Readme File

FC HBA SCSI Miniport Driver for Windows

Table of Contents

1. Package Contents

The following table describes the contents provided in the FC HBA SCSI miniport driver package.

Filename	Description
AREADME.TXT	HBA API readme File
QL2X00.INF	Driver installation script
QLOGIC Driver	Package identification file
QL2300.CAT	Catalog file
QL2300.SYS	QLogic Fibre Channel miniport driver
QLSDM.DLL	QLogic API
QL2XHAI2.DLL	QLogic HBA API 2.0 Library
readme.txt	Text version of this readme file
TXTSETUP.OEM	Driver installation script for text mode

2. OS Support

This release of the FC HBA SCSI miniport driver works with Windows Server 2003, Windows 2000, and Windows XP Professional as follows:

- The IA32-bit SCSI miniport driver version works with Windows 2000 IA32, Windows Server 2003 IA32, and Windows XP Professional IA32 platforms.
- The IA64-bit SCSI miniport driver version works with Windows Server 2003 IA64 platforms.

NOTE: For specific OS service packs (SP) and updates, refer to the descriptions where this software version is posted on the QLogic website (http://support.qlogic.com/support/drivers_software.asp).

3. Supported Features

The FC HBA SCSI miniport driver supports the following:

- PnP interface
- Point-To-Point F port, FL port, N port and Arbitrated Loop
- IP support
- Dynamic LUN Masking support
- FC Tape support
- Reduced Interrupt Operation

4. Using the Driver

This section provides information on using the driver:

- 4.1. Creating the Driver Disk or Folder
- 4.2. Installing the Driver
- 4.3. Removing the Driver

4.1 Creating the Driver Disk or Folder

To create a driver disk:

1. Go to the QLogic website (http://support.qlogic.com/support/drivers_software.asp).
2. Under the HBAs column, scroll to the appropriate Fibre Channel HBAs category and select the link that identifies your HBA.
3. Select the link that identifies your Windows platform.
4. Click the download link that corresponds to the description of your driver version.
5. Read the license agreement and click **Agree**.
6. When prompted "`Would you like to open the file or save it to your computer?`" click **Save**. Specify a temporary location on the hard drive and download the driver.
7. Insert a blank diskette in the diskette drive A: if you are extracting to a diskette.
8. Run the self-extracting file you just downloaded typing `A:\` in the **Unzip To Folder** field or enter the folder where driver files will be located.

4.2 Installing the Driver

The operating system manages and controls the driver installation process; the driver follows the process dictated by the operating system. The driver installation cannot deviate from this process.

This section provides the most common ways of installing and upgrading the driver, as documented for each operating system. Please consult the operating system manuals for other installation procedures.

This section is divided into the following three sections:

- 4.2.1 Initial OS installation with the QLogic Adapter as Boot or as Add-On
- 4.2.2 Adding the QLogic Adapter to the Existing OS
- 4.2.3 Updating the Existing Driver

4.2.1 Initial OS installation with the FC HBA as Boot or as Add-On

This procedure requires a system with a floppy drive. Follow the procedure below to initially install Windows on the boot disk attached to the QLogic Fibre Channel Adapter:

1. Start the Windows installation procedure using the Setup CD.
2. Press **F6** if you see the message:
   ```
   Press F6 if you want to install a third party SCSI or RAID Driver ... After all the
   standard devices have been loaded, press S to Specify Additional Device.
   ```
3. Insert the QLogic software diskette and press **ENTER**.
4. Select the QLogic Fibre Channel Adapter and press **ENTER**.
5. For Windows Server 2003, press **S**=Use the driver on floppy. The screen displays the following message:
   ```
   Setup will load support for the following mass storage devices.
   Fibre Channel Adapter. Press Enter=Continue.
   ```
6. Press **ENTER**.
7. Continue with the standard installation procedure.

4.2.2 Adding the FC HBA to the Existing OS

To add the FC HBA's driver to an existing Windows system, follow the procedure provided for your Windows version.

Windows 2000

This procedure requires a system with a floppy drive and configured with the latest Service Pack and Windows Update. FC HBAs are devices that are Plug and Play compatible with your computer.

To add the driver to the existing Windows system:

1. Connect the device to the appropriate slot on your computer according to the device manufacturer's instructions.
2. Restart or turn on your computer. When your computer comes up, Windows detects the newly installed device and displays the `Found New Hardware with Fibre Channel Controller` message. The Found New Hardware wizard program starts installing a device driver for the newly installed device.
3. Click **Next**.
4. Select **Search for a suitable driver for my device** (recommended) and click **Next**.
5. If necessary, select **Floppy disk drives** as an optional search location, then click **Next**. Windows displays a message, letting you know it found a driver for this device.
6. Click the **Next** button.
7. Click **Finish** on the Completing the Found New Hardware Wizard.
8. If the system displays the following prompt:
   ```
   System Settings Change. Windows 2000 has finished installing a new devices. You must
   restart your computer before the settings will take effect. Do you want to restart your
   computer now?
   ```
   Click **Yes** to restart the computer right away.

Windows Server 2003

This procedure requires a system with a floppy drive and configured with the latest Service Pack and Windows Update. FC HBAs are devices that are Plug and Play compatible with your computer.

1. Connect the device to the appropriate slot on your computer according to the device manufacturer's instructions.
2. Restart or turn on your computer. When your computer comes up, Windows detects the newly installed device and displays the `Found New Hardware with Fibre Channel Controller` message. The Found New Hardware wizard program starts installing a device driver for the newly installed device.
3. Insert the QLogic Software Diskette into drive A:.
4. Select **Install the software automatically** (Recommended) and click **Next**.
5. Click **Finish** on the Completing the Found New Hardware Wizard.
6. If Windows displays the following message:
   ```
   System Settings Change. Windows has finished installing a new devices. The software that
   supports your device requires that you restart your computer. You must restart your
   computer before the new settings will take effect. Do you want to restart your computer
   now?
   ```
   Click **Yes** to restart the computer right away.

NOTE: If Windows Server 2003 installs the driver for the newly added FC HBA automatically upon startup without prompting you for a selection (ie, Windows Server 2003 installed an inbox driver), go to "Updating the Existing QLogic Driver" section below.

4.2.3 Updating the Existing Driver

To install an updated version of the driver, follow the procedure provided for your Windows version.

Windows 2000

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

1. Start the Device Manager:
    a. Click **Start** and select **Settings > Control Panel**.
    b. Double-click the System applet.
    c. Select the Hardware tab.
    d. Click the **Device Manager** button.
2. Double-click SCSI and RAID Host Bus Adapter.
3. Double-click QLogic Fibre Channel Adapter on the devices list.
4. Select the Driver tab, then click **Update Driver** to start the Upgrade Device Driver Wizard.
5. Click **Next**.
6. Select **Display a list of the known drivers for this device so that I can choose a specific driver**.
7. Insert the QLogic Software Diskette into drive A: and click **Have Disk**. On the Copy manufacturer's files from screen, type in `A:\` or choose the folder where the driver files are located and click **OK**.
8. Select a device on Select a Device Driver screen and click **Next**.
9. Click **Next** on the Upgrade Device Driver Wizard/Start Device Driver Installation screen.
10. Click **Finish** on the Upgrade Device Driver Wizard/Completing the Upgrade Device Driver Wizard.
11. Click **Close**.
12. If Windows displays the following message:
    `System Settings Change. Windows has finished installing a new devices. The software that supports your device requires that you restart your computer. You must restart your computer before the new settings will take effect. Do you want to restart your computer now?`
    Click **Yes** to restart the computer right away.

Windows Server 2003

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

1. Start the Device Manager:
    a. Click **Start**, then select **Settings > Control Panel**.
    b. Double-click the System applet.
    c. Select the Hardware tab.
    d. Click the **Device Manager** button.
2. Use the scroll bar to scroll down the list of hardware types, then double-click **SCSI and RAID Host Bus Adapter**.
3. Double-click QLogic Fibre Channel Adapter from the devices list.
4. Select the Driver tab, then click **Update Driver** to start the Hardware Update Wizard.
5. Select Install from a list or specific location (Advanced) and click **Next**.
6. Select **Don't search I will choose the driver to install** and click **Next**.
7. Insert the QLogic Software Diskette into drive A: and click **Have Disk**.
8. On the Copy manufacturer's files from screen, type in `A:\` or choose the folder where driver files are located and click **OK**.
9. When the Hardware Update Wizard/Select a Device Driver dialog box opens, click **Next**.
10. Click **Finish** on the Hardware Update Wizard/Completing the Hardware Update Wizard.

4.3 Removing the Driver

To remove the driver in a Windows environment, uninstall it as a Plug and Play device:

1. Turn off your computer.
2. Remove the device from your computer according to the manufacturer's instructions.

NOTE: You do not normally have to use the Device Manager or the Hardware wizard to uninstall a Plug and Play device. After you remove the device from your computer and restart your computer, Windows recognizes that it has been removed.

5. Driver Parameters

This section is divided into the following two subsections:

- 5.1 Scsiport Registry Parameters
- 5.2 Driver Registry Parameters

5.1 Scsiport Registry Parameters

QLogic updated the following Windows Scsiport driver registry parameters to tailor to its fibre channel operations.

MaximumSGList

Windows includes enhanced scatter/gather list support for doing very large SCSI I/O transfers. Windows supports up to 256 scatter/ gather segments of 4096 bytes each, allowing transfers up to 1048576 bytes.

To alter this value:

1. From the **Start** menu, select **Run**, and open the `REGEDT32` program.

2. Select `HKEY_LOCAL_MACHINE` and follow the tree structure down to the QLogic driver as follows:

```
HKEY_LOCAL_MACHINE
     SYSTEM
          CurrentControlSet
               Services
                   Ql2300
                        Parameters
                             Device
```

3. Double-click on `MaximumSGList:REG_DWORD:0xFF`.

4. Enter a value from 16 to 255 (0x10 hex to 0xFF). A value of 255 (0xFF) enables the maximum 1 MByte transfer size. Setting a value higher than 255 results with the default of 64K transfers. The default value is 255 (0xFF).

5. Click **OK**.

6. Exit the Registry Editor, then shutdown and reboot the system.

NumberOfRequests

Windows supports the `NumberOfRequests` registry parameter to specify the maximum number of outstanding requests per adapter. When you install the QLogic driver, the system automatically updates the registry for this parameter by setting its value to 150 (0x96).

WARNING: DO NOT increase this parameter above 150. Doing so can cause a system failure.

5.2 Driver Registry Parameters

regfdmi

Enable FDMI (Fabric Device Management Interface) by setting the regfdmi parameter to 1. By default FDMI is disabled.

To change the regfdmi parameter:

1. Select **Start > Run** and open the `REGEDT32` program.

2. Select `HKEY_LOCAL_MACHINE` and follow the tree structure down to the QLogic driver as follows:

```
HKEY_LOCAL_MACHINE
    SYSTEM
        CurrentControlSet
            Services
                Ql2300
                    Parameters
                        Device
```

3. Double-click on `DriverParameters:REG_SZ:regfdmi=0`.

4. Examine the current parameters and modify as needed:
   - If the string `regfdmi=` does not exist, append the following to end of string: `;regfdmi=0`
   - If the string `regfdmi=0` exists, change the value from `0` to `1`.

5. Click **OK**.

6. Exit the Registry Editor, then shutdown and reboot the system.

NOTE: The storport driver uses the registry entry `DriverParameter`, which Microsoft changed from `DriverParameters`. Moving forward scsiminiport is synchronized to use `DriverParameter`. If the registry contains both entries, `DriverParameter` takes precedence.

6. Additional Notes

To ensure the driver functions properly, the driver installation script uses the `QL2x00.inf` file to change some of the system related registry entries such as the disk timeout value of the system disk driver. Removing the driver does not restore those values.

7. Contacting Support

Please feel free to contact your QLogic approved reseller or QLogic Technical Support at any phase of integration for assistance. QLogic Technical Support can be reached by the following methods:

Web: http://support.qlogic.com

North America Contact Information
Email: support@qlogic.com
Phone: (952) 932-4040

Support contact information for other regions of the world is available at the QLogic website:
http://support.qlogic.com

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