warp. The drivers are installed automatically when you install OS/2 Warp as long you install the QLA1xxx board **before** OS/2 Warp.

For OS/2 Warp version 4 installation instructions, see the *Up and Running! OS/2 Warp Version 4* book.

5.3.2

Updating the OS/2 ADD Using a Diskette

NOTE:

The QL10.ADD drivers come with version 4 of OS/2 Warp on CD-ROM. If you have version 4 on a CD-ROM, see section 5.3.3.

If you are replacing the host adapter board that is connected to the computer's boot device with the QLA1xxx board, you must update the OS/2 ADD **before** changing the board.

Perform the following steps to add the OS/2 ADD to a previously installed OS/2 Warp system using the DOS-NT-NetWare-OS/2-Win95 diskette.

1. Boot OS/2 Warp.
2. Place the DOS-NT-NetWare-OS/2-Win95 diskette in an appropriate drive.
3. Select the *System Setup* icon from the OS/2 System program group.
4. Select the *Device Driver Install* icon from the OS/2 System Setup program group.
5. Click on the *Change...* box under the source directory path. Change the source directory on the DOS-NT-NetWare-OS/2-Win95 diskette to OS2. For example:

A:\OS2

6. Select *Install*.

7. Select *QLogic Fast!SCSI IQ PCI ADD Driver*. Click on *OK*. The driver is copied to your boot disk and your *CONFIG.SYS* file is updated.
8. Shut down your system.
9. Install the QLA1xxx board.
10. Reboot your system.

5.3.3

Installing the OS/2 ADD Using the OS/2 Warp CD-ROM

NOTE:

The QL10.ADD drivers come with version 4 of OS/2 Warp.

If you are replacing the host adapter board that is connected to the computer's boot device with the QLA1xxx board, you must update the OS/2 ADD **before** changing the board.

Perform the following steps to add the OS/2 ADD to a previously installed OS/2 Warp system using the OS/2 Warp CD-ROM.

1. Insert the CD-ROM into the CD-ROM drive.
2. From the OS/2 Warp main menu, double click on the OS/2 icon.
3. Double click on the *System Setup* icon.
4. Double click on the *Install/Remove* icon.
5. Double click on the *Selective Install* icon.
6. From the System Configuration screen, click on the *SCSI Adapter Support* icon.
7. From the SCSI Adapter screen, scroll down the menu using the down arrow key. Select *QLogic Fast!SCSI IQ PCI ADD Driver* and click on *OK*.
8. Click on *Next* to continue with the installation.

Section 6

Windows 95 Driver Installation

6.1

Introduction

This section provides instructions for installing the Windows 95 driver under the following operating system conditions:

- Initial installation of the Windows 95 operating system and the Windows 95 driver
- Installation of the Windows 95 driver in a previously installed Windows 95 operating system

6.2

Windows 95 Driver Files

The following files on the DOS-NT-NetWare-OS/2-Win95 diskette are provided for installation of the Windows 95 driver:

- \WIN95\QLOGIC.INF – driver installation script for the Windows 95 setup program
- \WIN95\QL1000.MPD – Windows 95 driver
- \WIN95\README.TXT – helpful hints about the Windows 95 driver

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

6.3

Windows 95 Driver Installation

If Windows 95 is not installed on your system, perform the installation procedure in section 6.3.1; if Windows 95 is already installed on your system, perform the installation procedure in section 6.3.2.

6.3.1

Installing Windows 95 and the Windows 95 Driver

Perform the following steps to install the retail version of Windows 95 and the Windows 95 driver.

1. Make sure that MS-DOS 5.0 or later is installed on the system boot disk.
2. Install the QLA1xxx board.
3. If you are installing Windows 95 from a CD-ROM attached to the QLA1xxx board, install the DOS CD-ROM driver (see section 2.4.3).
4. Run the Windows 95 SETUP program by following the instructions provided with Windows 95.
5. After Windows 95 is installed and operational, click on the *My Computer* icon, then the *Control Panel* icon.
6. In the *Control Panel* window, click on the *System* icon and select the *Device Manager* tab.
7. Select *PCI SCSI Bus Controller* listed under *Other Devices*, then click on *Properties*.
8. Select the *Driver* tab and click on *Change Driver*.
9. Select *SCSI Controllers*. Click on *OK*.
10. Insert the DOS-NT-NetWare-OS/2-Win95 diskette and click on *Have Disk*.
11. Enter A:\WIN95 for the path to the drivers. Click on *OK*.
12. Select the *QLogic QLA1xxx SCSI PCI Adapter*. Click on *OK*.
13. Click on *OK* once more to continue.
14. If the *Windows cannot determine if it can remove this device safely* dialog box appears, click on *Cancel*. Do not click on *Test*.

CAUTION! Clicking on *Test* may lock the system. Rebooting the system results in normal operation.

15. Edit your CONFIG.SYS file to remove any QLogic drivers that may have been added for DOS support. These are not required for Windows 95.
16. Reboot your system.

Perform the following steps to install the original equipment manufacturer (OEM) service release of Windows 95 and the Windows 95 driver.

1. Make sure that MS-DOS 5.0 or later is installed on the system boot disk.
2. Install the QLA1xxx board.
3. If you are installing Window 95 from a CD-ROM attached to the QLA1xxx board, install the DOS CD-ROM driver (see section 2.4.3).
4. Run the Windows 95 SETUP program by following the instructions provided with Windows 95.
5. When Windows restarts, a dialog box displays that says *Do you want to see more about your computer not being configured for optimal performance*. Click on *No*.
6. After Windows 95 is installed and operational, click on the *My Computer* icon, then the *Control Panel* icon.
7. In the *Control Panel* window click on the *System* icon and select the *Device Manager* tab.
8. Select *PCI SCSI Bus Controller* listed under *Other Devices*, then click on *Properties*.
9. Select the *Driver* tab. Click on *Update Driver*.
10. Insert the DOS-NT-NetWare-OS/2-Win95 diskette and click on *Yes* in the *Update Device Driver Wizard* dialog box.
11. Click on *Other Locations* when the *Update Device Driver Wizard* dialog box returns.
12. Enter *A: \WIN95* for the path to the drivers. Click on *OK*.
13. Click on *Finish* when the wizard finds the updated driver for the *QLogic PCI-IQ QLA1xxx SCSI Host Adapter Family*.

14. Click on *OK* when prompted to insert the *QLogic SCSI Software Diskette*.
15. Enter *A:\WIN95* for the path to the QLogic driver. Click on *OK*.
16. If the *Windows cannot determine if it can remove this device safely* dialog box appears, click on *Cancel*. Do not click on *Test*.
CAUTION! Clicking on *Test* may lock the system. Rebooting the system results in normal operation.
17. Edit your CONFIG.SYS file to remove any QLogic drivers that may have been added for DOS support. These are not required for Windows 95.
18. Reboot your system.

6.3.2

Installing the Windows 95 Driver

Perform the following steps to install the Windows 95 driver on a system with the Windows 95 retail package already installed.

1. Install your QLA1xxx board and peripheral devices.
2. Reboot your system. The *New Hardware Found* window pops up after detecting the *QLOGIC PCI SCSI Bus Controller*.
3. Insert the DOS-NT-NetWare-OS/2-Win95 diskette and select the option to *Load driver from disk provided by the hardware manufacturer*. Click on *OK*.
4. Enter *A:\WIN95* for the path to the driver, and click on *OK* to install the Windows 95 driver.

Perform the following steps to install the Windows 95 driver on a system with the Windows 95 OEM service release already installed.

1. Install your QLA1xxx board and peripheral devices.
2. Reboot your system. The *New Hardware Found* window pops up after detecting the *QLOGIC PCI SCSI Bus Controller*.
3. Insert the DOS-NT-NetWare-OS/2-Win95 diskette. Click on *Next*.

4. Click on *Other Locations* in the *Update Device Driver Wizard* dialog box.
5. Enter **A:\WIN95** for the path to the driver. Click on *OK*.
6. Click on *Finish* when the wizard finds the updated driver for the *QLogic PCI-IQ QLA1xxx SCSI Host Adapter Family*.
7. Click on *OK* when prompted to insert the *QLogic SCSI Software Diskette (DOS-NT-NetWare-OS/2-Win95)*.
8. Enter **A:\WIN95** for the path to the QLogic driver. Click on *OK*.
9. Reboot your system.

Section 7

SCO 5.0 Device Driver Installation

7.1

Introduction

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

- Initial installation of the SCO operating system and the SCO device driver
- Installation of the SCO device driver in an existing SCO operating system

The SCO device driver uses the SCO boot-time loadable driver (BTLD) function to install SCO. BTLDS can be link edited into the UNIX system kernel during the boot process. The link editing is done by **boot** (HW) after the driver is loaded into RAM memory, but before the kernel is started.

NOTE: The SCO UNIX diskette cannot be read from a DOS environment.

7.2

SCO Device Driver Installation

If SCO is not installed on your system, perform the installation procedures in section 7.2.1. If SCO is already installed, perform the installation procedures in section 7.2.2.

The installation of SCSI host adapters and devices is covered in detail in the SCO 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*)

7.2.1

Installing the SCO Operating System and the SCO Device Driver

Perform the following steps to install SCO and the SCO device driver.

1. Follow the instructions for SCO installation in your SCO installation guide.

NOTE: In the SCO installation guide, follow the instructions for BTLDS.

2. At the prompt (Boot:) enter:

link

3. At the prompt for the package type, enter:

hxha (tag queue support)

or

hxhb (no tag queue support)

Use hxha only if all your attached hard drives support queue tagging. If necessary, contact the hard drive manufacturer to confirm that the hard drive supports this feature.

4. When you are prompted, insert the SCO UNIX diskette in an appropriate drive.

7.2.2

Installing the SCO Device Driver

Perform the following steps to add the SCO device driver to a previously installed SCO system.

NOTE: Do not use the *custom* utility, the System → Software option of *sysadmsh*, or the *Software Manager* utility to add the SCO device driver.

1. Log on the system as a root.
2. Place the SCO UNIX diskette in an appropriate drive.

3. Type the following:

```
installpkg
```

4. Press the <ENTER> key. Follow the instructions on the screen.

7.3

Device Configuration

After installing the SCO device driver, you need to configure your SCSI devices attached to the QLA1xxx board so the system recognizes them. Configuration is done manually or by using the *mkdev* utility. See your SCO hardware configuration guide for information on how to configure the devices manually. See your SCO installation guide for information on using the *mkdev* utility. *Mkdev* edits the system files to support your QLA1xxx board and its attached SCSI devices.

NOTE: Users can access *mkdev* using the *Sysadmsh* utility with the following menu selections:

System → Hardware → HardDisk

