

IBM Flex System FC5172 2-port 16 Gb FC Adapter



User's Guide

IBM Flex System FC5172 2-port 16 Gb FC Adapter



User's Guide

Note: Before using this information and the product it supports, read the general information in Appendix B, “Notices” on page 29, the *Safety Information and Environmental Notices and User Guide* documents on the *IBM Flex System Notices for Network Devices* CD, and the *Warranty Information* document that comes with the product.

First Edition, August 2013

© Copyright IBM Corporation 2013.

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Safety	ix
Chapter 1. IBM Flex System FC5172 2-port 16 Gb FC Adapter	1
Related documentation	1
Notices and statements in this document	2
Fibre Channel overview	2
Features and specifications	3
Chapter 2. Installing the adapter	5
Installation guidelines	5
Handling static-sensitive devices	5
Installing the adapter	6
Configuring the adapter	6
Using <i>Fast!UTIL</i>	6
Starting <i>Fast!UTIL</i>	6
Using the Configuration Settings menu	7
Selecting the adapter	7
Configuring the adapter	7
Configuring the selectable boot settings	9
Restoring default settings	10
Accessing raw NVRAM data	10
Configuring advanced adapter settings	10
Scanning for Fibre Channel devices	11
Using the Fibre Channel disk utility	11
Performing a loopback data test	12
Exiting <i>Fast!UTIL</i>	12
Using EFI	12
Adapter Settings	14
Advanced Settings	15
Boot Settings	16
WWN Database	17
Adapter Information	18
Installing device drivers	18
Managing the adapter using the QConvergeConsole application	18
Overview of QConvergeConsole	19
Installation and system requirements	19
Features	19
Utilities tab	20
Update Flash	20
Chapter 3. Updating firmware and device drivers	21
Determining the adapter firmware version	21
Updating firmware and device drivers	22
Chapter 4. Solving problems	25
Fault indications	25
Parts listing	25
Appendix A. Getting help and technical assistance	27
Before you call	27

Using the documentation	27
Getting help and information from the World Wide Web	28
Software service and support	28
Hardware service and support	28
IBM Taiwan product service	28
Appendix B. Notices	29
Trademarks	30
Important notes	30
Electronic emission notices	31
Index	35

Safety

Before installing this product, read the Safety Information.

قبل تركيب هذا المنتج، يجب قراءة الملاحظات الأمنية

Antes de instalar este produto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读 **Safety Information** (安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

. לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítajte Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto, lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

Youq mwngz yungh canjbinj neix gaxgonq, itdingh aeu doeg aen canjbinj soengq cungj vahgangj ancien siusik.

مەزكۇر مەھسۇلاتنى ئورنىتىشتىن بۇرۇن بىخەتەرلىك ئۇچۇرلىرىنى ئوقۇپ چىقىڭ.

ཐོན་རྐྱེན་འདི་བདེ་སྤྱོད་མ་བྱས་ཤིང་། རྒྱུ་རྒྱུ་ཡིད་གཟབ་བྱ་འདྲ་མཉམ་ཡིད་བའི་འོད་ལྡན་བསྟན་དགོས།

Bu ürünü kurmadan önce güvenlik bilgilerini okuyun.

安全
信息
請
先
閱
讀
“
安
全
資
訊
”
。

Statement 1:



DANGER

Electrical current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:

- **Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.**
- **Connect all power cords to a properly wired and grounded electrical outlet.**
- **Connect to properly wired outlets any equipment that will be attached to this product.**
- **When possible, use one hand only to connect or disconnect signal cables.**
- **Never turn on any equipment when there is evidence of fire, water, or structural damage.**
- **Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.**
- **Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.**

To Connect:

1. Turn everything OFF.
2. First, attach all cables to devices.
3. Attach signal cables to connectors.
4. Attach power cords to outlet.
5. Turn device ON.

To Disconnect:

1. Turn everything OFF.
2. First, remove power cords from outlet.
3. Remove signal cables from connectors.
4. Remove all cables from devices.

Chapter 1. IBM Flex System FC5172 2-port 16 Gb FC Adapter

This User's Guide contains instructions for installing your IBM Flex System™ FC5172 2-port 16 Gb FC Adapter in an IBM Flex System compute node.

This document contains information and instructions for installing the adapter, updating the firmware, and solving problems. See the documentation that came with your IBM® compute node to install the adapter; then, return to this *User's Guide* for the information and instructions needed to complete the installation.

For information about the types of compatible devices available for IBM products, contact your IBM marketing representative or authorized reseller. For a list of supported optional devices, see <http://www.ibm.com/servers/eserver/serverproven/compat/us/>.

For the most up-to-date product documentation for all of your IBM Flex System products, go to the IBM Flex System Information Center at <http://publib.boulder.ibm.com/infocenter/flexsys/information/index.jsp>.

Note:

1. Changes are made periodically to the IBM website. Procedures for locating firmware and documentation might vary slightly from what is described in this document.
2. The illustrations in this document might differ slightly from your hardware.
3. The screens that are described or referenced in this document might differ slightly from the screens that are displayed by your system. Screen content varies according to the type of IBM chassis and the firmware versions and options that are installed.

Related documentation

In addition to this *User's Guide*, the following documentation is available.

- *IBM Flex System Network Devices Basic Troubleshooting Information*
This document is provided on the *IBM Flex System Notices for Network Devices* CD, and it contains basic troubleshooting information for your adapter.
- *IBM Flex System Enterprise Chassis Installation and Service Guide*
This document is provided on the documentation CD for the chassis, and provides information about setting up, configuring, and troubleshooting the chassis and its components.
- *IBM Flex System Installation and Service Guide* for your IBM Flex System Compute Node
This document is provided on the documentation CD for the compute node, and provides basic instructions for installing the adapter in the compute node.
- *Safety Information*
This document, provided on the *IBM Flex System Notices for Network Devices* CD, contains translated caution and danger statements. Each caution and danger statement in the documentation has a number that you can use to locate the corresponding statement in your language in the *Safety Information* document.

- *Environmental Notices and User Guide*

This document is provided on the *IBM Flex System Notices for Network Devices* CD, and it contains translated environmental notices.

- *License Agreement for Machine Code*

This multilingual document is provided on the *IBM Flex System Notices for Network Devices* CD and it contains the IBM License Agreement for Machine Code for this product.

- *Warranty Information*

This document, provided on the *IBM Flex System Notices for Network Devices* CD, contains warranty information for your adapter. A printed version is also included with your adapter.

- *Important Notices*

This multilingual document provides the safety, environmental, and emission notices for your product that are required in printed format.

Notices and statements in this document

The caution and danger statements used in this document are also in the multilingual *Safety Information* document provided on the *IBM Flex System Notices for Network Devices* CD.

Each caution and danger statement is numbered for reference to the corresponding statement in the *Safety Information* document.

The following types of notices and statements are used in this document:

- **Note:** These notices provide important tips, guidance, or advice.
- **Important:** These notices provide information or advice that might help you avoid inconvenient or problem situations.
- **Attention:** These notices indicate possible damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage could occur.
- **Caution:** These statements indicate situations that can be potentially hazardous to you. A caution statement is placed just before the description of a potentially hazardous procedure step or situation.
- **Danger:** These statements indicate situations that can be potentially lethal or extremely hazardous to you. A danger statement is placed just before the description of a potentially lethal or extremely hazardous procedure step or situation.

Fibre Channel overview

Fibre Channel technology is outlined in the SCSI-3 Fibre Channel Protocol (SCSI-FCP) standard. Fibre Channel is a high-speed data transport technology used for mass storage and networking.

By adding Fibre Channel adapters to the compute nodes and Fibre Channel-compatible switches or pass-thru modules to the chassis, you can attach the compute node to an external SAN through the external 16 Gbps optical ports on the I/O modules. The Fibre Channel adapter provides up to 32 Gb of full-duplex bandwidth per port.

Features and specifications

The adapter has the following features:

- *Fast!UTIL* basic input/output system (BIOS) utility program to customize the configuration parameters on the adapter and attached drives
- Support for Fibre Channel protocol SCSI (FCP-SCSI)
- Support for point-to-point fabric connection (F-port fabric login)
- Support for Fibre Channel service (classes 2 and 3)
- Extensible Firmware Interface (EFI) Configuration Utility
- Support for FCODE
- Support for IBM Fabric Manager (IFM)

Table 1 lists the adapter specifications:

Table 1. Fibre Channel adapter specifications

Type	Specification
Fiber Channel specifications	<ul style="list-style-type: none"> • Bandwidth: 16 Gb per second maximum at half-duplex and 32 Gb per second maximum at full-duplex per port • Support for both FCP-SCSI • Support for point-to-point fabric connections: F-Port Fabric Login • Support for Fibre Channel Arbitrated Loop (FCAL) public loop profile: Fabric Loop (FL-Port) Port Login • Support for Fibre Channel services class 2 and 3 • Support for FCP SCSI initiator and target operation • Support for full-duplex operation
Processor	Single-chip design with two completely independent 16 Gb serial Fibre Channel ports. Each port provides: <ul style="list-style-type: none"> • Reduced instruction set computer (RISC) processor • Integrated serializer/deserializer • Receive direct memory access (DMA) sequencer • Frame buffer • Five-channel DMA controller
Host data transfer	PCI Express Gen1 x8, Gen2 x8 and Gen3 x4 interface
RAM	1 MB of integrated SRAM per channel with ECC protection for storing code and context information
BIOS ROM	BIOS ROM 256 KB of Flash memory (the Flash is field programmable)
NVRAM	NVRAM 512 bytes, field programmable
Onboard DMA	Five-channel DMA controller for each port: transmit, receive, command, auto-request, and auto-response
Frame buffer FIFO	Integrated 14 KB transmit and 12 KB receive frame buffer
Dimensions	Approximately 9.7 cm × 8.5 cm (3.81 in. × 3.34 in.)
Operating power	Approximately 16 watts

Chapter 2. Installing the adapter

This chapter provides information for installing the adapter in a compute node or expansion unit, installing drivers, and configuring and managing the adapter.

See the following IBM Flex System documentation for additional information:

- The *Installation and Service Guide* for your compute node provides the hardware installation instructions for the adapter.
- The *Installation and Service Guide* for the chassis provides the hardware installation instructions for the compute nodes, switches, and pass-thru modules.
- The *User's Guide* for your switch or pass-thru module has installation and configuration instructions for the adapter.

Installation guidelines

Before you begin installing the adapter in your compute node, read the safety information beginning on page ix and the guidelines in “Handling static-sensitive devices” on page 5. This information will help you work safely with your compute node and options.

Refer to the chassis, compute node, and network device documentation for the instructions to perform and manage system code updates. The most up-to-date versions of these documents are available at <http://publib.boulder.ibm.com/infocenter/flexsys/information/index.jsp>.

Handling static-sensitive devices

Attention:

Static electricity can damage electronic devices, including your compute node. To avoid damage, keep static-sensitive devices in their static-protective packages until you are ready to install them.

To reduce the possibility of damage from electrostatic discharge, observe the following precautions:

- When you work on a chassis that has an electrostatic discharge (ESD) connector, use a wrist strap when you handle modules, optional devices, or compute nodes. To work correctly, the wrist strap must have a good contact at both ends (touching your skin at one end and firmly connected to the ESD connector on the front or back of the chassis).
- Limit your movement. Movement can cause static electricity to build up around you.
- Handle the device carefully, holding it by its edges or its frame.
- Do not touch solder joints, pins, or exposed circuitry.
- Do not leave the device where others can handle and damage it.

- While the device is still in its static-protective package, touch it to any unpainted metal surface of the chassis or any unpainted metal surface on any other grounded component in the rack you are installing the device in for at least 2 seconds. (This drains static electricity from the package and from your body.)
- Remove the device from its package and install it directly into the compute node without setting down the device. If it is necessary to set down the device, place it back into its static-protective package. Do not place the device on your compute node cover or on a metal surface.
- Take additional care when handling devices during cold weather. Heating reduces indoor humidity and increases static electricity.

Installing the adapter

See the documentation that came with your IBM compute node for the instructions to install the adapter; then, return to this *User's Guide* for the instructions to configure the adapter.

Configuring the adapter

This section provides information on configuring the adapter using the following:

- Using *Fast!UTIL*
- Using EFI

Using *Fast!UTIL*

This section provides detailed configuration information for advanced users who want to customize the configuration of the adapter when it is installed in a chassis compute node. You can configure the adapter using the *Fast!UTIL* utility.

Starting *Fast!UTIL*

Start or restart the compute node. To access *Fast!UTIL*, press Ctrl + Q during the adapter BIOS initialization (it might take a few seconds for the *Fast!UTIL* menu to be displayed). The adapter has dual adapter ports that can be configured separately with *Fast!UTIL*. After changing the settings that are described in the "Using the Configuration Settings menu" section, *Fast!UTIL* restarts the compute node to enable the new parameters.

Important:

If the configuration settings are incorrect, the adapter might not function properly. Do not modify the default configuration settings unless you are instructed to do so by an IBM support representative or in these installation instructions.

Using the Configuration Settings menu

Note:

For information about Remote Boot options, contact your IBM technical support representative or review the documentation that came with your compute node or storage-expansion unit, available at <http://www.ibm.com/supportportal/>.

Use the options described in this section to configure the adapter. The **Configuration Settings** menu displays several options that you can use to configure your adapter. This section describes the following information:

- Selecting the adapter
- Configuring the adapter
- Configuring the selectable boot settings
- Restoring default settings
- Accessing raw NVRAM data
- Configuring advanced adapter settings
- Scanning for Fibre Channel devices

Selecting the adapter

Use this option to select, configure, or view either of the two I/O-port addresses on the adapter.

Configuring the adapter

To configure the adapter, select **Host Adapter Settings**.

The default settings and the modifiable settings for the adapter are listed in Table 2 and are described in this section. The adapter is always point-to-point connected in the compute node or expansion unit with an I/O module that supports Fibre Channel operation.

Note:

The adapter settings and default values will vary, based on the version of BIOS code installed for the adapter.

Table 2. Modifiable adapter settings

Setting	Options	Default
Host adapter BIOS	Enabled or disabled	Enabled or disabled
Frame size	512, 1024, 2048	2048
Loop reset delay	0–60 seconds	5 seconds
Adapter hard loop ID	Enabled or disables	Disabled
Hard loop ID	0–125	0
Spin up delay	Enabled or disables	Disabled
Connection Options	0, 1, 2	2
Fibre Channel tape support	Enabled or disabled	Enabled
Data rate	2, 3, 4, 5	2

- **Host adapter BIOS:** When this option is disabled, the read-only memory (ROM) BIOS code on the adapter is disabled, freeing space in upper memory.
- **Frame Size:** This setting specifies the maximum frame length supported by the adapter: **512, 1024, or 2048**.
- **Loop reset delay:** After resetting the loop, the firmware refrains from initiating any loop activity for the number of seconds specified in this setting.
- **Adapter hard loop ID:** If the Adapter Hard Loop ID setting is enabled, the adapter attempts to use the ID specified in this setting.
- **Hard Loop ID:** If the Adapter Hard Loop ID setting is enabled, the adapter attempts to use the ID specified in the Hard Loop ID setting.
- **Spin Up Delay:** When this option is enabled, the BIOS code waits up to 5 minutes to discover the first drive, which allows time for the BIOS code to become operational.
- **Connection options:** Table 3 defines the connection (loop or point-to-point) preference.

Table 3. Adapter connection and data rate options

Option	Type of connection
1	Point-to-point only
2	Loop preferred; otherwise, point-to-point

See the device-driver installation instructions for the required operating system-specific modifications to the NVRAM. There are specific adapter settings that you cannot modify. Table 4 describes these settings and gives examples.

Table 4. Non-modifiable settings for the adapter and examples

Setting	Description
BIOS address	The adapter I/O address where the BIOS code is stored when you press Ctrl + Q. This is the address of the BIOS code in ROM shadow memory. Example: CD400
BIOS revision	The revision number of the installed BIOS code on the adapter. Example: 1.04
Adapter serial number	An alphanumeric identifier for manufacturing use only. It does not correlate to external labels or to the adapter-port name of the adapter. Example: E59719
Interrupt level	The interrupt used by the adapter. The interrupt level can change when the operating system is installed. Example: 3
Adapter port name	The adapter port worldwide-port name (WWPN). Example: 210000096B07C703

- **Fibre Channel tapes support:** This setting is reserved for Fibre Channel tape support.

- **Data rate:** This rate determines the data rate for the adapter as shown in Table 5.

Table 5. Adapter data rates

Option	Data rate
2	Auto Select
3	4 Gbps
4	8 Gbps
5	16 Gbps

Configuring the selectable boot settings

The Configuration Settings menu provides access to the **Selectable Boot Settings** option. If you enable the BIOS in the adapter settings, you can select the boot device, as shown in Table 6.

Table 6. Selectable boot settings

Enable Selectable Boot	Boot WWPN/LUN	Device Boot
No	—	The BIOS configures the first disk drive it finds as the boot device.
Yes	None specified	The BIOS configures the first disk drive it finds that is also LUN 0 as the boot device.
Yes	Specified	The BIOS scans through the specified boot WWPN/LUN list until it finds a disk drive. This drive is configured as the boot device.

This option allows you to specify up to four WWPNs/LUNs as boot devices.

To enable the Selectable Boot option and insert devices into the boot device locations:

1. On the **Configuration Settings** menu, select **Host Adapter Settings**.
2. Enable the **Host Bus Adapter BIOS** and then press the ESC key to return to the Configuration Settings menu.
3. On the **Configuration Settings** menu, select **Selectable Boot Settings**.
4. Press the ENTER key to enable or disable (toggle) the **Selectable Boot** option. Use the DOWN ARROW key to move to the Primary location of the Selectable Boot List menu.
5. Press the ENTER key to see a list of accessible devices (in the Select Fibre Channel Device menu).
6. Select a drive (using the UP ARROW and DOWN ARROW keys or the PAGE UP and PAGE DOWN keys to scroll to the device you want to put into your Selectable Boot menu list) and then press the ENTER key to select the requested device and load it into the Selectable Boot menu list.

7. To specify an alternate boot device on the adapter, use the arrow keys to move to the next available alternate entry, press the ENTER key, select the disk drive you want, and press the ENTER key. You can specify up to three alternate boot devices in this way.

Note:

System BIOS Compatibility: To boot from an adapter in a computer system with a multi-boot system BIOS, the adapter must be included in the list of bootable devices in the system Boot menu.

Restoring default settings

This option is in the Configuration Settings menu. It restores the adapter default NVRAM settings.

Accessing raw NVRAM data

This option displays the adapter NVRAM contents in hexadecimal format. This is a troubleshooting tool; you cannot modify the data.

Configuring advanced adapter settings

Use this option to view and modify the advanced adapter settings listed in Table 7.

Table 7. Advanced adapter settings

Setting	Options	Default
LUNs per target	0, 8, 16, 32, 64, 128, 256	128
Enable LIP reset	Yes or No	No
Enable LIP full login	Yes or No	Yes
Enable target reset	Yes or No	Yes
Login retry count	0–255	8
Port down retry count	0–255	30
Link down timeout	0–255	30
Operation mode	0, 5, 6	6
Interrupt delay timer	0–255	2
Enable interrupt	Yes or No	No

- **LUNs per target:** This setting specifies the number of logical unit numbers (LUNs) per device. Multiple LUN support is typically for redundant array of independent disk (RAID) enclosures that use LUNs to map drives.
- **Enable LIP reset:** This setting determines the type of LIP reset that is used when the operating system initiates a bus reset routine. When this option is set to Yes, the device driver initiates a global LIP reset to clear the target device reservations. When this option is set to No, the device driver initiates a global LIP reset with full login.
- **Enable LIP full login:** This setting instructs the application specific integrated circuit (ASIC) chip to log in to all ports after any LIP.

- **Enable target reset:** This setting enables the device drivers to issue a Target Reset command to all devices on the loop when a SCSI Bus Reset command is issued.
- **Login retry count:** This setting specifies the number of times the software tries to log in to a device.
- **Port down retry count:** This setting specifies the number of times the software retries a command to a port that is returning port-down status.
- **Link down timeout:** This setting specifies the number of seconds the software waits for a link to come up.
- **Operation mode:** Table 8 lists the adapter operation modes.

Table 8. Adapter operation modes

Option	Operation mode
0	Interrupt for every I/O completion
5	Interrupt when Interrupt delay timer expires
6	Interrupt when Interrupt delay timer expires or no action

- **Interrupt delay timer:** This setting contains the value (in 100-microsecond increments) used by a timer to set the wait time between accessing a set of handles and generating an interrupt using DMA.
- **Enable interrupt:** This setting enables or disables the interrupt. When this option is set to Yes, the BIOS uses the interrupt request (IRQ) assigned to the adapter. When this option is set to No, the BIOS polls for the adapter's RISC controller mailbox command completion status.

Scanning for Fibre Channel devices

Use this option to scan and list all the connected devices. Information about each device is listed; for example, vendor name, product name, and revision. This information is useful when you are configuring the adapter and attached devices.

Using the Fibre Channel disk utility

This option scans the Fibre Channel loop and lists all the connected devices by loop ID. You can select a Fibre Channel hard disk and do one of the following tests:

- Perform a low-level format
- Verify the disk media
- Verify the disk data (Some targets do not support this feature.)
- Select a disk device

Attention:

Performing a low-level format destroys all data on the disk.

Performing a loopback data test

The adapter supports the external loopback data test and the internal mailbox loopback data test. When running an external loopback data test, make sure that the Fibre Channel link is up, and a loopback plug is attached to the adapter before starting the test.

Exiting *Fast!UTIL*

After you complete the configuration, select *ExitFast!UTIL* to exit the *Fast!UTIL* menu and restart the compute node.

Using EFI

This section provides information for customizing the configuration of the adapter when it is installed in an EFI-based compute node. You can configure the adapter using the EFI Configuration utility, which provides features for the EFI environment that are similar to the *Fast!Util* utility.

Perform these steps to launch the EFI Configuration Utility:

1. Start or restart the compute node.
2. Press **F1**.
3. Select **System Settings**.

The System Settings screen appears, as shown in Figure 1.

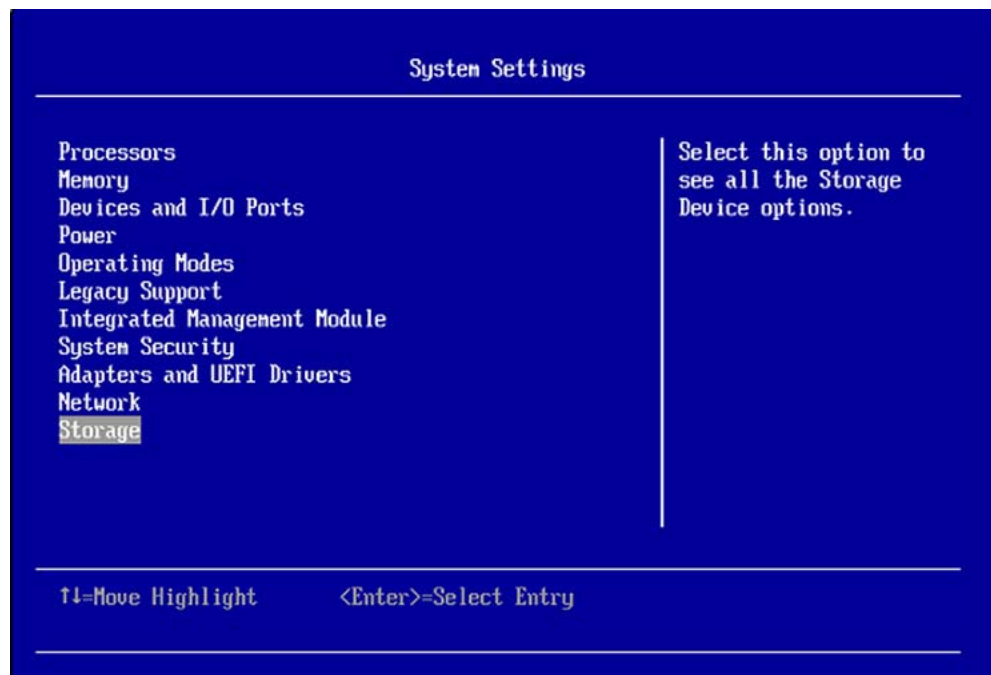


Figure 1. System Settings screen of EFI

4. Select **Storage**.

The Storage screen displays a list of all adapters in the system, as in Figure 2.

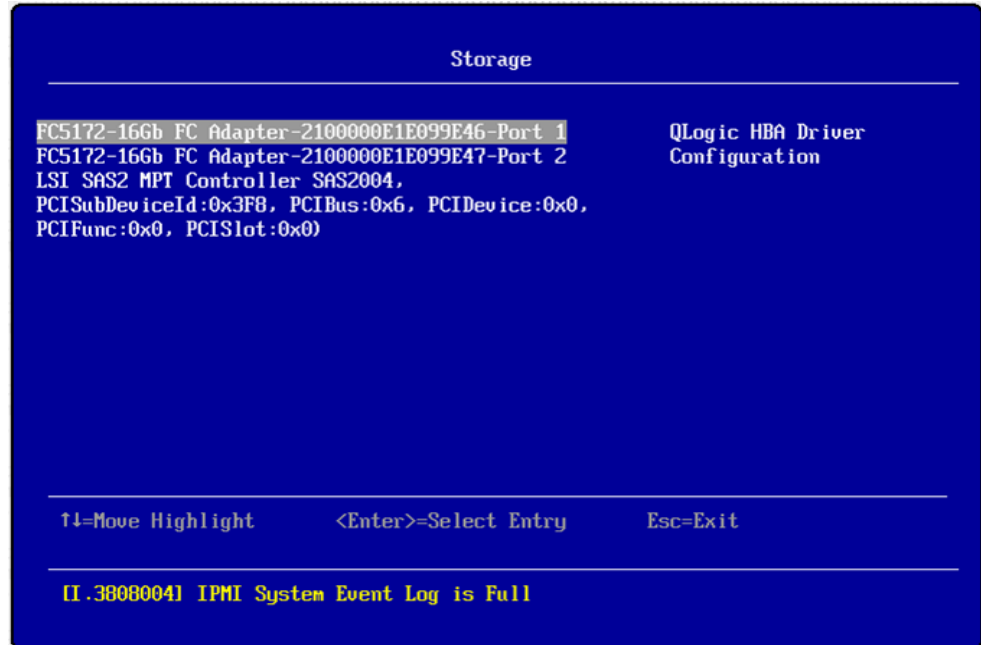


Figure 2. Storage screen of EFI

5. Using the up/down arrows on your keyboard, select the adapter and port to be configured, then press Enter.

The Main Configuration Page menu appears, as shown in Figure 3.

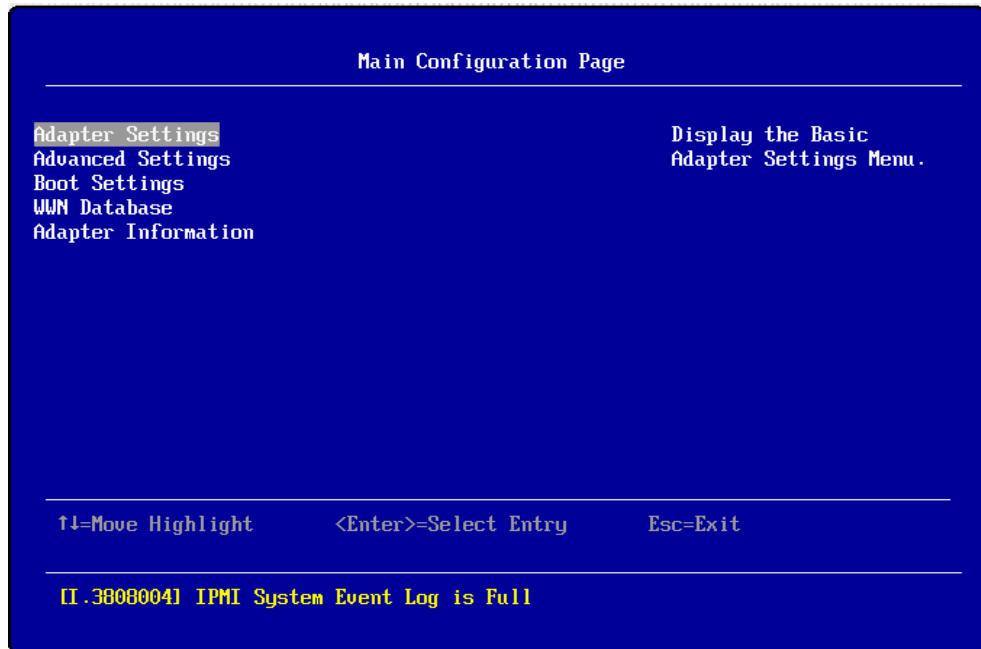


Figure 3. Main Configuration Page menu

6. The Main Configuration Page menu lists the following configuration options:

- Adapter Settings
- Advanced Settings
- Boot Settings
- WWN Database
- Adapter Information

Use the arrow keys to navigate through the menu. When the option you want is highlighted, press Enter to select it.

After you select an option, a screen displays the associated settings and their current values.

To change the value of a setting on any of these screens:

1. Use the up/down arrow keys to move through the settings until the one you want is highlighted. Press Enter.
2. Either type the requested information, or scroll through the list to select the appropriate value. Press Enter.

The screen is refreshed with the new value.

3. To change additional settings, return to step 1.
4. Save the change(s) by selecting **Save Changes** and then pressing Enter.

To exit the Main Menu, select **Exit from Main Menu**.

Adapter Settings

The Adapter Settings screen, (Figure 4) allows you to configure the basic settings of the currently selected adapter.

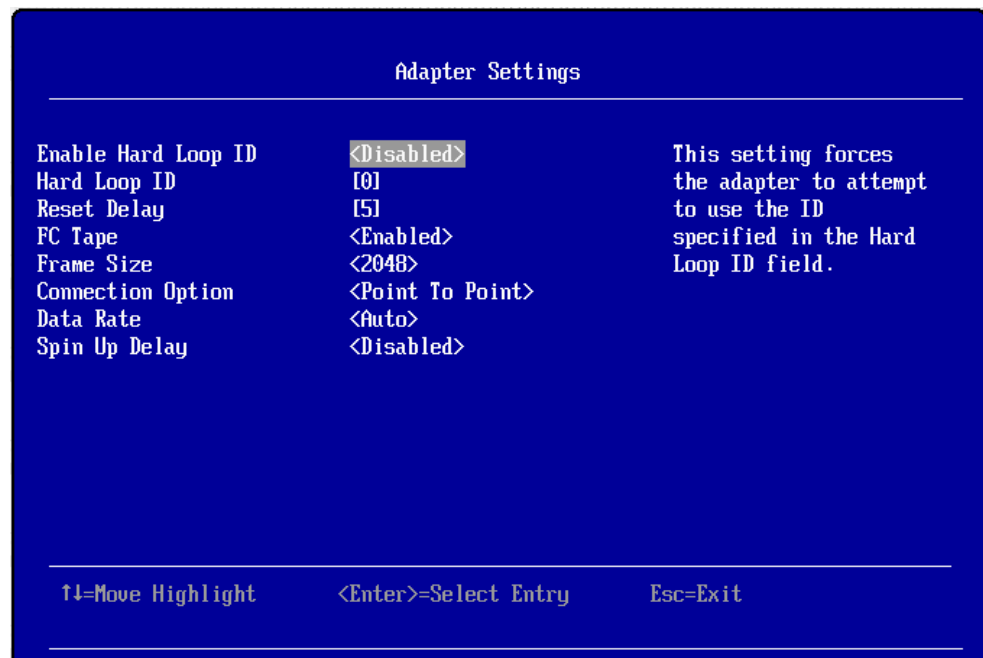


Figure 4. Adapter Settings screen of EFI

The settings on this screen include the following:

- **Enable Hard Loop ID:** If this setting is **Enabled**, the adapter will attempt to use the Loop ID specified in the **Hard Loop ID** setting. The default is **Disabled**.
- **Hard Loop ID:** If the **Enable Hard Loop ID** setting is enabled, the adapter attempts to use the Loop ID specified in this setting. Legal values for this setting are 0–125. The default is 0.
- **Reset Delay:** After resetting the loop, the firmware refrains from initiating any loop activity for the number of seconds specified in this setting. The valid range of values for this setting is 0–255. The default is 5.
- **FC Tape:** This enables or disables FCP-2 recovery. The default is **Enabled**.
- **Frame Size:** This setting specifies the maximum frame length supported by the adapter: **512**, **1024**, or **2048**. The default is **2048**.
- **Connection Option:** This setting defines the type of connection:
 - **Point To Point**
 - **Loop Preferred, Otherwise Point To Point (default)**
- **Data Rate:** This setting determines the Fibre Channel data rate, which is one of the following: **Auto**, **4 Gb/s**, **8 Gb/s** and **16 Gb/s**. The default is **Auto**.
- **Spin Up Delay:** When this option is enabled, the BIOS code waits up to 5 minutes to discover the first drive, which allows time for the BIOS code to become operational.

To exit the Edit Adapter Settings screen, select **Back to Main Menu**.

Advanced Settings

The Advanced Settings screen (Figure 5) allows you to configure the advanced settings of the currently selected adapter.

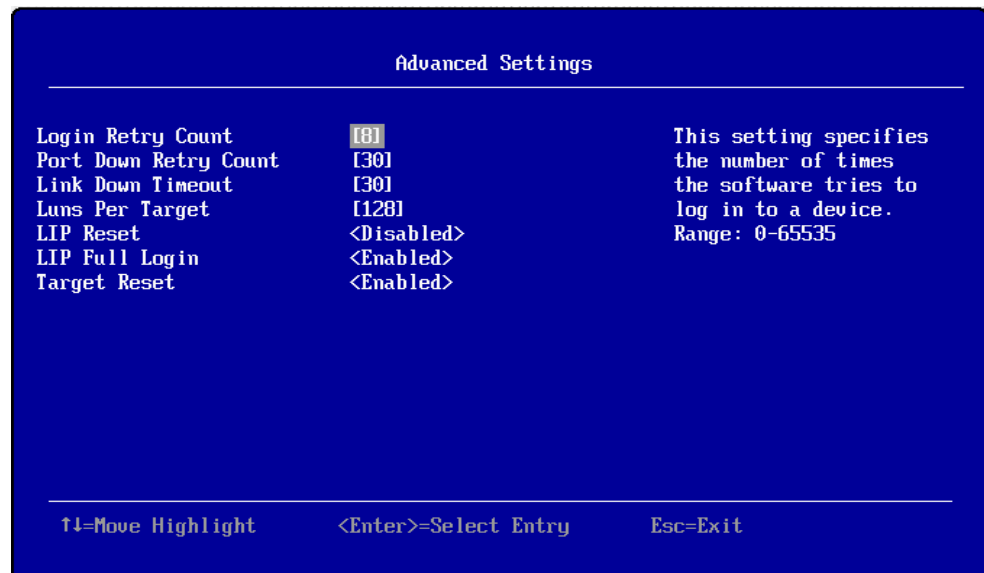


Figure 5. Advanced Settings screen of EFI

The settings on this screen include the following:

- **Login Retry Count:** This setting specifies the number of times the software tries to log into a device. The default is **0**.
- **Port Down Retry Count:** This setting specifies the number of seconds the software retries a command to a port returning port down status. The default is **30**.
- **Link Down Timeout:** This setting specifies the number of seconds the software waits for a link to come up. The default is **30**.
- **Luns Per Target:** This setting specifies the number of LUNs per target. Multiple LUN support is typically used for RAID boxes that use LUNs to map drives. The default is **128**.
- **LIP Reset:** This setting determines the type of LIP reset that is used when the operating system initiates a bus reset routine. When this is set to **Enabled**, the driver initiates a global LIP reset to clear the target device reservations. When this is set to **Disabled**, the driver initiates a global LIP reset with full login. The default is **Disabled**.
- **LIP Full Login:** This setting instructs the adapter to log in again to all ports after any LIP. The default is **Enabled**.
- **Target Reset:** This setting enables the drivers to issue a Target Reset command to all devices on the loop when a SCSI Bus Reset command is issued. The default is **Enabled**.

Note:

Adding or deleting a target/LUN requires a reboot for changes to take effect.

Boot Settings

The Boot Settings screen, shown in Figure 6, lets you edit the boot device settings.



Figure 6. Boot Settings screen of EFI

The settings on the Boot Settings screen include the following:

- **Selective Login:** Specifies that the driver is to use the WWN database as a list of devices that the adapter is permitted to log in. Enable this option to limit the adapter device discovery to devices matching those in the WWN database. The default is **Disabled**.
- **Selective LUN Login:** Used with Selective Login, which logs in only those devices in the adapter WWN database. If this option is not enabled, all LUNs present on any logged in device will be presented to EFI. If this option is enabled, only the LUN specified in the WWN database associated with the device will be logged into. This eliminates scanning and presenting a large number of LUNs to EFI when only one is desired. The default is **Disabled**.
- **World Login:** Used to force a World Login. This option will override all of the other login methods. If this option is enabled, the adapter will log in to all connected devices. The default is **Disabled**.
- **Adapter Driver:** Enables the UEFI driver and the BIOS. The default is **Disabled**.

WWN Database

The WWN Database screen (Figure 7) displays WWPNs and LUNs for the various drives. Type the WWPNs and LUNs in the corresponding fields.

WWN Database		
Drive 0 WJPN	[0]	Selective Login WJPN.
Drive 0 LUN	[0]	
Drive 1 WJPN	[0]	
Drive 1 LUN	[0]	
Drive 2 WJPN	[0]	
Drive 2 LUN	[0]	
Drive 3 WJPN	[0]	
Drive 3 LUN	[0]	

↑↓=Move Highlight <Enter>=Select Entry Esc=Exit

Figure 7. WWN Database screen of EFI

Adapter Information

The Adapter Information screen displays adapter information, as shown in Figure 8. This screen is read-only; there are no user-configurable settings on this screen.

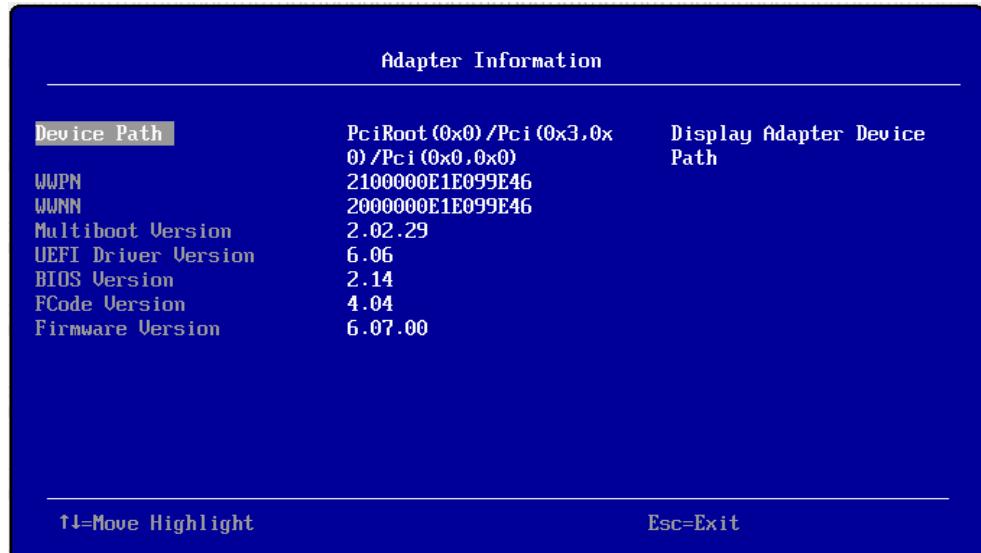


Figure 8. Adapter Information screen of EFI

The Adapter Information screen displays the following information:

- Advanced Path
- Adapter WWPN
- Adapter WWNN
- Adapter multiboot version
- Adapter UEFI Driver version
- Adapter BIOS Driver version
- Adapter FCode Driver version
- Adapter Firmware version

Installing device drivers

For information on obtaining and updating to the latest version of adapter firmware and device drivers, refer to Chapter 3, "Updating firmware and device drivers" on page 21.

Managing the adapter using the QConvergeConsole application

This section provides an overview of the QConvergeConsole® (QCC®) application that can be used by advanced users to customize the configuration of the adapter when it is installed in a compute node. For more detailed information, see the QCC application online help.

Overview of QConvergeConsole

The QCC application is used to configure a SAN environment made up of Fibre Channel host bus adapters (HBAs). It is a network-capable application that can connect to and configure remote systems, enabling centralized management and configuration of an entire SAN containing HBA components, storage devices, and host systems.

You can use the QCC application to manage and control one or more adapters that are installed on local or remote systems. The QCC application is used, along with problem determination procedures (PDPs), on new or existing installations to help diagnose Fibre Channel subsystem problems in adapters, controllers, and devices that are attached to the Fibre Channel fabric or loop.

You can also perform the following operations using the QCC application to configure devices in your system:

- **Disable (unconfigure) a device on a host bus adapter**

When a device is set as unconfigured, it is not recognized by the HBA and is not accessible to the HBA on that system.

- **Enable a device**

This operation adds a device and makes it accessible to the HBA on that system.

- **Designate a path as an alternate or preferred path**

When a device is accessible from more than one adapter in the same system, you can assign one path as the preferred path and the other path as an alternate path. If the preferred path fails, the system switches to the alternate path to make sure that the transfer of data is not interrupted.

Installation and system requirements

Make sure that you are using the latest version of the QCC application for the adapter. Go to <http://driverdownloads.qlogic.com> for the latest information about the QCC application. The latest instructions and system requirements are in the documentation that comes with the application.

Features

The QConvergeConsole application has the following features:

- **Unified adapter management.** QCC provides a browser-based GUI that lets you monitor, configure, and manage your IBM FC5172 Fibre Channel adapters (as well as QLogic® adapters with Fibre Channel, FCoE, Ethernet networking [NIC], and iSCSI networking protocols) from a single console.
- **Virtualization.** QCC provides configuration pages on selected Fibre Channel ports that let you create multiple virtual ports from a single physical adapter.
- **Asset management.** QCC allows you to connect to and disconnect from local and remote hosts. It also provides information about connected hosts and their attached IBM FC5172 adapters with connected storage devices.
- **Configuration management.** QCC allows you to configure local and remote systems. With QCC, you can configure IBM FC5172 adapters and connected devices. It also lets you update adapter parameters, firmware, boot code, and drivers.

- **Statistics.** QCC provides statistics for each host and adapter port. These statistics can be collected automatically or on request. They can be reset at any time. In addition, you can export the statistics to a comma separated values (CSV) file that can be imported into a spreadsheet application.
- **Reports.** QCC provides a report facility that lets you generate reports, which you can use to view lists of all SAN assets: adapters, devices, and LUNs. After generating reports, you can view them and save them to a variety of file formats.
- **E-mail notifications.** QCC can automatically send notifications with a copy of the current host configuration to an e-mail distribution list, thus enabling the information to be opened and analyzed from other locations.
- **Wizards.** QCC provides some easy-to-use wizards that walk you through Flash and driver parameter file updates on Fibre Channel and Converged Network Adapters.

Utilities tab

Using the Utilities tab in the main window of the QCC application (Figure 9), you can update adapter firmware and perform adapter-level configurations on a host-connected adapter.

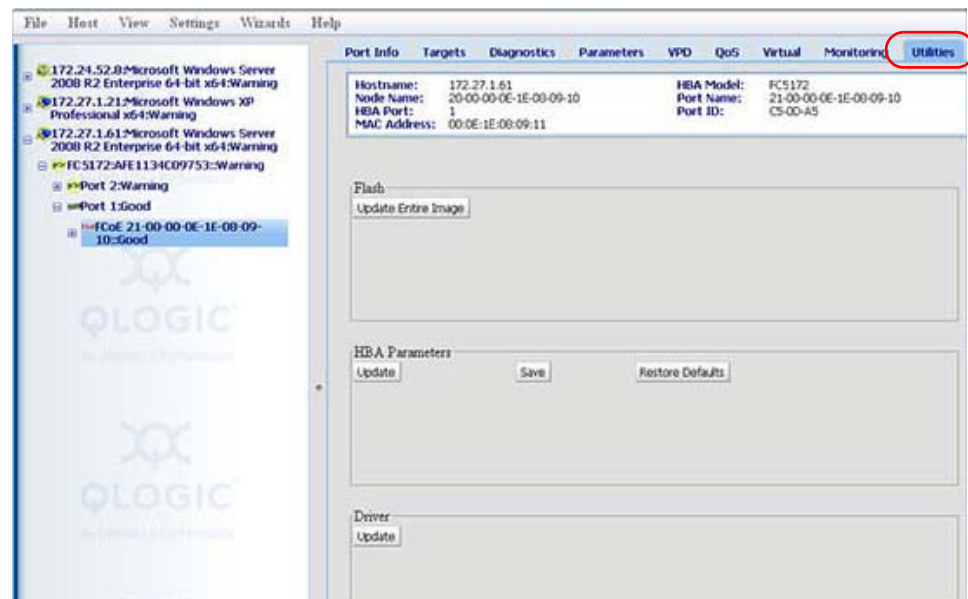


Figure 9. QConvergeConsole Utilities tab

Update Flash

To update the Flash using a Flash-boot firmware .bin file that is saved on hard disk, click **Update Entire Image** in the Utilities tab of the QCC application, and then follow the prompts to navigate to and select the file, and begin the update. For information on obtaining the latest version of adapter firmware, refer to Chapter 3, “Updating firmware and device drivers” on page 21.

Chapter 3. Updating firmware and device drivers

This chapter explains how to check if the adapter's firmware needs to be upgraded, and how to perform the upgrade if necessary.

Important:

Installing the wrong firmware or device-driver update might cause the network adapter or switch to malfunction. Before you install a firmware or device-driver update, read any readme and change history files that are provided with the downloaded update. These files contain important information about the update and the procedure for installing the update, including any special procedure for updating from an early firmware or device-driver version to the latest version.

Determining the adapter firmware version

Using the QCC application, follow these steps to find out the firmware version that is installed in the adapter:

1. In the QCC system tree, click the adapter node.
2. Click the **HBA Info** tab. The **HBA Info** page displays as shown in Figure 10.

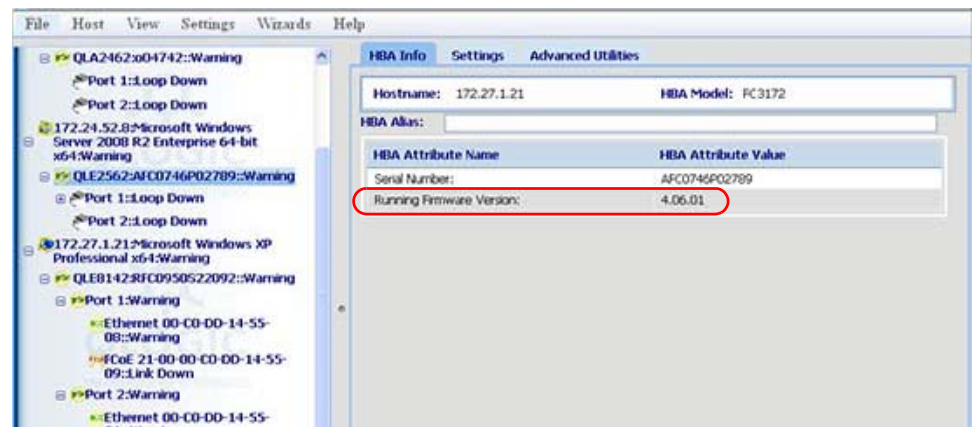


Figure 10. Firmware Version on HBA Info Page of QConvergeConsole Utility

3. The firmware version number is displayed next to **Firmware Version**.

If the firmware is not up to date, upgrade the firmware. Refer to “Updating firmware and device drivers” on page 22.

Updating firmware and device drivers

IBM periodically makes I/O adapter firmware and device driver updates available for the compute node. Provisioning is the set of actions that update the firmware and device drivers and install the operating system. Several tools are available to help you update the firmware and device drivers in the provisioning process.

- IBM Flex System Manager Update Manager

IBM Flex System Manager Update Manager acquires, installs, and manages firmware and device driver updates and monitors your compute nodes to ensure that they remain current. For more information about using the IBM Flex System Manager management software to update firmware and device drivers for the chassis components, see the *IBM Flex System Manager Installation and Service Guide*. For the latest version, go to the IBM Flex System Information Center at <http://publib.boulder.ibm.com/infocenter/flexsys/information/index.jsp>.

- UpdateXpress System Packs

UpdateXpress System Packs (UXSP) contain an integration-tested bundle of online, firmware and device drivers for your compute node. The IBM ToolsCenter Bootable Media Creator uses UpdateXpress System Packs to update the firmware and device drivers.

Typically, use UpdateXpress System Packs to update firmware and device drivers for a compute node that has previously been provisioned. For more information about UpdateXpress System Packs, go to <http://www.ibm.com/support/entry/portal/docdisplay?Indocid=SERV-XPRESS>.

- IBM ToolsCenter Bootable Media Creator

You can use IBM ToolsCenter Bootable Media Creator to create bootable media that is suitable for applying firmware updates and running preboot diagnostics. Using IBM ToolsCenter Bootable Media Creator, you can create a single bootable image on supported media (such as CD, DVD, ISO image, USB Flash drive, or set of PXE files) that bundles multiple IBM Flex System tools and updates from UpdateXpress System Packs, which contain Windows and Linux[®] firmware updates.

Typically, use IBM ToolsCenter Bootable Media Creator for the initial setup of a compute node. For more information about the IBM Bootable Media Creator, see the IBM Bootable Media Creator website.

To provision a compute node with updated firmware and device drivers by using IBM ToolsCenter Bootable Media Creator, complete the following steps:

1. Download IBM ToolsCenter Bootable Media Creator to a computer that is connected over the management network to the IBM Flex System Manager management software that is managing the compute node.
2. Create the bootable media of firmware and device driver updates.
3. Connect to the IBM Flex System Manager management software that is managing the IBM Flex System chassis in which the compute node is installed.
4. From IBM Flex System Manager Chassis Manager, select the compute node. In the Actions column, select Remote Control.

Note:

The user ID that you use to log in to IBM Flex System Manager management software must have sufficient user permissions to manage the compute node.

5. From the Remote Control session, mount the bootable media (using Remote Media).
6. Start the compute node to boot the media and install the updates.

Important:

To avoid problems and to maintain system performance, always make sure that the I/O adapter firmware and device drivers are consistent in all compute nodes in the IBM Flex System chassis.

Chapter 4. Solving problems

This chapter provides information for identifying and solving problems.

Fault indications

The FC5172 adapter provides the fault information defined in Table 9:

Table 9. Fault LED indications

LED	Indication
Amber	Various conditions including I2C access problem and Flash access failure (VPD update failure)

Parts listing

The following replaceable components are available for the IBM Flex System network devices.

Replaceable components are of three types:

- **Tier 1 customer replaceable unit (CRU):** Replacement of Tier 1 CRUs is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation.
- **Tier 2 customer replaceable unit (CRU):** You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service that is designated for your server.
- **Field replaceable unit (FRU):** FRUs must be installed only by trained service technicians.

For information about the terms of the warranty, see the *Warranty Information* document.

The replaceable components in the following table are Tier 1 CRUs. If other components require replacement, see the documentation that came with those devices for instructions.

Table 10 lists the replaceable components.

Table 10. Replaceable components

Description	CRU part number (Tier 1)
IBM Flex System FC5172 2-port 16 Gb FC Adapter	69Y1945

Appendix A. Getting help and technical assistance

If you need help, service, or technical assistance or just want more information about IBM products, you will find a wide variety of sources available from IBM to assist you. This section contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your system, and whom to call for service, if it is necessary.

Before you call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system and any optional devices are turned on.
- Use the troubleshooting information in your system documentation, and use the diagnostic tools that come with your system.
- Go to the IBM support website at <http://www.ibm.com/supportportal/> to check for technical information, hints, and tips, download the latest firmware, drivers, and driver firmware, or to submit a request for information.

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the documentation that is provided with your IBM product. The documentation that comes with IBM systems also describes the diagnostic tests that you can perform. Most systems, operating systems, and programs come with documentation that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the documentation for the operating system or program.

Using the documentation

Information about your IBM system and preinstalled software, if any, or optional device is available in the documentation that comes with the product. That documentation can include printed documents, online documents, readme files, and help files. See the troubleshooting information in your system documentation for instructions for using the diagnostic programs. The troubleshooting information or the diagnostic programs might tell you that you need additional or updated device drivers or other software. IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. To access these pages, go to <http://www.ibm.com/supportportal/> and follow the instructions.

Getting help and information from the World Wide Web

On the World Wide Web, the IBM website has up-to-date information about IBM systems, optional devices, services, and support. You can find service information for IBM systems and optional devices at <http://www.ibm.com/supportportal/>.

Software service and support

Through IBM Support Line, you can get telephone assistance, for a fee, with usage, configuration, and software problems. For information about which products are supported by Support Line in your country or region, see <http://www.ibm.com/services/supline/products/>.

For more information about Support Line and other IBM services, see <http://www.ibm.com/services/>, or see <http://www.ibm.com/planetwide/> for support telephone numbers. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

Hardware service and support

You can receive hardware service through your IBM reseller or IBM Services. To locate a reseller authorized by IBM to provide warranty service, go to <http://www.ibm.com/partnerworld/> and click **Find Business Partners** on the right side of the page. For IBM support telephone numbers, see <http://www.ibm.com/planetwide/>. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

In the U.S. and Canada, hardware service and support is available 24 hours a day, 7 days a week. In the U.K., these services are available Monday through Friday, from 9 a.m. to 6 p.m.

IBM Taiwan product service

台灣 IBM 產品服務聯絡方式：
台灣國際商業機器股份有限公司
台北市松仁路7號3樓
電話：0800-016-888

IBM Taiwan product service contact information:

IBM Taiwan Corporation
3F, No 7, Song Ren Rd.
Taipei, Taiwan
Telephone: 0800-016-888

Appendix B. Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

*IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.*

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product, and use of those websites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Trademarks

IBM, the IBM logo, and [ibm.com](http://www.ibm.com) are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at "Copyright and trademark information" at <http://www.ibm.com/legal/copytrade.shtml>

Adobe and PostScript are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Cell Broadband Engine is a trademark of Sony Computer Entertainment, Inc., in the United States, other countries, or both and is used under license therefrom.

Intel, Intel Xeon, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Important notes

When referring to hard disk drive capacity or communications volume, MB stands for 1 000 000 bytes, and GB stands for 1 000 000 000 bytes. Total user-accessible capacity can vary depending on operating environments.

IBM makes no representation or warranties regarding non-IBM products and services that are ServerProven[®], including but not limited to the implied warranties of merchantability and fitness for a particular purpose. These products are offered and warranted solely by third parties.

IBM makes no representations or warranties with respect to non-IBM products. Support (if any) for the non-IBM products is provided by the third party, not IBM.

Some software might differ from its retail version (if available) and might not include user manuals or all program functionality.

This product is not intended to be connected directly or indirectly by any means whatsoever to interfaces of public telecommunications networks, nor is it intended to be used in a public services network.

Electronic emission notices

Federal Communications Commission (FCC) statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Class A emission compliance statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Australia and New Zealand Class A statement

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

European Union EMC Directive conformance statement

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a nonrecommended modification of the product, including the fitting of non-IBM option cards.

Attention: This is an EN 55022 Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Responsible manufacturer:

International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
914-499-1900

European Community contact:

IBM Deutschland GmbH
IBM Technical Regulations, Department M372
IBM-Allee 1,71139 Ehningen, Germany
Telephone: +49 7032 15 2941
Email: lugi@de.ibm.com

Germany Class A statement

Deutschsprachiger EU Hinweis:

Hinweis für Geräte der Klasse A EU-Richtlinie zur Elektromagnetischen Verträglichkeit

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse A ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der IBM gesteckt/eingebaut werden.

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden: "Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen."

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse A

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Einhaltung der EMV Vorschriften ist der Hersteller:

International Business Machines Corp.
New Orchard Road
Armonk, New York 10504
914-499-1900

Der verantwortliche Ansprechpartner des Herstellers in der EU ist:

IBM Deutschland GmbH
Technical Regulations, Abteilung M372
IBM-Allee 1, 71139 Ehningen, Germany
Telephone: +49 7032 15-2941
E-mail: lugi@de.ibm.com

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

Japan VCCI Class A statement

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI). If this equipment is used in a domestic environment, radio interference may occur, in which case the user may be required to take corrective actions.

Korea Communications Commission (KCC) statement

이 기기는 업무용(A급)으로 전자파적합기기로
서 판매자 또는 사용자는 이 점을 주의하시기
바라며, 가정외의 지역에서 사용하는 것을 목
적으로 합니다.

This is electromagnetic wave compatibility equipment
for business (Type A). Sellers and users need to pay
attention to it. This is for any areas other than home.

Russia Electromagnetic Interference (EMI) Class A statement

ВНИМАНИЕ! Настоящее изделие относится к классу А.
В жилых помещениях оно может создавать радиопомехи, для
снижения которых необходимы дополнительные меры

People's Republic of China Class A electronic emission statement

中华人民共和国“A类”警告声明

声明

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，
可能需要用户对干扰采取切实可行的措施。

Taiwan Class A compliance statement

警告使用者：
這是甲類的資訊產品，在
居住的環境中使用時，可
能會造成射頻干擾，在這
種情況下，使用者會被要
求採取某些適當的對策。

Index

A

- accessing raw NVRAM data 10
- adapter
 - advanced settings 10, 15
 - configuring 6, 7
 - driver 17
 - information 18
 - installing 5, 6
 - settings 9, 14
- assistance, getting 27

B

- boot settings 9, 16
 - adapter driver 17
 - LUN login 17
 - selective login 17
 - world login 17

C

- configuration tools 6
- connection options 8, 15

D

- data rate 15
- database, WWN 17
- default settings 10
- device drivers
 - installing 18
 - updating 21
- documentation 1
 - CD 1
 - included 1
 - related 1

E

- EFI 12
- enable interrupt 10
- exit *Fast!UTIL* 12

F

- Fast!UTIL* 6
 - configuring adapter 7
 - exit 12
 - starting 6
- FC tape 15
- features, Fibre Channel adapter 3
- Fibre Channel
 - disk utility 11
 - overview 2
- firmware
 - updating 21
 - version 21
- Flash update 20
- frame size 8, 15

H

- handling static-sensitive devices 5
- hard loop ID 8, 15
- hardware service and support 28
- HBA Info page, QConvergeConsole 21
- help, getting 27
- host adapter BIOS 8

I

- installation guidelines 5
- installing
 - adapter 5, 6
 - device drivers 18
- interrupt delay timer 10

L

- link down timeout 10, 16
- LIP full login 10, 16
- LIP reset 10, 16
- login retry count 10, 16
- loop reset delay 8, 15
- loopback data test 12
- LUN login 17
- LUNs per target 10, 16

N

notices 29
notices and statements 2

O

operation mode 10
overview, Fibre Channel 2

P

parts listing 25
port down retry count 10, 16
problems, solving 25

Q

QConvergeConsole
 features 19
 HBA Info 21
 installation and system requirements 19
 overview 19
 update Flash 20
 utilities 20

R

raw NVRAM data 10
restore default settings 10

S

scan for Fibre Channel devices 11
selective login 17
settings, adapter 9
specifications, Fibre Channel adapter 3
spin up delay 8, 15

T

target reset 10, 16
telephone numbers 28
test, loopback 12

U

updating
 device drivers 21
 firmware 21
 Flash 20
utilities 20

V

version, firmware 21

W

world login 17
WWN database 17



Part Number: 47C9162

Printed in USA

(1P) P/N: 47C9162