User's Guide
QConvergeConsole CLI

2400, 2500, 3200, 8100, 8200 Series

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Document Revision History	
Revision A, December 13, 2010	
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Changes	**Sections Affected**
Deleted Windows Server 2003 from the list of supported operating systems.	"Operating System Requirements" on page 1-2
Updating procedure for downloading QCC CLI	"Downloading QConvergeConsole CLI" on page 2-1
Added a note explaining that configuration port settings and values differ for Linux/Solaris.	"-iset (Display Configured Port Settings)" on page 4-9
Deleted reference to -svmtool.	"Command Format" on page 4-1
Removed section for -svmtool.	Former section "-svmtool" in chapter 4
Updated supported adapters to QLE81*xx* and QLE82*xx.*	"-cna (FCoE Utilities Menu for QLE81xx and QLE82xx Adapters)" on page 5-7
Removed example of -cna command saving MPI configuration table to a file.	"-cna (FCoE Utilities Menu for QLE81xx and QLE82xx Adapters)" on page 5-7
Added "all" to -e (view | info) command to view the current boot device selection.	"-e (Boot Device View | Select | Disable)" on page 5-9
Added a note explaining that the -fg option is not supported on Linux/Solaris.	"-fg (Show Driver Settings)" on page 5-12
Added chapter for NPAR noninteractive mode	Chapter 7 NIC Partitioning (NPAR) Noninteractive Commands
Added chapter for NPAR interactive mode	Chapter 11 NIC Partitioning (NPAR) Interactive Commands
Added appendix with overview of NPAR	Appendix A NIC Partitioning (NPAR) Overview

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Preface

This guide describes QConvergeConsole® CLI, which is used to configure and manage QLogic Fibre Channel adapters, Intelligent Ethernet adapters, and Converged Network Adapters within SANs.

What's in this Guide

This guide contains the basic information you need to get started with QConvergeConsole CLI.

This preface explains the QConvergeConsole CLI help system, describes the typographic conventions used in this guide, lists related documents, specifies the intended audience, refers you to the QLogic license agreements, and provides technical support and contact information.

The remainder of the user's guide is organized into the following chapters:

- Chapter 1 System Requirements lists the hardware, software requirements, and operating system requirements needed for the successful operation of the QConvergeConsole CLI.

- Chapter 2 Installing and Uninstalling QConvergeConsole CLI describes how to install and uninstall the utility.

- Chapter 3 Getting Started describes how to start QConvergeConsole CLI on Windows and Linux platforms. This chapter also describes how to view detailed information about command parameters and options.

- Chapter 4 NIC Noninteractive Commands describes the noninteractive NIC command syntax and parameters.

- Chapter 5 Fibre Channel Noninteractive Commands describes the noninteractive Fibre Channel command syntax and parameters.

- Chapter 6 iSCSI Noninteractive Commands describes the noninteractive iSCSI command syntax and parameters.

- Chapter 7 NIC Partitioning (NPAR) Noninteractive Commands describes the noninteractive NIC Partitioning (NPAR) command syntax and parameters.

- Chapter 8 NIC Interactive Commands contains a description of the QConvergeConsole CLI NIC interactive mode menus.

- Chapter 9 Fibre Channel Interactive Commands contains a description of the QConvergeConsole CLI Fibre Channel interactive mode menus.

- **Chapter 10 Converged Network Adapter Interactive Commands** contains a description of the QConvergeConsole CLI Converged Network Adapter interactive mode menus for the NIC, iSCSI, and Fibre Channel functions.

- **Chapter 11 NIC Partitioning (NPAR) Interactive Commands** contains information on setting up NIC Partitioning (NPAR) using the interactive mode menus of the QConvergeConsole CLI.

- **Appendix A NIC Partitioning (NPAR) Overview** provides an overview of NIC partitioning.

Following these chapters is a glossary of terms.

What's in the Help System

The QConvergeConsole CLI help system (`qaucli -h`) contains a condensed version of the NIC, Fibre Channel, iSCSI, and NPAR noninteractive commands described in chapters 4 through 7.

Intended Audience

This guide is for system administrators who are responsible for installing, configuring, and managing QLogic adapters using QConvergeConsole CLI.

Related Materials

For additional help installing or using QConvergeConsole CLI, refer to the following related documents posted on the QLogic Web site http://driverdownloads.qlogic.com:

- *QConvergeConsole CLI Readme*
For information about the QConvergeConsole GUI utility, refer to the following document:

- *QConvergeConsole User's Guide*

Documentation Conventions

This guide uses the following documentation conventions:

- **NOTE:** provides additional information.

- *CAUTION!* indicates the presence of a hazard that has the potential of causing damage to data or equipment.

- *WARNING!!* indicates the presence of a hazard that has the potential of causing personal injury.

■ Text in blue font indicates a hyperlink (jump) to a figure, table, or section in this guide, and links to Web sites are shown in underlined blue. For example:

❑ Table 9-2 lists problems related to the user interface and remote agent.
❑ See "Installation Checklist" on page 3-6.
❑ For more information, visit www.qlogic.com.

■ Text in **bold** font indicates user interface elements such as a menu items, buttons, check boxes, or column headings. For example:

❑ Click the **Start** button, point to **Programs**, point to **Accessories**, and then click **Command Prompt**.

❑ Under **Notification Options**, select the **Warning Alarms** check box.

■ Text in `Courier` font indicates a file name, directory path, or command line text. For example:

❑ To return to the root directory from anywhere in the file structure: Type `cd /root` and press ENTER.

❑ Enter the following command: `sh ./install.bin`

■ Key names and key strokes are indicated with UPPERCASE:

❑ Press CTRL+P.
❑ Press the UP ARROW key.

■ Text in *italics* indicates terms, emphasis, variables, or document titles. For example:

❑ For a complete listing of license agreements, refer to the *QLogic Software End User License Agreement*.

❑ What are *shortcut keys*?

❑ To enter the date type *mm/dd/yyyy* (where *mm* is the month, *dd* is the day, and *yyyy* is the year).

■ Topic titles between quotation marks identify related topics either within this manual or in the online help, which is also referred to as *the help system* throughout this document.

License Agreements

Refer to the *QLogic Software End User License Agreement* for a complete listing of all license agreements affecting this product.

Technical Support

Customers should contact their authorized maintenance provider for technical support of their QLogic switch products. QLogic-direct customers may contact QLogic Technical Support; others will be redirected to their authorized maintenance provider.

For details about available service plans, or for information about renewing and extending your service, visit the Service Program Web page at http://www.qlogic.com/services.

Training

QLogic offers training for technical professionals for all iSCSI, InfiniBand, and Fibre Channel products. From the main QLogic web page at www.qlogic.com, click the **Support** tab at the top, and then click **Training and Certification** on the left. The QLogic Global Training portal offers online courses, certification exams, and scheduling of in-person training.

Technical Certification courses include installation, maintenance, and troubleshooting QLogic products. Upon demonstrating knowledge using live equipment, QLogic awards a certificate identifying the student as a certified professional. You can reach the training professionals at QLogic by e-mail at training@qlogic.com.

Contact Information

QLogic Technical Support for products under warranty is available during local standard working hours excluding QLogic Observed Holidays. For customers with extended service, consult your plan for available hours. For Support phone numbers, see the Contact Support link at http://support.qlogic.com.

Support Headquarters	QLogic Corporation 4601 Dean Lakes Blvd. Shakopee, MN 55379 USA
QLogic Web Site	www.qlogic.com
Technical Support Web Site	http://support.qlogic.com
Technical Support E-mail	support@qlogic.com
Technical Training E-mail	training@qlogic.com

Knowledge Database

The QLogic knowledge database is an extensive collection of QLogic product information that you can search for specific solutions. We are constantly adding to the collection of information in our database to provide answers to your most urgent questions. Access the database from the QLogic Support Center: http://support.qlogic.com.

1 System Requirements

QConvergeConsole CLI is an management utility that centralizes management and configuration of QLogic adapters within the entire network (LAN and SAN). For optimum performance, QConvergeConsole CLI requires the hardware, software, and operating systems listed in this chapter:

- Hardware Requirements
- Software Requirements
- Operating System Requirements
- Supported QLogic Adapters

Hardware Requirements

The minimum hardware requirements for the workstation server are as follows:

- **Server.** Single-processor or multiprocessor server or workstation. See "Operating System Requirements" on page 1-2 for a list of operating systems.
- **Processor.** Pentium® II processor, 300 MHz
- **Memory.** 64MB of physical RAM to run QConvergeConsole CLI
- **Hard disk space.** About 26MB disk space.

The minimum hardware requirements for the adapter are as follows:

- **Adapters.** One or more of the QLogic adapters listed under "Supported QLogic Adapters" on page 1-2.

The minimum requirements for a SAN environment are as follows:

- **Storage.** Fibre Channel or iSCSI devices, such as disks and RAID subsystems. QConvergeConsole CLI supports most Fibre Channel and iSCSI devices. See the *QLogic Storage Networking Interoperability Guide*, which you can download from the following QLogic Web page: http://connect.qlogic.com/interopguide/info.asp

> **NOTE:**
>> Tape devices are shown as part of the configuration, but are not fully supported. Only persistent binding is supported.

Software Requirements

The software requirements for the server on which your adapter is physically installed are as follows:

- QLogic adapter drivers for your operating system

> **NOTE:**
>> Refer to the QLogic Web site for QLogic adapter drivers and agents: http://driverdownloads.qlogic.com.

- Administrative privileges to perform management functions

Operating System Requirements

QConvergeConsole CLI runs on the following platforms:

- Windows Server 2008
- Red Hat® Linux® Advance Server/Enterprise Server
- Novell SUSE® Linux Enterprise Server (SLES)

> **NOTE:**
>> For the supported operating system versions, refer to the Readme where QConvergeConsole CLI is posted on the QLogic Web site: http://driverdownloads.qlogic.com.

Supported QLogic Adapters

The supported QLogic-branded adapters are as follows. For support of OEM-branded adapters, please contact your OEM.

- 2400 and 2500 Series Fibre Channel Adapters
- 3200 Series Intelligent Ethernet Adapters
- 8100 and 8200 Series Converged Network Adapters

NOTE:

For information about QLogic adapters, refer to the QLogic Web site at
http://www.qlogic.com/Products/adapters.

2 Installing and Uninstalling QConvergeConsole CLI

This chapter describes how to download, install, and uninstall QConvergeConsole CLI.

- Downloading QConvergeConsole CLI
- "Installing QConvergeConsole CLI" on page 2-2
- "Uninstalling QConvergeConsole CLI" on page 2-4

NOTE:

QConvergeConsole CLI is designed to configure QLogic adapters on the local machine (where it is installed). It cannot configure adapters on remote machines.

Downloading QConvergeConsole CLI

To download QConvergeConsole CLI from the QLogic Web site:

1. Go to the QLogic Driver Downloads/Documentation page at http://driverdownloads.qlogic.com.

2. Click **QLogic Products**.

3. Click **Guided Search**.

   A window opens prompting you to Enter your search criteria.

4. Provide the information necessary:

   a. In the **Select a Product Type** menu, select **Adapters**.

   b. In the **Select by Model or by OS**, select **by Model**.

   c. In the **Select the Product Technology** menu, select either **Converged Network Adapters**, **Fibre Channel Adapters**, or **Intelligent Ethernet Adapters**, as appropriate.

   d. In the **Select the Model** menu, select your QLogic Adapter.

   e. In the **Select the Desired Item** menu, select **Management Tools**.

   f.   Click **Search**.

5.   Scroll through the list that appears and select the QConvergeConsole version for your operating system.

6.   Click **Download Now**.

7.   On the File Download dialog box, click **Save**.

8.   On the Save As dialog box. specify a folder or directory on the system, and then click **Save** to download the file to that location. The package file has one of the following formats, depending on the operating system:

   ■   Windows:

   ```
   QConvergeConsoleCLI-AA.BB.CC-DD.EE_win_<Subtype>.msi
   ```

   ■   Linux:

   ```
   QConvergeConsoleCLI-AA.BB.CC-DD.<Subtype>.rpm
   ```

9.   In the **Support Tools** table, select and download the *Readme* file for the appropriate version of QConvergeConsole CLI.

Installing QConvergeConsole CLI

The installation procedures differ depending on the operating system:

■   Installing QConvergeConsole CLI in a Windows Environment

■   Installing QConvergeConsole CLI in a Linux Environment

Installing QConvergeConsole CLI in a Windows Environment

You can install QConvergeConsole CLI from the command prompt using the Microsoft® Windows Installer (MSI). Use one of the following methods:

■   Standard Windows Interactive (CLI) Installation

■   Quiet or Unattended Windows Installation

■   Passive Windows Installation

■   Overwrite Previous Windows Installations

NOTE:

You can also configure the installation using MSI commands. To see a summary of MSI commands, at the command prompt, issue the `msiexec` command.

To obtain more information about MSI, visit the Microsoft Web site.

Standard Windows Interactive (CLI) Installation

To begin a standard installation of QConvergeConsole CLI on a Microsoft Windows operating system, at a command line, issue one of the following commands:

QConvergeConsoleCLI-<*version*>_win.msi

or

QConvergeConsoleCLI-<*version*>_win_x64.msi

Where <*version*> is the version number.

The default directory for QConvergeConsole CLI utility is:

`Program files\QLogic Corporation\QConvergeConsoleCLI`

If you want to install the QConvergeConsole CLI in a different directory, enter it in the command line. For example:

QConvergeConsoleCLI-<*version*>_win.msi installdir=<*directory*>

or

QConvergeConsoleCLI-<*version*>_win_x64.msi installdir=<*directory*>

Where <*directory*> is the full path name of the installation directory.

Quiet or Unattended Windows Installation

Issue the following command for a quiet (silent) installation using default values. For example, the following command installs silently using defaults and does not show any errors:

QCCCLI.msi /q

Passive Windows Installation

Issue the following command for a passive installation using default values. For example:

QCCCLI.msi /passive

The preceding command installs with minimum interaction, showing only the progress bar and any errors.

Overwrite Previous Windows Installations

Issue the following for an installation that overwrites any previous installations *without* asking for confirmation:

QCCCLI.msi /i forceinstall=true

Installing QConvergeConsole CLI in a Linux Environment

To install QConvergeConsole CLI on a Linux platform, issue the following from the command form:

```
rpm -ivh QConvergeConsoleCLI-AA.BB.CC-DD.Subtype.rpm
```

Linux puts the files in the following directory:

```
/opt/QLogic_Corporation/QConvergeConsoleCLI
```

Red Hat Linux also creates a soft link from the `/usr/local/bin` directory to the executable, `qaucli`. By default, the `/usr/local/bin` directory is in the execution path; you need not add it.

SUSE Linux and PowerPC® (PPC) do not put the `/usr/local/bin` directory in the execution path by default. You must add it.

Uninstalling QConvergeConsole CLI

To remove QConvergeConsole CLI from your system, follow the instructions for your operating system.

- Uninstalling QConvergeConsole CLI in a Windows Environment
- Uninstalling QConvergeConsole CLI in a Linux Environment

Uninstalling QConvergeConsole CLI in a Windows Environment

The Windows OS offers the following methods of uninstalling QConvergeConsole CLI:

- Start Menu Uninstall
- Control Panel Uninstall
- Command Line Uninstall

Start Menu Uninstall

To uninstall from the Windows Start menu:

1. Go to **Start**.

2. Point to **All Programs**, **QLogic Management Suite**, and then click **Uninstall QConvergeConsole CLI**.

Control Panel Uninstall

To uninstall from the Control Panel:

1. Go to **Start**, and then click **Control Panel**.

2. Double-click **Add/Remove Programs**.

3.   Select **QConvergeConsole CLI**.

4.   Click **Change/Remove**.

Command Line Uninstall

You can uninstall QConvergeConsole CLI from the command line. Select interactive, passive, or silent (quietly) uninstall:

To uninstall interactively from the command line:

Issue the following command from a command prompt:

```
qcccli.msi
```

To uninstall passively from the command line:

Issue the following command from a command prompt:

```
msiexec /x qcccli.msi
```

To uninstall quietly from the command line:

Issue the following command from a command prompt:

```
msiexec /q /x qcccli.msi
```

Uninstalling QConvergeConsole CLI in a Linux Environment

To uninstall QConvergeConsole CLI on a Red Hat and SUSE Linux and PPC operating systems, issue the following from a command prompt:

```
rpm -e QConvergeConsoleCLI-AA.BB.CC-DD
```

3 Getting Started

The QConvergeConsole CLI manages iSCSI, Ethernet, and Fibre Channel functions on QLogic Fibre Channel adapters, Intelligent Ethernet Adapters, and Converged Network Adapters. This chapter describes how to start the QConvergeConsole CLI using the noninteractive mode (command line interface) and the interactive mode (menu-driven interface).

Using Noninteractive Mode

Noninteractive mode is a command line interface that executes a command and its parameters, and then terminates. Use the noninteractive mode to run QConvergeConsole CLI from a script file or when you want to perform a single operation. This guide describes the noninteractive mode commands by function in the following chapters:

■ Chapter 4 NIC Noninteractive Commands

■ Chapter 5 Fibre Channel Noninteractive Commands

■ Chapter 6 iSCSI Noninteractive Commands

To start the noninteractive QConvergeConsole CLI in Windows[1] or Linux, open an operating system shell, and then type commands with command line switches. For specific command formats, refer to the chapter for the corresponding adapter function. For example, to discover iSCSI ports on a Converged Network Adapter, issue the following command:

```
qaucli -pr iscsi -i
```

QConvergeConsole CLI is case sensitive. In addition, file names in some operating systems are case sensitive; in this case, QConvergeConsole CLI is case sensitive for that specific file.

---

[1] For Windows 2008 or later, use administrator mode.

Using Interactive Mode

Interactive mode is a menu-driven interface that manages QLogic Ethernet adapters, QLogic Fibre Channel Adapters, and all functions of QLogic Converged Network Adapters, including NIC, Fibre Channel, and iSCSI. Although the QConvergeConsole CLI contains menus for all of these adapter types, for clarity, this guide describes the interface for each adapter type separately in the following chapters:

- Chapter 8 NIC Interactive Commands
- Chapter 9 Fibre Channel Interactive Commands
- Chapter 10 Converged Network Adapter Interactive Commands

Starting QConvergeConsole CLI in Windows

To start the QConvergeConsole CLI in interactive mode in Windows, do one of the following:

- Double-click the QConvergeConsole CLI icon on the desktop.
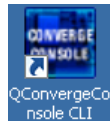
- Click **Start** and point to **All Programs**, **QLogic Management Suite**, and then click **QConvergeConsole CLI**.

- Open a command prompt in the installation directory (default is `C:\Program Files\QLogic Corporation\QConvergeConsoleCLI`), and then issue the following command:

  `qaucli`

Starting QConvergeConsole CLI in Linux

To start QConvergeConsole CLI in interactive mode in Linux, issue the following command:

`qaucli`

Main Menu

When you start QConvergeConsole CLI in interactive mode, the Main Menu appears as follows:

```
Main Menu

    1:  Adapter Information
    2:  Adapter Configuration
    3:  Adapter Updates
    4:  Adapter Diagnostics
    5:  Adapter Statistics
    6:  Refresh
    7:  Help
    8:  Exit

        Please Enter Selection:
```

Selecting an option from the Main Menu prompts you to choose an adapter type.

■   To manage an Intelligent Ethernet Adapter or a Converged Network Adapter, select the **Converged Network Adapter** option to open additional menus.

■   To manage a Fibre Channel Adapter, select the **Fibre Channel Adapter** option to open additional menus.

For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection:
```

Menu Navigation

From any menu, type:

■   **p** or **0** (zero) to return to the previous menu

■   **m** or **98** to return to the Main Menu

■   **ex** or **99** to end the QConvergeConsole CLI session

Getting Help

Help is available in interactive mode using option **7. Help**. Noninteractive mode provides help using the `-h` switch. For example, to list all of the available command line parameters, issue the following command:

```
qaucli -h
```

To list available online switches, issue the following commands for their respective adapter types:

```
qaucli -pr iscsi -h
qaucli -pr nic -h
qaucli -pr fc -h
```

To list available legacy switches, issue the following commands for their respective adapter types:

```
qaucli -pr -iscsi -h
qaucli -pr -nic -h
qaucli -pr -fc -h
```

4 NIC Noninteractive Commands

This chapter describes the noninteractive NIC command format and parameters of QConvergeConsole CLI.

NOTE:
To view the help, issue the `-h` command.

Command Format

Noninteractive mode format includes the following command:

```
qaucli -pr nic [optional parameters] <command option> [positional parameters]
```

or

```
qaucli -pr nic -switch [optional cna_port_instance]
```

Where *switch* is one of the following:

- -beacon (Enable/Disable Port Beacon)
- -c
- -cardreset
- -ch
- -d
- -ei
- -extloopback
- -flashsupport
- -g (Display General System Information)
- -h (Help), -?, ?
- -i (List All QLogic CNA Ports Detected)
- -icna (CNA Information)
- -idcbx (Display Port DCBX Information)
- -intloopback (Configure Test Parameters)
- -iset (Display Configured Port Settings)
- -link (Display Physical Link Status)

- -minidump (Firmware Mini Dump)
- -n (Change Port Alias Name)
- -nh (Change CNA Alias Name)
- -pinfo (Port Information)
- -ping (Ping Target)
- -rc
- -sreset (Reset Ethernet Statistics Counters)
- -statport (Display Ethernet Port Statistics)
- -sunreset (Undo Reset Ethernet Statistics Counters)
- -teamdel (Delete Team)
- -teaminfo (Display Team Information)
- -teamlist (Display Teams List)
- -teamnew (Configure New Team)
- -teamnew_portspreview
- -testflash
- -testhw
- -testinterrupt
- -testled
- -testlink
- -testregister
- -trans (Display Transceiver DMI Data)
- -updimages (Update Flash (Boot & Firmware Images))
- -updimages_viewver
- -v, -ver (Display Program Version Information)
- -vlanadd (Add VLAN to Port or Team)
- -vlanadd_preview
- -vlandel (Remove VLAN from Port or Team)
- -vlandel_preview
- -vlaninfo (Display VLAN Information)
- -vlanlist (Display VLAN List)
- -vpd (Display VPD Information)
- -vtcfgview
- -vtrestore (Restore VLAN & Teaming Configuration)
- -vtsave (Save VLAN & Teaming Configuration)
- -zvt (Display Teams List; Display VLANs List; Display VLAN Information)

NOTE:

- When you issue a command, QConvergeConsole CLI loads the adapter, executes the command, and then returns you to the command prompt.
- When optional parameter `[cna_port_inst]` is not present, the command action applies to all adapters detected by QConvergeConsole CLI.
- Not all switches are functional in this release.
- Ensure that you issue only one command at a time.

Command Summary

This section lists and describes each command line option in alphabetic order, followed by a command description.

-beacon
(Enable/Disable Port Beacon)

To toggle on and off the port beacon (LED), issue the `-beacon` command as follows:

> **-switch -beacon [*cna_port_inst*] <on:off>**

For example:

```
> qaucli -pr nic -beacon 2 on
Loading: 1. CNA . . .
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Successfully set Beacon to: Enabled
```

-c

To view the adapter port configuration, issue the `-c` command as follows:

> **qaucli -pr nic -c [*cna_port_inst*]**

For example:

```
> qaucli -pr nic -c 1

=== Displaying CNA Port config info for 1. CNA Port Index ===

Port_Alias                        :  None
Port_Physical_MAC_Alias           :  john
Port_LLA_MAC_Alias                :  paul
```

-cardreset

To activate changes made to Flash, issue the `-cardreset` command as follows:

> **qaucli -pr nic -cardreset [*cna_port_inst*]**

-ch

To view the adapter configuration, issue the `-ch` command as follows:

> **qaucli -pr nic -ch [*cna_port_inst*]**

For example:

```
> qaucli -pr nic -ch 1

=== Displaying CNA config info for 1. CNA Port Index ===

CNA_Alias                               :   CNA X54
```

-d

To generate XML discovery output, issue the `-d` command as follows:

```
> qaucli -pr nic -d <flash_file> [xml_output_file]
```

where `flash_file` is the Flash file and `xml_output_file` is the XML discovery output. If you omit `xml_output_file`, XML discovery output is written to `stdout.xml`.

-ei

To get error and exit code information for noninteractive mode, issue the `-ei` command as follows:

```
> qaucli -pr nic -ei
```

-extloopback

To configure external loopback test parameters before you run the test, issue the `-extloopback` command as follows:

```
> qaucli -pr nic -extloopback <cna_port_inst> <tests_num> <on_error>
```

Where `tests_num` specifies the number of tests to run (a value between 1 and 65,535) and `on_error` specifies the action to take if an error is encountered in the test (`0` = ignore the error; `1` = abort the test).

To determine `cna_port_inst`, run the following command:
```
> qaucli -nic -i
```

-flashsupport

This command lets you use the Flash Support Tool to manage the Flash memory. To use the Flash Support Tool, issue the `-flashsupport` command as follows:

```
> qaucli -pr nic -flashsupport [<option>]
```

Where `<option>` is one of the following options:

-d option:

To discover the Converged Network Adapters and generate an xml report, issue the following command:

```
> qaucli -pr nic -flashsupport -d <flash_file> [out_xml_file]
```

Where **<flash_file>** is the name of the flash file that will be used to update the adapter and **out_xml_file** is the name of the output xml file.

-u option:

To update the Flash and generate an xml report, issue the following command:

```
> qaucli -pr nic -flashsupport -u <flash_file>
  <input_xml_file> [out_xml_file]
```

Where **<flash_file>** is the name of the flash file that will be used to update the adapter, **input_xml_file** is the name of the input xml file, and **out_xml_file** is the name of the output xml file.

-asn option:

To activate an adapter with a specified serial number, issue the following command:

```
> qaucli -pr nic -flashsupport -asn --activate <serial_number>
```

Where **<serial_number>** is the adapter's serial number.

-v option:

To display version information, issue the following command:

```
> qaucli -pr nic -flashsupport -v --version
```

-h option:

To display help information, issue the following command:

```
> qaucli -pr nic -flashsupport -h --help
```

-vi option:

To view all available interfaces, issue the following command:

```
> qaucli -pr nic -flashsupport -vi --view-all-interfaces
```

-s option:

To display supported adapters, issue the following command:

```
> qaucli -pr nic -flashsupport -s --supported <flash_file>
```

Where **<flash_file>** is the name of the flash file that will be used to update the adapter.

-i option:

> To set the adapter interface, issue the following command:
>
> > `qaucli -pr nic -flashsupport -i --interface <interface_id>`
>
> Where *interface_id* is an interface ID value displayed by the **-vi** switch.

NOTE:

> The **-i** command must be used to specify the adapter interface before using any of the following options: `-a`, `-info`, `-w0`, `-w1`, `-p0`, `-p1`.

-a option:

> To burn or update all flash regions for the interface specified by the previous `-i` command, issue the following command:
>
> > `qaucli -pr nic -flashsupport -a --all  [ql_romimage]`
>
> Where *<ql_romimage>* is the name of the name of the flash file that will be used to update the adapter. If the file is not specified, the default file (named `ql_romimage`) in the working directory will be used.

-info option:

> To display information for the interface specified by the previous `-i` command (or all discovered adapters when the interface not specified), issue the following command:
>
> > `qaucli -pr nic -flashsupport -info --information`

-w0 option:

> To disable Wake on LAN for the interface specified by the previous `-i` command, issue the following command:
>
> > `qaucli -pr nic -flashsupport -w0 --wol-off`

-w1 option:

> To enable Wake on LAN for the interface specified by the previous `-i` command, issue the following command:
>
> > `qaucli -pr nic -flashsupport -w1 --wol-on`

-p0 option:

> To disable PXE LAN for the interface specified by the previous `-i` command, issue the following command:
>
> > `qaucli -pr nic -flashsupport -p0 --pxe-off`

-p1 option:

> To enable PXE LAN for the interface specified by the previous `-i` command, issue the following command:

```
> qaucli -pr nic -flashsupport -p1 --pxe-on
```

-g
(Display General System Information)

To view general system information for the host, issue the `-g` command as follows:

```
> qaucli -pr nic -g [cna_port_inst]
```

For example:

```
> qaucli -pr nic -g
Using config file: G:\Program Files\QLogic
Corporation\QConvergeConsoleCLI\qaucli.cfg
Installation directory: G:\Program Files\QLogic
Corporation\QConvergeConsoleCLI
Working dir: G:\Documents and Settings\user1
Using config file: G:\Program Files\QLogic
Corporation\QConvergeConsoleCLI\netscli.cfg

Host Name   : APPCRUSHER
Host Version: Service Pack 2 (Build 3790)
Host Type   : Microsoft Windows Server 2003 R2 x64
User Type   : Privileged; CNA setup allowed
```

-h
(Help)

To view the help file, issue the `-h` command as follows:

```
> qaucli -pr nic -h
```

The QConvergeConsole CLI help file contains a condensed version of the contents of this chapter.

-i
(List All QLogic CNA Ports Detected)

To view a list of all QLogic adapter ports detected, issue the `-i` command as follows:

```
> qaucli -pr nic -i [cna_port_inst]
```

For example:

```
> qaucli -pr nic -i 1

1. CNA: 1 CNA Port: 1 CNA Model: QLE8142 PortID: 0
    Mac Phys. Address: 00:c0:dd:12:0f:f4 Loc. Mac: 00:c0:dd:12:0f:f4
    CNA Serial Number: AFC0916A07152 MPI FW Version: 1.35.00 Adapter Alias:
None
    Port Alias: CNA X54
    IPv4   Address: 192.168.204.201
    IPv6 Addresses: fe80::2c0:ddff:fe12:ff4
```

-icna
(CNA Information)

To view adapter information, issue the -icna command as follows:

> **qaucli -pr nic -icna [*cna_port_inst*]**

For example:

> **qaucli -pr nic -icna 2**

```
=== CNA Information for 2. CNA Port Index ===
Hostname                   : WIN-4ZKSPMU5N5L
Adapter Model              : QLE8142
Chip Model                 : 8001
Chip Version               : A1
Adapter Alias              : None
Serial Number              : RFC0916K61116
MAC Address                : 00:c0:dd:10:27:60
MAC Address                : 00:c0:dd:10:27:62
Driver Information         : Ndis 6.x 10GbE driver (X86)
Driver Name                : qlge.sys
Driver Version             : 1.0.1.0
MPI Firmware Version       : 1.35.06
PXE Boot Version           : NA
VLAN & Team Driver Name    :
VLAN & Team Driver Version :
FCoE Driver Version        : 9.1.8.17
FCoE Firmware Version      : 5.01.03
FCoE SDMAPI Version        : 01.28.00.75
```

-idcbx
(Display Port DCBX Information)

To display port DCBX information, issue the `-idcbx` command as follows:

> **qaucli -pr nic -idcbx [*cna_port_inst*]**

-intloopback
(Configure Test Parameters)

NOTE:

An external loopback test requires the installation of a loopback plug in the port SFP.

To configure loopback test parameters before you run the test, issue the `intloopback` command as follows:

> **qaucli -pr nic -intloopback <*cna_port_inst*> <*tests_num*> <*on_error*>**

Where `tests_num` specifies the number of tests to run (a value between 1 and 65,535) and `on_error` specifies the action to take if an error is encountered in the test (`0` = ignore the error; `1` = abort the test).

-iset
(Display Configured Port Settings)

To view configured port settings, issue the `-iset` command as follows:

> **qaucli -pr nic -iset [*cna_port_inst*]**

NOTE:

For Linux/Solaris, the configured port settings and their values are different from what is shown in the following example.

For example:

```
> qaucli -pr nic -iset 1

=== Configured Port Settings for 1. CNA Port Index ===
Header_Data_Split_Enable         : off
IPv4_Large_Send_Offload_v1_Enable  : on
IPv4_Large_Send_Offload_v2_Enable  : on
IPv6_Large_Send_Offload_v2_Enable  : on
IPv4_TCP_Checksum_Offload_Enable   : RxTx
IPv6_TCP_Checksum_Offload_Enable   : RxTx
IPv4_UDP_Checksum_Offload_Enable   : RxTx
IPv6_UDP_Checksum_Offload_Enable   : RxTx
Jumbo_Frames_MTU_9000_Enable_Rx    : off
Jumbo_Frames_MTU_9000_Enable_Tx    : off
LOCAL_Administered_Address_MAC     : 00:c0:dd:12:0f:f4
MAC_Address_Alias                  : paul
Receive_Side_Scaling_Enable        : on
Receive_Ring_Size                  : 0
Transmit_Ring_Size                 : 0
PromiscuousModeEnabled             : off
```

-link
(Display Physical Link Status)

To view the status of the physical link, including the port speed, issue the -link command as follows:

```
> qaucli -pr nic -link [cna_port_inst]
```

For example:

```
> qaucli -pr nic -link 1

=== Physical Link Status for 1. CNA Port Index ===
Link Status         : Up
Port Speed          : 10 Gbps
```

-minidump
(Firmware Mini Dump)

To dump a firmware core dump into a file for a given `cna_port_inst`, issue the `-minidump` command as follows:

```
> qaucli -pr nic -minidump <cna_port_inst> <minidump_file>
  [force | noforce]
```

Where `minidump_file` specifies the name of the dump file, and **force** and **noforce** specify how the core dump is created: if **force** is specified, then a new core dump is created and dumped into the specified file; if **noforce** is specified, then if a core dump is available, it is dumped into the specified file.

-n
(Change Port Alias Name)

To change port alias names, issue tthhe `-n` command as follows:

```
> qaucli -pr nic -n [cna_port_inst] <config_name|config_alias>
<value> [<config_name|config_alias> <value>]
```

For this release of QConvergeConsole CLI, you can set the following properties:

- Port_Alias
- Port_Physical_MAC_Alias
- Port_LLA_MAC_Alias

For example:

```
> qaucli -pr nic -n 1 Port_Alias jwm614
```

```
Port_Alias                    : jwm614
```

-nh
(Change CNA Alias Name)

To configure the adapter, issue the `-nh` command as follows:

```
> qaucli -pr nic -nh [cna_port_inst] <config_name|config_alias>
<value> [<config_name|config_alias> <value>]
```

For this release, you can set the only the `CNA_Alias` property.

For example:

```
> qaucli -pr nic -nh 1 CNA_Alias george
```

```
CNA_Alias                     : george
```

-pinfo
(Port Information)

To view port information, issue the `-pinfo` command as follows:

> **qaucli -pr nic -pinfo [*cna_port_inst*]**

For example:

> **qaucli -pr nic -pinfo**

```
=== Port Information for 1. CNA Port Index ===

Hostname                     : STARBLAZER
Adapter Model                : QLE8142
Port Alias                   : None
Physical MAC Address         : 00:c0:dd:12:0f:f4
Physical MAC Address Alias   : paul
Configured (LLA) MAC Address: 00:c0:dd:12:0f:f4
LAA MAC Address Alias        : paul
IPv4 Address                 : 192.168.204.201
IPv4 Subnet Mask             : 255.255.255.0
IPv4 Default Gateway         : 255.255.255.255
IPv4 DHCP Enabled            : No
DNS Servers                  : fec0:0:0:ffff::1
                             : fec0:0:0:ffff::2
                             : fec0:0:0:ffff::3
IPv6 Addresses               : fe80::2c0:ddff:fe12:ff4
                             : fec0:0:0:ffff::1
                             : fec0:0:0:ffff::2
IPv6 Default Router          : fe80::2c0:ddff:fe12:ff4
Link Status                  : Up
MTU                          : 1514
Interface Scope ID           : 91
Interface Speed              : 10 Gbps
Interface Description        : QLogic 10Gb PCI Ethernet Adapter -
Network Load Balancing Filter Device

=== Port Information for 2. CNA Port Index ===
. . .
```

-ping
(Ping Target)

To run a ping diagnostic, issue the `-ping` command as follows:

> **qaucli -pr nic -ping *<cna_port_inst>* *<hostname_or_IPv4>* [*<count>* *<packet size>* *<timeout_ms>* *<TTL>*]**

Where the default parameter values are as follows:

count = 5
packet size = 525
timeout_ms = 1000
TTL = 30

For example:

> **qaucli -pr nic -ping 1 starblazer**
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Got IP: 192.168.104.142 for starblazer
----
ping IPv4

Got IP: 192.168.104.142 for starblazer
Pinging 192.168.104.142 ...
Ping Response Received, roundtrip=0 ms, hops=0
Ping Response Received, roundtrip=0 ms, hops=0
Ping Response Received, roundtrip=0 ms, hops=0
Ping Response Received, roundtrip=0 ms, hops=0
Ping Response Received, roundtrip=16 ms, hops=0
Summary: ping failed 0, ping success 5 ping timeout 0

-rc

To view a list of error codes and their descriptions, issue the `-rc` command as follows:

> **qaucli -pr nic -rc**

-sreset
(Reset Ethernet Statistics Counters)

To reset the Ethernet statistics counters, issue the `-sreset` command as follows:

> **qaucli -pr nic -sreset [*cna_port_inst*]**

For example:

> **qaucli -pr nic -sreset 1**

```
Port statistics reset for 1. CNA Port Index
```

-statport
(Display Ethernet Port Statistics)

To view the Ethernet port statistics, issue the `-statport` command as follows:

> **qaucli -pr nic -statport [*cna_port_inst*]**

For example:

> **qaucli -pr nic -statport 1**

```
Port statistics for 1. CNA Port Index
txPkts                  : 12989
txOctets                : 2302620
txMulticastPkts         : 8444
txBroadcastPkts         : 4195
txUnicastPkts           : 350
txControlPkts           : 0
txPausePkts             : 0
txPkts64Octets          : 1013
txPkts65to127Octets     : 8746
txPkts128to255Octets    : 422
txPkts256to511Octets    : 2458
txPkts512to1023Octets   : 0
txPkts1024to1518Octets  : 350
txPkts1519toMaxOctets   : 0
txUndersizePkts         : 0
txOversizePkts          : 0
rxOctets                : 3051428
rxPkts                  : 18724
rxBroadcastPkts         : 5728
rxMulticastPkts         : 12646
rxUnicastPkts           : 350
rxUndersizePkts         : 0
rxOversizePkts          : 0
rxJabberPkts            : 0
rxUndersizeFCSerrorPkts : 0
rxPkts64Octets          : 417
rxPkts65to127Octets     : 9351
```

```
rxPkts128to255Octets    : 8252
rxPkts256to511Octets    : 354
rxPkts512to1023Octets   : 0
rxPkts1024to1518Octets  : 350
rxPkts1519toMaxOctets   : 0
rxControlPkts           : 0
rxPausePkts             : 0
txCBFCPauseFrames0      : 0
txCBFCPauseFrames1      : 0
txCBFCPauseFrames2      : 0
txCBFCPauseFrames3      : 0
txCBFCPauseFrames4      : 0
txCBFCPauseFrames5      : 0
txCBFCPauseFrames6      : 0
txCBFCPauseFrames7      : 0
txFCoEPkts              : 306
txMgmtPkts              : 7921
rxCBFCPauseFrames0      : 0
rxCBFCPauseFrames1      : 0
rxCBFCPauseFrames2      : 0
rxCBFCPauseFrames3      : 0
rxCBFCPauseFrames4      : 0
rxCBFCPauseFrames5      : 0
rxCBFCPauseFrames6      : 0
rxCBFCPauseFrames7      : 0
rxFCoEPkts              : 0
rxMgmtPkts              : 7912
rxPktsPriority0         : 0
rxPktsPriority1         : 0
rxPktsPriority2         : 0
rxPktsPriority3         : 306
rxPktsPriority4         : 0
rxPktsPriority5         : 0
rxPktsPriority6         : 0
rxPktsPriority7         : 0
txPktsPriority0         : 0
txPktsPriority1         : 0
txPktsPriority2         : 0
txPktsPriority3         : 306
txPktsPriority4         : 0
txPktsPriority5         : 0
txPktsPriority6         : 0
txPktsPriority7         : 4762
rxPktsDiscardPriority0  : 0
rxPktsDiscardPriority1  : 0
rxPktsDiscardPriority2  : 0
rxPktsDiscardPriority3  : 0
rxPktsDiscardPriority4  : 0
rxPktsDiscardPriority5  : 0
rxPktsDiscardPriority6  : 0
rxPktsDiscardPriority7  : 0
```

-sunreset
(Undo Reset Ethernet Statistics Counters)

To undo the resetting of Ethernet statistics counters, issue the `-sunreset` command as follows:

> **qaucli -pr nic -sunreset [*cna_port_inst*]**

For example:

> **qaucli -pr nic -sunreset 1**

```
Port statistics undo reset for 1. CNA Port Index
```

-teamdel
(Delete Team)

To delete a team, issue the `-teamdel` command as follows:

> **qaucli -pr nic -teamdel <*team_inst*|ALL>**

For example:

> **qaucli -pr nic -teamdel 3**

```
About to delete team: 1 (QLogic VT-IM Miniport Driver #2). Please
wait ...
Successfully deleted team: 1 ()
```

-teaminfo
(Display Team Information)

To view information about a team, issue the `-teaminfo` command as follows:

> **qaucli -pr nic -teaminfo <*team_inst*|ALL>**

For example:

> **qaucli -pr nic -teaminfo ALL**

```
***** Team: QLogic VT-IM Miniport Driver #2 ******

Team Description: QLogic VT-IM Miniport Driver #2
Team Type       : Fail Over
Driver Name     : qlvtid.sys
Driver Version  : 1.0.0.2
Driver Date     : 05/26/2009
VLAN Enabled    : Disabled
VLAN ID         : None
MAC Address     : 00:c0:dd:0a:b1:a9
MTU             : 1500
IPv4 Address    : 169.254.27.115
Subnet Mask     : 255.255.0.0
IPv6 Address    : fe80::2c0:ddff:fe0a:b1a9
Link Status     : Unknown
```

-teamlist
(Display Teams List)

To view a list of all previously configured teams (if any), issue the `-teamlist` command as follows:

> `qaucli -pr nic -teamlist`

For example:

```
> qaucli -pr nic -teamlist

Using config file: .\netscli.cfg
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Team:  1 Team Description: QLogic VT-IM Miniport Driver #2 VLAN ID: None
Team Type: Fail Over
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:c0:dd:0a:b1:a8 Description: QLogic 10Gb PCI
Ethernet Adapter
CNA: 1 CNA Port: 2  MAC: 00:c0:dd:0a:b1:a9 Description: QLogic 10Gb PCI
Ethernet Adapter #2
```

-teamnew
(Configure New Team)

To configure a new team, issue the `-teamnew` command as follows:

> `qaucli -pr nic -teamnew <team_type> <port_insts|ALL>`

Where `team_type` specifies a numeric value and `port_insts` specifies a list of comma-separated port indices (for example `1,2`).

The `team_type` variable can have the following values:

`1` = Fail-safe team

`2` = Switch independent load balancing

`3` = 802.3ad static team

`4` = 802.3ad dynamic team—active link aggregation control protocol (LACP)

`5` = 802.3ad dynamic team—passive LACP

For example:

```
> qaucli -pr nic -teamnew 1 ALL

User selected CNA Port Indices: ALL

Attempting to create new team:

Team Description:
Team Type: Fail Over
Selected ports : 1, 2

CNA: 1 CNA Port: 1  MAC: 00:c0:dd:0a:b1:a8 Description: QLogic 10Gb PCI
Ethernet Adapter - Network Load Balancing Filter Device
    QLogic 10Gb PCI Ethernet Adapter - Network Load Balancing Filter Device
CNA: 1 CNA Port: 2  MAC: 00:c0:dd:0a:b1:a9 Description: QLogic 10Gb PCI
Ethernet Adapter #2 - Network Load Balancing Filter Device
    QLogic 10Gb PCI Ethernet Adapter #2 - Network Load Balancing Filter Device

About to create the team. Please wait ...
Successfully created team with interface description: QLogic VT-IM Miniport
Driver #2
```

-teamnew_portspreview

To preview ports before you configure a new team, issue the
-teamnew_portspreview command as follows:

> **qaucli -pr nic -teamnew <*team_type*> <*port_insts*|ALL>**

For example:

```
> qaucli -pr nic -teamnew 1 ALL
1. CNA: 1 CNA Port: 1 CNA Model: QLE8142 PortID: 0
   Mac Phys. Address: 00:c0:dd:12:0f:f4 Loc. Mac: 00:c0:dd:12:0f:f4
   CNA Serial Number: AFC0916A07152 MPI FW Version: 1.35.02 Adapter Alias: None
   Port Alias: None
   IPv4   Address: 192.168.204.201
   IPv6 Addresses: fe80::2c0:ddff:fe12:ff4
 2. CNA: 1 CNA Port: 2 CNA Model: QLE8142 PortID: 1
   Mac Phys. Address: 00:c0:dd:12:0f:f6 Loc. Mac: 00:c0:dd:12:0f:f6
 CNA Serial Number: AFC0916A07152 MPI FW Version: 1.35.02 Adapter Alias: None
 Port Alias: None
 IPv4   Address: 192.168.205.200
           IPv6 Addresses: fe80::2c0:ddff:fe12:ff6
```

-testflash

To test the Flash memory, issue the `-testflash` command as follows:

> `qaucli -pr nic -testflash [cna_port_inst]`

-testhw

To test the hardware, issue the `-testhw` command as follows:

> `qaucli -pr nic -testhw [cna_port_inst]`

-testinterrupt

To test the interrupt, issue the `-testinterrupt` command as follows:

> `qaucli -pr nic -testinterrupt [cna_port_inst]`

-testled

To test the LED, issue the `-testled` command as follows:

> `qaucli -pr nic -testled [cna_port_inst]`

-testlink

To test the link, issue the `-testlink` command as follows:

> `qaucli -pr nic -testlink [cna_port_inst]`

-testregister

To test the register, issue the `-testregister` command as follows:

> `qaucli -pr nic -testregister [cna_port_inst]`

-trans
(Display Transceiver DMI Data)

To display transceiver DMI data, issue the `-trans` command as follows:

> `qaucli -pr nic -trans [cna_port_inst]`

-updimages
(Update Flash (Boot & Firmware Images))

To update the Flash (boot and firmware) images, issue the `-updimages` command as follows:

> `qaucli -pr nic -updimages [cna_port_inst] <image_file>`

For example:

```
> qaucli -pr nic -updimages 1 "c:\my dir\valid-image-file"
netscli -updimages c:\temp\temp1
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
=== Updating images for 1. CNA Port Index ===
Loading, please wait ...
Successfully updated Flash (Boot & Firmware images) for 1. Port
Index from file: c:\temp\temp1
=== Updating images for 2. CNA Port Index ===
Loading, please wait ...
Successfully updated Flash (Boot & Firmware images) for 2. Port
Index from file: c:\temp\temp1
```

-updimages_viewver

To view the Flash version, issue the -updimages_viewver command as follows:

```
> qaucli -pr nic -updimages_viewver image_file
```

-v, -ver
(Display Program Version Information)

To view the version number of QConvergeConsole CLI, issue the -v or -ver command as follows:

```
> qaucli -pr nic -v
> qaucli -pr nic -ver
```

For example:

```
> qaucli -pr nic -ver

Using config file: G:\Program Files\QLogic
Corporation\QConvergeConsoleCLI\qaucli.cfg
Installation directory: G:\Program Files\QLogic
Corporation\QConvergeConsoleCLI
Working dir: G:\Documents and Settings\user1
Using config file: G:\Program Files\QLogic
Corporation\QConvergeConsoleCLI\netscli.cfg
SANsurfer CNA Networking CLI
ncli version : 1.0.00.59
netSDMAPI : 01.01.05
Copyright 1999-2011 QLogic Corp.
```

-vlanadd
(Add VLAN to Port or Team)

To add a virtual LAN (VLAN) to a port or team, issue the `-vlanadd` command as follows:

> **qaucli -pr nic -vlanadd *<port_insts>* *<vlan_id>***

Where `port_insts` specifies a list of comma-separated port indices (for example, `1,2`) and `vlan_id` specifies a numeric value 1–4095.

For example:

```
> qaucli -pr nic -vlanadd 2 120
Using config file: .\netscli.cfg
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC:
00:c0:dd:0a:b1:a8 Description: QLogic 10Gb PCI Ethernet Adapter –
Network Load Balancing Filter Device
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC:
00:c0:dd:0a:b1:a9 Description: QLogic 10Gb PCI Ethernet Adapter #2
- Network Load Balancing Filter Device

User entered ListIndices: 2
User entered VLAN ID: 120
About to set VLAN ID: 120 for ListIndex: 2
Successfully set.
```

-vlanadd_preview

To preview the VLAN, port, and team information before you add a VLAN to a port or team, issue the `-vlanadd_preview` command as follows:

> **qaucli -pr nic -vlanadd_preview**

For example:

```
> qaucli -pr nic -vlanadd_preview

VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC:
00:c0:dd:0a:b1:a8 Description: QLogic 10Gb PCI Ethernet Adapter -
Network Load Balancing Filter Device
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC:
00:c0:dd:0a:b1:a9 Description: QLogic 10Gb PCI Ethernet Adapter #2
- Network Load Balancing Filter Device
```

-vlandel
(Remove VLAN from Port or Team)

To remove all VLANS from a port or team, issue the `-vlandel` command as follows:

```
> qaucli -pr nic -vlandel <port_insts|ALL> <vlan_id|ALL>
```

Where `port_insts` specifies the port's indices comma separated (for example, `1,2`) and `vlan_id` specifies a numeric value 1–4095.

For example:

```
> qaucli -pr nic -vlandel ALL ALL

VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  2  VLAN ID:   120 MAC:
00:c0:dd:0a:b1:a9 Description: QLogic 10Gb PCI Ethernet Adapter #2

User entered ListIndices: ALL
User entered VLAN ID: ALL
About to remove VLAN ID(s) for ListIndex: 1. (QLogic 10Gb PCI
Ethernet Adapter #2) Please wait ...
Successfully removed VLAN ID.
```

-vlandel_preview

To preview the virtual LAN, port, and team information before you delete a VLAN from a port or team, issue the `-vlandel_preview` command as follows:

```
> qaucli -pr nic -vlandel_preview
```

For example:

```
> qaucli -pr nic -vlandel_preview

VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:   453 MAC:
00:c0:dd:12:0f:f4 Description: QLogic 10Gb PCI Ethernet Adapter
```

-vlaninfo
(Display VLAN Information)

To view information about the VLAN, issue the `-vlaninfo` command as follows:

```
> qaucli -pr nic -vlaninfo <vlan_inst|ALL>
```

For example:

```
> qaucli -pr nic -vlaninfo 1

VLAN(s) Information:
Updating VLANs info ...
Done ...
No VLANs to display.
```

-vlanlist
(Display VLAN List)

To view the adapters, ports, teams, VLAN IDs, and descriptions, issue the `-vlanlist` command as follows:

```
> qaucli -pr nic -vlanlist
```

For example:

```
> qaucli -pr nic -vlanlist

VLAN List:
CNA:  1 CNA Port:  2  VLAN ID:   120 MAC: 00:c0:dd:0a:b1:a9
Description: QLogic VT-IM Miniport Driver #2
```

-vpd
(Display VPD Information)

To display VPD information, issue the `-vpd` command as follows:

```
> qaucli -pr nic -vpd [cna_port_inst]
```

-vtcfgview

To view the contents of the previously saved VLAN and teaming configuration settings file (see -vtsave (Save VLAN & Teaming Configuration)), issue the `-vtcfgview` command as follows:

> `qaucli -pr nic -vtcfgview [state_cfg_file]`

NOTE:

If you do not specify a file name, QConvergeConsole CLI reads the default file (`vtstate.cfg`) in the installation directory.

For example:

```
>qaucli -pr nic -vtcfgview  c:/system_1.cfg
Using config file: E:\Program Files\QLogic\Corporation
\QConvergeConsoleCLI\netscli.cfg
Accessing file: c:/system_1.cfg

Number of Teams: 1
----------------
type=Fail Over MAC: 00:c0:dd:0a:b4:61 00:c0:dd:0a:b4:60 (VLAN IDs: 555)

Number of Ports: 3
----------------
MAC :00:c0:dd:0a:b4:34 (VLAN IDs: 35)
MAC :00:c0:dd:0a:b4:35 (VLAN IDs: 777)
MAC :None (VLAN IDs:)

Number of VLANS: 3
----------------
............................
VLAN ID            : 35
............................
IPv4Address        : 169.254.132.7
IPv4SubnetMask     : 0.0.0.0
IPv4GatewayAddr    : 0.0.0.0
DHCPServerCount    : 0
IPv6GatewayAddr    :
IPv6AddressCount   : 1
pDHCPServers[   0] : fe80::e9ba:1d3e:8584:8407
DNSServerCount     : 3
pDNSServers[   0] : fec0:0:0:ffff::1
```

```
pDNSServers[    1]  : fec0:0:0:ffff::2
pDNSServers[    2]  : fec0:0:0:ffff::3
.............................
VLAN ID             : 777
.............................
IPv4Address         : 169.254.202.39
IPv4SubnetMask      : 0.0.0.0
IPv4GatewayAddr     : 0.0.0.0
DHCPServerCount     : 0
IPv6GatewayAddr     :
IPv6AddressCount    : 1
pDHCPServers[    0] : fe80::d079:f594:8e03:ca27
DNSServerCount      : 3
pDNSServers[    0]  : fec0:0:0:ffff::1
pDNSServers[    1]  : fec0:0:0:ffff::2
pDNSServers[    2]  : fec0:0:0:ffff::3
.............................
VLAN ID             : 555
.............................
IPv4Address         :
IPv4SubnetMask      :
IPv4GatewayAddr     :
DHCPServerCount     : 0
IPv6GatewayAddr     :
IPv6AddressCount    : 0
DNSServerCount      : 0
```

-vtrestore
(Restore VLAN & Teaming Configuration)

To reinstate previously saved VLAN and team settings from a file, issue the `-vtrestore` command as follows:

```
> qaucli -pr nic -vtrestore [file_name]
```

The default file configuration file name for VLAN and teaming is `vtstate-user.cfg`, which is saved in the QConvergeConsole CLI installation directory. You may have saved your configuration with a different file name or location.

> ***NOTE:***
>
> The `-vtrestore` command can restore a configuration file produced only by the `-vtsave` command. Similarly, a configuration that is saved using the QLogic Windows Teaming property pages can be restored only with the Windows Teaming property pages.

For example:

```
>qaucli -pr nic -vtrestore c:/system_1.cfg
Using config file: E:\Program Files\QLogic Corporation
\QConvergeConsoleCLI\netscli.cfg
Loading CNA Data ...
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Loading: 2. CNA ...
Loading: 2. CNA Port index : 1 ...
Loading: 2. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Attempting to restore TEAMs and VLANs if configured prior to vtdriver updaate.
 *** Teams:
 *** Ports:
00:c0:dd:0a:b4:34
VLAN IDs:
55

00:c0:dd:0a:b4:35
VLAN IDs:
55

Refreshing interfaces ... Please wait ...
Updating IP properties for all ports ... Please wait ...
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:60
Description: QLogic 10Gb PCI Ethernet Adapter #3
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:61
Description: QLogic 10Gb PCI Ethernet Adapter #4
ListIndex:  3 CNA:  2 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:34
Description: QLogic 10Gb PCI Ethernet Adapter
ListIndex:  4 CNA:  2 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:35
Description: QLogic 10Gb PCI Ethernet Adapter #2

VLAN List:
```

```
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:60
Description: QLogic 10Gb PCI Ethernet Adapter #3
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:61
Description: QLogic 10Gb PCI Ethernet Adapter #4
ListIndex:  3 CNA:  2 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:34
Description: QLogic 10Gb PCI Ethernet Adapter
ListIndex:  4 CNA:  2 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:35
Description: QLogic 10Gb PCI Ethernet Adapter #2

Selected ListIndices: 3
Selected VLAN ID: 55
About to set VLAN ID: 55 for ListIndex: 3
Successfully set VLAN ID.
Refreshing interfaces ... Please wait ...
Updating IP properties for all ports ... Please wait ...
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:60
Description: QLogic 10Gb PCI Ethernet Adapter #3
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:61
Description: QLogic 10Gb PCI Ethernet Adapter #4
ListIndex:  3 CNA:  2 CNA Port:  1  VLAN ID:   55 MAC: 00:c0:dd:0a:b4:34
Description: QLogic 10Gb PCI Ethernet Adapter
ListIndex:  4 CNA:  2 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:35
Description: QLogic 10Gb PCI Ethernet Adapter #2

VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  1  VLAN ID:  None MAC: 00:c0:dd:0a:b4:60
Description: QLogic 10Gb PCI Ethernet Adapter #3
ListIndex:  2 CNA:  1 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:61
Description: QLogic 10Gb PCI Ethernet Adapter #4
ListIndex:  3 CNA:  2 CNA Port:  1  VLAN ID:   55 MAC: 00:c0:dd:0a:b4:34
Description: QLogic 10Gb PCI Ethernet Adapter
ListIndex:  4 CNA:  2 CNA Port:  2  VLAN ID:  None MAC: 00:c0:dd:0a:b4:35
Description: QLogic 10Gb PCI Ethernet Adapter #2

Selected ListIndices: 4
Selected VLAN ID: 55
About to set VLAN ID: 55 for ListIndex: 4
Successfully set VLAN ID.
Refreshing interfaces ... Please wait ...
Updating IP properties for all ports ... Please wait ...
Successfully restored TEAMs/VLANs
```

-vtsave
(Save VLAN & Teaming Configuration)

To save the currently configured VLAN and team settings to a file, issue the `-vtsave` command as follows:

```
> qaucli -pr nic -vtsave [file_name]
```

NOTE:

- If you do not specify a configuration file name, the VLAN and teaming settings are saved in the default file, `vtstate-user.cfg`, which is saved in the QConvergeConsole CLI installation directory. Saved settings can be later reinstated using the `-vtrestore` option.

- A configuration that is saved with the `-vtsave` command can be restored only with the `-vtrestore` command. Similarly, a configuration that is saved using the QLogic Windows Teaming property pages can be restored only with the Windows Teaming property pages.

```
>qaucli -pr nic -vtsave c:/system_1.cfg
Using config file: E:\Program Files\QLogic Corporation
\QConvergeConsoleCLI\netscli.cfg
Loading CNA Data ...
Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Loading: 2. CNA ...
Loading: 2. CNA Port index : 1 ...
Loading: 2. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Attempting to save TEAMs and VLANs Configuration.

Team:  1 Team Description: QLogic VT-IM Miniport Driver VLAN ID: 555 Team Type:
Fail Over
Team Members:
CNA: 1 CNA Port: 2  MAC: 00:c0:dd:0a:b4:61 Description: QLogic 10Gb PCI
Ethernet Adapter #4
CNA: 1 CNA Port: 1  MAC: 00:c0:dd:0a:b4:60 Description: QLogic 10Gb PCI
Ethernet Adapter #3

VLAN List:

ListIndex:  1 Team:  1 Team Description: QLogic VT-IM Miniport Driver  VLAN ID:
555 MAC: 00:c0:dd:0a:b4:60 Description: QLogic VT-IM Miniport Driver
VLAN List:

Team:  1 Team Description: QLogic VT-IM Miniport Driver  VLAN ID:  555 MAC:
00:c0:dd:0a:b4:60 Description: QLogic VT-IM Miniport Driver #2
Successfully saved TEAMs/VLANs
```

-zvt
(Display Teams List; Display VLANs List; Display VLAN Information)

To view a display that combines all VLAN and teaming information, issue the -zvt command as follows:

> **qaucli -pr nic -zvt**

The following example shows the output on a system with one team of two ports, plus two additional ports:

> **qaucli -pr nic -zvt**

```
*********************************************
*********************************************
*** Displaying VLAN & Teaming Information ***
*********************************************
*********************************************

***  Display Of Teams List ***

Team:  1 Team Description: QLogic VT-IM Miniport Driver VLAN ID: 555 Team Type:
Fail Over
Team Members:
CNA: 1 CNA Port: 2  MAC: 00:c0:dd:0a:b4:61 Description: QLogic 10Gb PCI
Ethernet Adapter #4
CNA: 1 CNA Port: 1  MAC: 00:c0:dd:0a:b4:60 Description: QLogic 10Gb PCI
Ethernet Adapter #3

***  Display Of VLANs List ***
VLAN List:

Team:  1 Team Description: QLogic VT-IM Miniport Driver  VLAN ID:   555 MAC:
00:c0:dd:0a:b4:60 Description: QLogic VT-IM Miniport Driver #2
***  Display Of VLAN Information ***

VLAN(s) Information:
Updating VLANs info ...
Done ...
Available VLAN ID(s):
555

***** VLAN: 555 (QLogic VT-IM Miniport Driver #2) ******

Driver Name     : qlvtid.sys
Driver Version  : 1.0.0.14
Driver Date     : 10/13/2009
```

```
VLAN Enabled    : Enabled
VLAN ID         : 555
MAC Address     : 00:c0:dd:0a:b4:60
MTU             : 1514
IPv4 Address    :
Subnet Mask     :
IPv6 Address    :
Link Status     : Down
```

5 Fibre Channel Noninteractive Commands

This chapter describes the noninteractive Fibre Channel command format and parameters of QConvergeConsole CLI. For a quick reference to informative commands, see Display System Information (Command Line Options -g, -z, and -tp).

NOTE:

To view help, issue the command **-h**.

Display System Information
(Command Line Options -g, -z, and -tp)

When you select one of these options, general information appears in various formats. For example:

- ◾ # **qaucli -pr fc -g** shows the host information (see "Host Information (Command Line Option -g)" on page 5-1).

- ◾ # **qaucli -pr fc -z** shows the host configuration (see "Host Configuration (Command Line Option -z)" on page 5-2).

Host Information
(Command Line Option -g)

The command format to show host information is:

qaucli -pr fc -g

Issue this command to view the following information about the local machine:

- ◾ Host name
- ◾ OS type
- ◾ OS version (patches where applicable)
- ◾ SAN target management (SDM) API version

- List of adapters: adapter model, port number, WWPN, serial number (SN), adapter number (adapter 0–n), and status (online or offline)

- Total number of QLogic Fibre Channel adapters detected

NOTE:

The failover and SAN device management APIs are QLogic-specific libraries required for QConvergeConsole CLI. The versions of these libraries are useful for debugging purposes.

Host Configuration
(Command Line Option -z)

The command line option `-z` provides a summary for the selected adapter in a single command. The command format is:

```
# qaucli -pr fc -z
```

QConvergeConsole CLI shows the information in "Host Information (Command Line Option -g)" on page 5-1, as well as the following additional information:

- Adapter general information
- Adapter vital product data (VPD)
- Adapter parameter settings
- Driver settings information:
  - ❑ Group: persistent
  - ❑ Group: binding
- Device/LUN Information
- Selective LUNs Information
  - ❑ Boot device settings

To show the information for a single adapter, issue the following command:

```
# qaucli -pr fc -z (<hba instance> | <hba wwpn>)
```

Where:

> *hba instance* = Adapter number (use `-g` command to find)
>
> *hba wwpn* = World wide port name of the adapter

To show the information for all adapters, issue the following command:

```
# qaucli -pr fc -z all
```

Host Configuration

Use these options to show the information for one or all of the adapter ports in the system. The `-z` option shows the combination of the commands listed in Table 5-1. The commands are listed in alphabetical order.

Table 5-1. Options Shown by -z

CLI	Description	See User Guide Section
-c	Show adapter settings	"-c (Show Parameter Settings)" on page 5-7
-e	Configure boot device	"-e (Boot Device View | Select | Disable)" on page 5-9
-fg	View driver settings	"-fg (Show Driver Settings)" on page 5-12
-g	Show system information	"-gs (Show HBA Statistics)" on page 5-13
-i	Show adapter information	"-i (Display HBA General Information or VPD Information for One or All HBAs)" on page 5-16
-l	Show LUN list	"-l (Display LUN Info)" on page 5-22
-m	Configure selective LUNs	"-m (View, Enable, or Disable LUNs)" on page 5-24
-p	Configure target persistent binding	"-p (Display Persistent Target Binding Info)" on page 5-28
-t	Show target list	"-t (Display Target Information)" on page 5-33

Command Format

The command format for noninteractive mode is:

```
# qaucli -pr fc -(Cmd) (<hba instance> | <hba wwpn>)
(view | info)
```

Where:

hba instance = Adapter port instance (use -g command to find)

hba wwpn = Adapter world wide port name

You can combine the commands -o, -s and -x with other options. However, they *must* be at the beginning or at the end of the command line. Use these commands as follows:

- -o = Output the results to a file (see "-o (Output to a File)" on page 5-28). For example:

    # **qaucli -pr fc -l -o**

- -s = Silent mode (see "-s (Silent Mode)" on page 5-33). For example:

    # **qaucli -pr fc -i all -s -o output.txt**

- -x = Outputs the results in XML format (see "-x (Output in XML Format 1)" on page 5-37). For example:

    # **qaucli -pr fc -i all -x -o output.xml**

You cannot combine the command -f with any other options:

- -f = Input Parameter Options from a Text File (see "-f (Input Parameter Options from a Text File)" on page 5-11). For example:

    # **qaucli -pr fc -f command.txt**

In addition, the following general rules for commands apply:

- Only *one* command line option per input file is valid.

- You can use either the hyphen (-) character or the forward slash (/) character. For example, both of these commands are valid:

    qaucli -pr fc -g

    qaucli -pr fc /g

Table 5-2 defines the command variables.

Table 5-2. Command Variables

Variable	Definition	Format
<hba instance>	Adapter number [a]	
<hba wwpn>	Adapter world wide port name	*xx-xx-xx-xx-xx-xx-xx-xx or xxxxxxxxxxxxxx*
<alias>	Adapter alias	Symbolic adapter [b] name
<target wwnn>	Target world wide node name	*xx-xx-xx-xx-xx-xx-xx-xx or xxxxxxxxxxxxxx*
<target wwpn>	Target world wide port name	*xx-xx-xx-xx-xx-xx-xx-xx or xxxxxxxxxxxxxx*
<target port id>	Target port ID	*xx-xx-xx or xxxxxx*

Table 5-2. Command Variables (Continued)

Variable	Definition	Format
<target id>	Target ID	
<lun id>	Logical unit number	(0–255)
<address>	IP address	*xxx.xxx.xxx.xxx*
(speed)	Target link speed	1.2, 4, or 8GHz

[a] You can use the `-g` command to find adapter numbers.

[b] You assign the symbolic name. It is limited to 100 characters in length.

Command Summary

This section lists and describes each command line option in alphabetic order, followed by a command description.

-a
(View or Toggle Beacon Status)

Use the `-a` command to either view (1) or change (2) the status of a beacon.

NOTE:

- Adapter must not be in silent mode. See "-s (Silent Mode)" on page 5-33 to issue a response to this command.
- The `-a` feature is not supported on QLA22*xx* adapters or QLE8042 adapter.

To view the adapter port's LED beacon state, issue the following command:

qaucli -pr fc -a (<hba instance> | <hba wwpn>)(view | info)

When the adapter's LED is flashing, the following message appears:

```
HBA Port x - LED Flashing is ON.
```

When the adapter's LED is not flashing, the following message appears:

```
HBA Port x - LED Flashing is OFF.
```

To start or stop flashing the adapter's LED beacon, issue the following command:

qaucli -pr fc -a (<hba instance> | <hba wwpn>)

QConvergeConsole CLI toggles the LED's state. If the LED is flashing, the flashing stops. If the LED is not flashing, the flashing begins.

If QConvergeConsole CLI is not in silent mode (see "-s (Silent Mode)" on page 5-33), one of the following messages appears to indicate the LED's current state:

```
The LED Flashing for <hba instance> <hba wwpn> has been turned ON
The LED Flashing for <hba instance> <hba wwpn> has been turned OFF
```

The *hba instance* and *hba wwpn* variables must match the command input parameter.

-b
(Save or Update the Flash BIOS or FCode)

Use the `-b` command to:

■ Update the BIOS or FCode from a file (1).

■ Save the BIOS or FCode to a file (2).

To update the Flash of one or all adapters with new BIOS or FCode, issue the following command:

qaucli -pr fc -b (all | <hba instance> | <hba wwpn>) [(<-rg> | all)] <BIOS/FCode File Name>

Where:

all	=	All adapters of the same type in the system are updated with the new BIOS/FCode
hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name
-rg	=	Flash region update mode (4GB adapters only [a])
all	=	Update all regions (BIOS/FCode/EFI) depending on the Flash
BIOS/FCode File Name	=	Name or path of file continuing update BIOS/FCode

[a] Region update only supported on QLA/QLE/QMC246*x* adapters.

To save the BIOS or FCode to a file, issue the following command:

qaucli -pr fc -b (<hba instance> | <hba wwpn>) SAVE <BIOS/FCode File Name>

Where:

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
BIOS/FCode File Name	=	File name or a path to a file in which to save BIOS/FCode

---

NOTE:

The option to save the FCode to a file type is not supported for QLE8242.

-c
(Show Parameter Settings)

Use the `-c` command to show the parameter settings for all adapters in the system:

```
# qaucli -pr fc -c [ <all> ]
```

To show the parameter settings for a specific adapter, issue the following command:

```
# qaucli -pr fc -c (<hba instance> | <hba wwpn>)
```

Where:

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter

-cna
(FCoE Utilities Menu for QLE81*xx* and QLE82*xx* Adapters)

Use the `-cna` command to work with converged network adapters (QLE81*xx* and QLE82*xx*).

The `-cna` command line options use the following variables:

hba instance	=	Adapter instance number of a converged network adapter port
hba wwpn	=	World wide port name of a converged network adapter port
mpi file	=	MPI configuration DAT file
--detail	=	View detailed format
--raw	=	View raw format
param name	=	Parameter name
param alias	=	Parameter alias
param value	=	Parameter value

To view general information for the adapter, issue the following command:

```
qaucli -pr fc -cna <hba instance>|<hba wwpn> --geninfo
```

To view data center bridging exchange protocol settings, issue the following command:

```
qaucli -pr fc -cna <hba instance>|<hba wwpn> --dcb --info
```

To update the message passing interface (MPI) configuration table on the adapter from a file, issue the following command:

```
qaucli -pr fc -cna <hba instance>|<hba wwpn> --updatecfg
<mpi file>
```

To view DCBX Type-Length-Value (TLV) data sent and received over the adapter port connection, issue the following command:

```
qaucli -pr fc -cna <hba instance>|<hba wwpn> --tlv ( --detail |
--raw )
```

To view data center Ethernet (DCE™) network activity information sent and received over the adapter port connection, issue the following command:

```
qaucli -pr fc -cna <hba instance>|<hba wwpn> --mon --dce
[ { <param name> | <param alias> <param value> } ]
```

Table 5-3 lists the DCE statistics parameters, possible values, and a description of each.

Table 5-3. DCE Statistics Parameters

Parameter Name	Parameter Alias	Parameter Value	Description
AutoPoll	AP	0	Set to auto polling mode
		1–256	Set to manual polling mode (iteration)
SetRate	SR	5–30	Set the polling interval rate (seconds)
Details	DT	0–2	Set the detailed display mode: ■ 0 = Absolute ■ 1 = Rate per second ■ 2 = Baseline

-dm
(Display Diagnostics Monitoring Info)

This option allows you to show general or detailed digital diagnostic monitoring interface for optical transceivers.

NOTE:

This option is supported only for QLA/QLE/QEM24*xx* (4GB) adapters.

To show transceiver monitoring *general* information, issue the following command:

```
# qaucli -pr fc -dm (<hba instance> | <hba wwpn> | <all>) general |
gen
```

To show transceiver monitoring *detailed* information, issue the following command:

```
# qaucli -pr fc -dm (<hba instance> | <hba wwpn> | all) details |
det
```

Where:

<div style="margin-left:4em">

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
all	=	All adapters in the system

</div>

-e
(Boot Device View | Select | Disable)

Use the `-e` command to:

- Show the current boot-device selection for all adapters.

- Show the current boot-device selection for a specific adapter.

- Set a target device as the boot device for an adapter.

- Selectable boot—The OS boots from the first target the BIOS finds.

- Delete the boot device from an adapter.

In these commands:

<div style="margin-left:4em">

hba instance	=	Adapter number (use -g command to find)
hba wwpn	=	World wide port name of the adapter
target wwnn	=	World wide node name of the target
target wwpn	=	World wide port name of the target
target id	=	ID to which the target is bound
lun id	=	ID of the LUN

</div>

To view the current boot device selection on all adapters:

```
# qaucli -pr fc -e all (view | info)
```

To view the current boot device selection for a specific adapter:

```
# qaucli -pr fc -e (<hba instance> | <hba wwpn>) (view | info)
```

In Windows and Linux, each adapter's currently selected boot device is shown in the following format:

```
<hba instance> <hba wwpn> <target wwnn> <target wwpn> <lun id>
```

If the system does not have an adapter with a boot device selected, the following message appears:

```
There is no boot device selected for any HBA in the system.
```

Following is an example of the boot device option when viewing the boot device for a single adapter. In this example, no boot device is configured (selectable boot is disabled; the boot port name is all zeroes).

```
------------------------------------------------------------
HBA 1: QLA2340  WWPN xx-xx-xx-xx-xx-xx-xx-xx Port ID 00-00-00
------------------------------------------------------------
Boot Device Settings:
--------------------------------------
Selectable Boot: Disabled
--------------------------------------
(Primary) Boot Port Name   LUN
----------------------     ----------------------  ------
00-00-00-00-00-00-00-00   00-00-00-00-00-00-00-00      0
Press <Enter> to continue:
```

To cause the OS to boot from the first target it finds with a LUN, select a boot port name of `00-00-…00` (selectable boot); this applies only if the boot BIOS is enabled.

To set a specific target as the boot device for a specific adapter, issue the following command:

```
# qaucli -pr fc -e (<hba instance> | <hba wwpn>) <target wwnn>
<target wwpn> <target id> <lun id>
```

NOTE:

> The boot device setting option is not supported on Macintosh® PowerPC.

QConvergeConsole CLI checks all parameters to verify that the adapter, targets, and LUNs are valid.

If you select an adapter with no target or a target with no LUN, QConvergeConsole CLI shows an error message and aborts.

For all operating systems, if the adapter already has boot devices defined and they are different from the ones in the command parameter or menu selection, you are prompted to confirm the boot device selection:

```
The HBA already has a boot device(s) selected. Do you want to
replace it with the new one?
```

For all operating systems, if the adapter already has boot devices selected and they are the same as the ones in the command parameter or menu selection, the following message appears:

```
The HBA already has that device selected as boot device.
```

To use selectable boot (the OS boots from the first target the BIOS finds) set the *<target wwpn>*, *<target wwnn>* and *<lun id>* inputs to all zeroes. For example issue the following command:

```
# qaucli -pr fc -e (<hba instance> | <hba wwpn>) (enable | 0 0 0)
```

To disable (delete) the boot device for a specific adapter, issue the following command:

```
# qaucli -pr fc -e (<hba instance> | <hba wwpn>) disable
```

-ei
(List Fibre Channel Error Codes)

This command lists the Fibre Channel error codes.

-f
(Input Parameter Options from a Text File)

NOTE:

The -f option is valid only in noninteractive mode, and cannot be combined with any other options. Only one command line parameter per file is valid. This option is used when it is run as a script file.

To input parameter options to QConvergeConsole CLI through a text file, type -f, followed by the file name. For example:

```
# qaucli -pr fc -f command.txt
```

The text file must be formatted as follows:

- The file must contain a single line.
- The file must contain only parameters.
- The file cannot contain another -f option.

The following example shows how to set the connection option of an adapter to default (loop preferred, otherwise point-to-point) and the data rate to auto through a command file that is invoked by the -f option:

1. Create a text file (for example, `setadapter0.txt`) and issue the following command in the text file:

   ```
   -n 0 co 2 dr 2
   ```

2. Save and close the file.

3. Issue the `qaucli -pr fc` command with the `-f` option (input from command file):

    # **qaucli -pr fc -f setadapter0.txt**

    # **qaucli -pr fc -f <file name>**

QConvergeConsole CLI specifies command line input from file.

-fg
(Show Driver Settings)

NOTE:

The `-fg` option is valid only in noninteractive mode.

The `-fg` option is not supported for Linux/Solaris.

To show the driver settings, issue the following command:

qaucli -pr fc -fg (<hba instance> | <hba wwpn>) (view | info)

Where:

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter

-fs
(Configure Driver Settings)

Type the following command to configure the driver settings:

qaucli -pr fc -fs (<hba instance> | <hba wwpn>) {(<param name> | <param alias>) <param value>}

Where:

hba instance	=	Adapter instance number of an adapter port (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
param name	=	Name of the parameters
param alias	=	Alias of the parameters
param value	=	New value of the parameters

The pairs *<param name> <param value>* and *<param alias> <param value>* can be repeated to set multiple parameters in a single command.

Table 5-4 lists the driver configuration parameter names and aliases.

Table 5-4. Driver Settings Parameters

Description	Parameter Name <param name>	Alias <param alias>	Value [a] <param value>
Persistently bound target(s) only	`PersistentOnly`	PO	0, 1
Present persistently bound target(s) plus any new target(s) with driver default	`PersistentPlusNew`	PN	0, 1
Present targets with driver default	`NewOnly` [b]	NO	0, 1
Bind devices by WWPN	`BindWWPN`	BW	0, 1
Bind devices by port ID	`BindPortID`	BP	0, 1

[a] 0 = Disabled, 1 = Enabled

[b] Driver parameter `NewOnly` (NO) is supported only with the failover driver. If you select a QLA22*xx* adapter, all QLA22*xx* adapters on the host will use the same settings. If you select a 23*xx* adapter, all 2G/4G adapters on the host will also use the same settings.

The following restrictions apply:

■ Under Linux, this feature is disabled if you are using the IOCTL or sysfs (inbox) driver.

■ Under Mac OS®, the `BindWWPN` and `BindPortID` parameters are not changeable; Mac OS supports only the `BindWWPN` parameter.

-gs
(Show HBA Statistics)

To view the adapter statistics, issue the following command:

```
# qaucli -pr fc -gs (<hba instance> | <hba wwpn>) [(<param name> |
<param alias>) <param value>]
```

Where:

hba instance	=	Adapter number (use -g command to find)
hba wwpn	=	World wide port name of the adapter
param name	=	Name of the parameter (see table 4-7)
param alias	=	Alias of the parameter (see table 4-7)
param value	=	New value of the parameter (see table 4-7)

Table 5-5 lists the adapter statistics parameter names, aliases, and values.

Table 5-5. Adapter Statistics Parameters

Description	Name	Alias	Value
Sets how often statistics are retrieved	AutoPoll	AP	0–256 [a]
Set the polling interval when retrieving statistics (seconds)	PollRate	SR	5–30
Saves the adapter's statistics to a CVS log file	LogToFile	LF	Log file name

[a] When the AutoPoll value is 0, statistics are retrieved automatically until the user aborts the operation.
   When the AutoPoll value is in the range of 1–256, statistics are retrieved for the number of cycles specified by this value.

Under Linux, this feature is disabled if you are using the IOCTL or sysfs (inbox) driver.

-h
(Help)

To view the help file, issue the following command:

```
# qaucli -pr fc (-h)
```

To view help information for an individual command, issue the following command:

```
# qaucli -pr fc <Command Line Parameter> (-h)
```

For example, typing `qaucli -pr fc -l -h` shows the following:

```
Using config file: G:\Program Files\QLogic
Corporation\QConvergeConsoleCLI\qaucli.cfg
Installation directory: G:\Program Files\QLogic
Corporation\QConvergeConsoleCLI
Working dir: G:\Documents and Settings\user1
QLogic FCAPI
v1.7.3 Build 38
Copyright (C) 2003-2011 QLogic Corp.
All rights reserved.
QLogic FC/FCoE Common Library
Build Type:  Release
Build Date:  Dec  7 201x 13:44:03
LUN list.
USAGE:
   Displays all LUNs information of all devices attached on an HBA port.
   scli -l <hba instance>|<hba wwpn>
   Displays all LUNs information of a device attached on an HBA port.
   scli -l <hba instance>|<hba wwpn> <target wwpn>|<target portid>
   Displays a specific LUN information of a target device attached on an HBA port.
   scli -l <hba instance>|<hba wwpn> <target wwpn>|<target portid <lun id>
   Options
      <hba instance>    The HBA instance number of an HBA port.
      <hba wwpn>        The World Wide Port Name of an HBA port.
      <target wwpn>     The World Wide Port Name of a target device.
      <target portid>   The Port ID of a target device.
      <lun id>          The Logical Unit Number of a LUN.
```

NOTE:

To view the current version information for QConvergeConsole CLI, issue the $-v$ command described in "-v (Display Version)" on page 5-35.

-ha
(Set | Delete HBA Alias)

With this command you can view, set or delete the alias of a specific adapter.

To view the alias of a specified adapter, issue the following command:

qaucli -pr fc -ha (*<hba instance>* | *<hba wwpn>*) view | info

To set an alias for a specified adapter, issue the following command:

`qaucli -pr fc -ha (<hba instance> | <hba wwpn>) <alias>`

To delete an alias of a specified adapter, issue the following command:

`qaucli -pr fc -ha (<hba instance> | <hba wwpn>) delete`
Where:

<div style="margin-left:3em">

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
alias	=	Symbolic adapter name. (100 characters, maximum)

</div>

To set an alias for the selected adapter:

`qaucli -pr fc -ha (<hba instance> | <hba wwpn>) <alias>`

To delete the current alias of the selected adapter:

`qaucli -pr fc -ha (<hba instance> | <hba wwpn>) delete`

To view the current alias of the selected adapter:

`qaucli -pr fc -ha (<hba instance> | <hba wwpn>) view | info`

-i
(Display HBA General Information or VPD Information for One or All HBAs)

To show general adapter information or VPD information for all adapter ports in the system, type the following command:

`qaucli -pr fc -i [ <all> ] [ <VPD> ]`

Where:

<div style="margin-left:3em">

all	=	All adapters in the system
VPD	=	Vital Product Data

</div>

To show general or VPD information for a specific adapter, issue the following command:

`qaucli -pr fc -I (<hba instance> | <hba wwpn>) [ VPD ]`

To show VPD (QLA/QLE24xx only) for all adapter ports in the system, issue the following command:

`qaucli -pr fc -i VPD`
`qaucli -pr fc -i all VPD`

Where:

<div style="margin-left:3em">

all	=	VPD information for all adapters in the system

</div>

-kl
(Run Loopback Test)

Use the `-kl` command to perform an external loopback test.

To perform a loopback test using the default parameters, issue the following command:

```
# qaucli -pr fc -kl (<hba instance> | <hba wwpn>)
```

To do an external loopback test with customized parameters, issue the following command:

```
# qaucli -pr fc -kl (<hba instance> | <hba wwpn>) [(<param name> |
<param alias>) <param value>]
```

Where:

hba instance	= Adapter number (use `-g` command to find)
hba wwpn	= World wide port name of the adapter
param name	= One of the following:

- DataPattern
- DataSize
- TestCount
- TestIncrement
- OnError
- LoopbackType

param alias	= One of the following:

- DP
- DS
- TC
- TI
- OE
- LT

param value	= Value for selected parameter (see Table 5-6)

-kr
(Run Read/Write Buffer Test)

Use the -kr command to do a read/write buffer test.

To do a read/write test using the default parameters, issue the following command:

```
# qaucli -pr fc -kr (<hba instance> | <hba wwpn>)
```

To do a read/write test with customized parameters, issue the following command:

```
# qaucli -pr fc -kr (<hba instance> | <hba wwpn>) [(-EX | -EXCLUDE)
<target wwpn>] (<param name> | <param alias>) <param value>
```

Where:

hba instance	= Adapter number (use -g command to find)
hba wwpn	= World wide port name of the adapter
-ex or *-exclude*	= World wide port name of the target device that is excluded from the read/write test
param name	= One of the following:
	■ DataPattern
	■ DataSize
	■ TestCount
	■ TestIncrement
	■ OnError
param alias	= One of the following:
	■ DP
	■ DS
	■ TC
	■ TI
	■ OE
param value	= Value for selected parameter (see Table 5-6)

"Run a Read/Write Buffer Test" on page 5-18 contains command line examples and test results for a read/write buffer test.

Run a Read/Write Buffer Test

This test runs on all devices or on the devices you select on the adapter you select. This test sends the SCSI Write Buffer command to the target devices and uses the SCSI Read Buffer command to read the returned data and do a data comparison.

NOTE:

All devices attached to the adapter must support SCSI Read/Write Buffer commands.

To do a read/write buffer test using the current parameters, issue the following command:

qaucli -pr fc -kr (*<hba instance>* | *<hba wwpn>*)

To exclude a device or devices on the selected adapter port, issue the following command:

qaucli -pr fc -kr (*<hba instance>*|*<hba wwpn>*) [(-EX | -EXCLUDE) *<target wwpn>*] [(*<param name>* | *<param alias>*) *<param value>*]

The following examples do 500 read/write buffer tests with a test increment of 10, a data pattern of FFh, and a data size of 8 bytes. The test stops if an error occurs.

qaucli -pr fc -kr *<hba instance>* DP FF DS 8 TC 500 TI 10 OE 1
qaucli -pr fc -kr *<hba wwpn>* DP FF DS 8 TC 500 TI 10 OE 1

You do not have to set each parameter for the read/write buffer test. If you do not specify a parameter in the command line, the current parameter value is used. For example, the following command sets the data pattern to FFh and uses the current values for the other parameters:

qaucli -pr fc -kr *<hba instance>* DP FF

The following example sets the data size to 16 bytes and has the test loop if an error occurs. The other parameters use the current values.

qaucli -pr fc -kr *<hba wwpn>* DS 16 OE 2

An example of a successful read/write buffer test follows:

```
HBA 1: QEM2462 Port 1 WWPN xx-xx-xx-xx-xx-xx-xx-xx Port ID 02-0E-00
------------------
Test Configuration
------------------
Data Pattern              : Random
Data Size (Bytes)         : 512
Number of test(s) (0-65535)  : 500
Test Increment (1-65535)  : 1
On Error                  : Ignore
Test Continuous           : OFF
----------------------------------------------------------------------------
```

Run Adapter Diagnostics Read-write Buffer Test

The {(-ex | exclude) <target wwpn>} parameters specify a device that will be excluded from the read/write buffer test.

The system shows the following information after a read/write buffer test completes:

- Loop ID/status
- Data miscompare
- Link failure
- Loss of sync
- Loss of signal
- Invalid CRC

Table 5-6 lists the <param name>, <param alias>, and <param value> options.

Table 5-6. Diagnostics Parameters

Name <param name>	Alias <param alias>	Value <param value>	Description
DataPattern	DP	Test pattern in hex format[a]	00, 55, 5A, A5, AA, FF (see Table 5-7)
		Customized (00–FF)	—
		Random pattern	—
		CRPAT[b]	Loopback test only
		CJTPAT[c]	Loopback test only
		CSPAT[d]	Loopback test only
DataSize[e]	DS	8, 16, 32, 64, 128, 256, 512, 1024, 2048	Actual data transferred during any given pass of the test
TestCount[f]	TC	0–65535	Loopback test only
		0–10,000	Read/write buffer test only
TestIncrement[g]	TI	1–65535	Loopback test only
		1–10,000	Read/write buffer test only
OnError	OE	0–2	0 = ignore
			1 = stop
			2 = loop on error

Table 5-6. Diagnostics Parameters (Continued)

Name <param name>	Alias <param alias>	Value <param value>	Description
LoopbackType [h]	LT	0–2	0 = 10-bit internal loopback [i] 1 = 1-bit serial loopback 2 = external loopback

[a] Valid two-character case-insensitive hexadecimal patterns.

[b] Compliant random data pattern in a valid Fibre Channel frame, as defined by the ANSI document *Methodologies for Jitter and Signal Quality Specification—MJSQ Annex A—Test bit sequences.*

[c] Compliant jitter tolerance pattern in a Fibre Channel frame, as defined by the ASIC document listed above.

[d] Compliant supply noise test sequence in a valid Fibre Channel frame, as defined by the ASIC document listed above.

[e] For read/write buffer test, the maximum size is 128; this is also the default.

[f] 0=test continuously. 1–10,000 and 1–65535=total number of tests that will be executed.

[g] Must be less than the TestCount value.

[h] Loopback test only

[i] Requires installation of a loopback plug in the port SFP

Table 5-7. Data Pattern (DP) Test Patterns

Hex	Binary
00	00000000
55	01010101
5A	01011010
A5	10100101
AA	10101010
FF	11111111

If the read/write buffer test fails, the system shows the following information:

- **Loop/port ID** (the loop ID of the adapter when operating in loop mode).
- **Status**:
  - ❑ **Success**—The test passed.
  - ❑ **Error**—A data miscompare or link status firmware error occurred.
  - ❑ **Failed**—A link status error, SCSI write buffer error, or SCSI read buffer error occurred.
  - ❑ **Unknown**—The target was not present.
  - ❑ **Unsupported**—The device does not support this test.

- **Data Miscompare**—The possible values are:
  - ❑ 0 (no data miscompares)
  - ❑ Device not present
  - ❑ Get link status failed
  - ❑ Read buffer failed
  - ❑ R/W buffer not supported
  - ❑ Write buffer failed

- **Link Failure**—Number of link failures
- **Loss of sync**—Number of sync loss errors
- **Loss of signal**—Number of signal loss errors
- **Invalid CRC**—Number of invalid CRCs

-l
(Display LUN Info)

This command shows LUN information for:

- All adapters
- A specific target
- A specific LUN on a specific target

To show the LUN information for *all target* devices for a *specific adapter Instance*, issue the following command:

```
# qaucli -pr fc -l (<hba instance> | <hba wwpn>)
```

To show the LUN information for a specific device for a specific adapter port, issue the following command:

```
# qaucli -pr fc -l (<hba instance> | <hba wwpn>) (<target port
id> | <target wwpn>)
```

To show the LUN information for a *specific LUN* on a *specific target* device for a *specific adapter* port instance, issue the following command:

```
# qaucli -pr fc -l (<hba instance> | <hba wwpn>) (<target port
id> | <target wwpn>) <lun id>
```

Where:

hba instance	=	Adapter number (use -g command to find)
hba wwpn	=	World wide port name of the adapter
target port id	=	Port ID of the target
target wwpn	=	World wide port name of the target
lun id	=	ID of the LUN

-ls
(Display Link Status)

To view the link status, issue the following command:

```
# qaucli -pr fc -ls (<hba instance> | <hba wwpn>) [(<param
name> | <param alias>) <param value>]
```

Where:

hba instance	=	Adapter number (use -g command to find)
hba wwpn	=	World wide port name of the adapter
param name	=	Name of the parameter (see Table 5-8)
param alias	=	Alias of the parameter (see Table 5-8)
param value	=	New value of the parameter (see Table 5-8)

Table 5-8 defines the link status parameter names, aliases, and values.

Table 5-8. Link Status Parameters

Description	Name	Alias	Value
Sets link-status retrieval period	AutoPoll	AP	0–256 [a] cycles
Sets link-status retrieval polling interval	PollRate	SR	5–30 seconds
Save link status to CVS log file	LogToFile	LF	Log file name

[a] When the AutoPoll parameter is 0, the link status is retrieved automatically until the user aborts the operation. When the AutoPoll parameter is in the range of 1–256, the link status is retrieved for the number of cycles specified by this value.

-m
(View, Enable, or Disable LUNs)

> ***NOTE:***
> - If the current driver setting is Bind by Port ID, this option is not available.
> - Under Linux, if you use the IOCTL or sysfs (inbox) driver, this feature is disabled.
> - You must persistently bind the targets before configuring selective LUNs, (link).

Use the `-m` command to:

- View all selective LUNs for all adapter ports
- View an adapter's selective LUN list
- View the current selective state of a LUN on a specific target
- Enable (select) a LUN on a specific target on a specific adapter
- Disable (deselect) a LUN on a specific target on a specific adapter
- Enable all LUNs on a specific target on a specific adapter
- Disable (deselect) all LUNs on a specific target on a specific adapter
- Enable (select) all LUNs of all targets on a specific adapter
- Disable (deselect) all LUNs of all targets on a specific adapter

For these commands:

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
target wwnn	=	World wide node name of the target
target wwpn	=	World wide port name of the target
lun id	=	ID of the LUN

To view all selective LUNs for all adapter ports, issue the following command:

```
# qaucli -pr fc -m all (view | info)
```

To view an adapter's selective LUN list, issue the following command:

```
# qaucli -pr fc -m (<hba instance> | <hba wwpn> | all) (view |
info)
```

QConvergeConsole CLI shows the adapter's enabled LUN list in the following format:

```
<target wwnn> <target wwpn> <lun id>
```

To view the current select state of a specific LUN, issue the following command:

**qaucli -pr fc -m (<*hba instance*> | <*hba wwpn*>) (<*target wwnn*>
<*target wwpn*> <*lun id*>) (view | info)**

If the input represents a valid LUN, QConvergeConsole CLI shows that LUN's current state as selected or deselected for that adapter.

To enable (select) a LUN on a specific target on a specific adapter, issue the following command:

**qaucli -pr fc -m (<*hba instance*> | <*hba wwpn*>) {<*target wwnn*>
<*target wwpn*> <*lun id*> (1 | enable | select)}**

NOTE:

You can repeat the sequence <*target wwnn*> <*target wwpn*> <*lun id*> 1 to select multiple LUNs in the same command.

To disable (deselect) a LUN on a specific target on a specific adapter, issue the following command:

**qaucli -pr fc -m (<*hba instance*> | <*hba wwpn*>) {<*target wwnn*>
<*target wwpn*> <*lun id*> (0 | disable | deselect)}**

NOTE:

To select multiple LUNs in the same command, repeat the following sequence:

<target wwnn> <target wwpn> <lun id> 0

To enable (select) all LUNs for a specific target on a specific adapter, issue the following command:

**qaucli -pr fc -m (<*hba instance*> | <*hba wwpn*>) select | enable
<*target wwnn*> <*target wwpn*>**

To disable (deselect) all LUNs for a specific target on a specific adapter, issue the following command:

**qaucli -pr fc -m (<*hba instance*> | <*hba wwpn*>) deselect | disable
<*target wwnn*> <*target wwpn*>**

To enable (select) all LUNs of all targets on a specific adapter:

qaucli -pr fc -m (<*hba instance*> | <*hba wwpn*>) select all

To disable (deselect) all LUNs of all targets on a specific adapter:

qaucli -pr fc -m (<*hba instance*> | <*hba wwpn*>) deselect all

-n
(Set Selected HBA Parameter)

To set a specific parameter on a specific adapter, issue the following command:

qaucli -pr fc -n (*<hba instance>* | *<hba wwpn>*) { (*<param name>* | *<param alias>*) *<param value>* }

To restore the default BIOS (4G adapters only), issue the following command:

qaucli -pr fc -n (*<hba instance>* | *<hba wwpn>*) default

Where:

hba instance	=	Adapter number (use -g command to find)
hba wwpn	=	World wide port name of the adapter
param name	=	Name of the parameters
param alias	=	Alias of the parameters
param value	=	New value of the parameters

The pairs *<param name>* *<param value>* and *<param alias>* *<param value>* can be repeated to set multiple parameters with a single command.

Table 5-9 lists the adapter parameter names and aliases.

Table 5-9. Adapter Parameters

Description	Name	Alias	Value
Connection options	ConnectionOption	CO	See table note [a]
Data rate	DataRate	DR	See table note [b]
Enable BIOS	EnableBIOS [c]	EB	1=Enable, 0=Disable
Enable extended logging	EnableExtendedLogging [d]	EL	1=Enable, 0=Disable
Enable Fibre Channel tape	EnableFCTape	EF	1=Enable, 0=Disable
Enable hard loop ID	EnableHardLoopID	HL	1=Enable, 0=Disable
Enable LIP full login	EnableLIPFullLogin	FL	1=Enable, 0=Disable
Enable LIP reset	EnableLipReset	LP	1=Enable, 0=Disable
Enable target reset	EnableTargetReset	TR	1=Enable, 0=Disable
Execution throttle	ExecutionThrottle	ET	1–65535
Frame size	FrameSize	FR	512, 1024, 2048
Hard loop ID	HardLoopID	HD	0–125
Interrupt delay timer	InterruptDelayTimer	ID	0–255

Table 5-9. Adapter Parameters (Continued)

Description	Name	Alias	Value
Login retry count	LoginRetryCount	LR	0–255
Link down timeout	LinkDownTimeOut	LT	0–240
Maximum LUNs per target	MaximumLUNsPerTarget	ML	0, 8, 16, 32, 64, 128, 256
Operation mode	OperationMode	OM	See table note [e]
Port down retry count	PortDownRetryCount	PD	0–255
Reset Delay	ResetDelay	RD	0-255

Table Notes

[a] Connection Options:
   0 = Loop only
   1 = Point-to-point only
   2 = Loop preferred, otherwise point-to-point
   3 = Point-to-point preferred, otherwise loop (QLA22*xx* adapters only)

[b] Data Rate (QLA23*xx*/QLA24*xx*/QLE23*xx*/QLE24*xx* and QLE2562):
   0 = 1 Gb
   1 = 2Gbs
   2 = Auto
   3 = 4 Gbs
   4 = 8 Gbs

[c] EnableBIOS option not available on 4Gb adapter.

[d] EnableExtendedLogging option not available on PPC64 or SPARC.

[e] Operation mode (QLA/QLE23*xx*, QLA/QLE24*xx*, and QLE2562):
   0 = interrupt for every I/O completion
   5 = interrupt when interrupt delay timer expires
   6 = interrupt when interrupt delay timer expires or no active I/O

NOTE:
> QLA200/210 adapters have a limited set of parameters that can be changed.

-o
(Output to a File)

NOTE:

- The −o option is valid only in noninteractive mode.
- This option can be used with all noninteractive mode options that have a corresponding interactive mode option (see Table 5-1). The option must be the first or last command in the command line.
- If the file already exists, new data are appended to the current file.

To output result and status messages into a file, type −o, followed by the file name. For example, to save LUN information to a file named systemLUNinfo:

```
# qaucli -pr fc -l -o systemLUNinfo
```

Where the file name is systemLUNinfo, all messages are located in the directory indicated for the system platform:

Windows: syslog.log in the current directory

Linux: /var/log/messages

Mac OS: /var/log/system.log

-p
(Display Persistent Target Binding Info)

With this command you can:

- Show binding information for one or on all adapters.
- Bind a specific target to a selected adapter.
- Bind all targets on a specific adapter or on all adapter.
- Unbind a specific target.
- Unbind all targets on a specific adapter or on all adapters.

NOTE:

Under Linux, if you use the IOCTL or sysfs (inbox) driver these features are disabled.

To show target persistent binding information for a specific adapter port, issue the following command:

```
# qaucli -pr fc -p (<hba instance> | <hba wwpn>) (view | info)
```

To show persistent binding information for all adapters, issue the following command:

`qaucli -pr fc -p all (view | info)`

Where:

hba instance =	Adapter number (use `-g` command to find)
hba wwpn =	World wide port name of the adapter

The following example is a typical QConvergeConsole CLI output showing all targets currently bound to an adapter:

```
---------------------------------------------------------------------------
HBA 0: QLA2462 Port 1 WWPN xx-xx-xx-xx-xx-xx-xx-xx Port ID 11-06-EF
---------------------------------------------------------------------------
Bind  Type  Device Node Name        Device Port Name        Port ID   ID
----  ----  ----------------        ----------------        -------   --
No    Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E1
Yes   Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E2  0
Yes   Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E4  1
Yes   Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E8  2
    Press <Enter> to continue:
```

To bind a selected target to a specific adapter, issue the following command:

`qaucli -pr fc -p (<hba instance> | <hba wwpn>) (<target wwnn>`
`<target wwpn> <target port id> <target id>)`

Where:

hba instance =	Adapter number (use `-g` command to find)
hba wwnn =	Word wide node name of the adapter
hba wwpn =	World wide port name of the adapter
target wwnn =	World wide node name of the target
target wwpn =	World wide port name of the target
target port id =	Port ID of the target
target id =	ID to which the target is bound

To bind multiple targets with a single command, repeat the following group:

`<target wwnn> <target wwpn> <target port id> <target id>`

To bind all targets on a specific adapter or to bind all targets on all adapters, issue the following command:

`qaucli -pr fc -p (<hba instance> | <hba wwpn> | all) bind all`

Where:

hba instance =	Adapter number (use `-g` command to find)
hba wwpn =	World wide port name of the adapter

To unbind a specific target, issue the following command:

qaucli -pr fc -p (*<hba instance>* | *<hba wwpn>*) (remove *<target wwnn>* | unbind *<target wwnn>*)

Where:

hba instance	=	Adapter number (use -g command to find)
hba wwpn	=	World wide port name of the adapter
target wwnn	=	World wide node name of the target

To unbind all targets on a specific adapter port or on all adapter ports, issue the following command:

qaucli -pr fc -p (*<hba instance>* | *<hba wwpn>* | all) (remove all | unbind all)

Where:

hba instance	=	Adapter number (use -g command to find)
hba wwpn	=	World wide port name of the adapter

-pa
(Define Port Alias)

With this command you can:

- Define the port alias for a specific adapter port (1)
- Delete the port alias from a specific adapter port (2)
- View the port alias for a specific adapter port (3)

To define a port alias for the specified adapter, issue the following command:

qaucli -pr fc -pa (*<hba instance>* | *<hba wwpn>*) *<alias>*

Where:

hba instance	=	Adapter number (use -g command to find)
hba wwpn	=	World wide port name of the adapter
alias	=	Symbolic name you assign to the adapter port

To delete a port alias for the specified adapter port, issue the following command:

qaucli -pr fc -pa (*<hba instance>* | *<hba wwpn>*) delete

To view a port alias for the specified adapter port, issue the following command:

qaucli -pr fc -pa (*<hba instance>* | *<hba wwpn>*) view | info

-q
(View or Set Target Link Speed)

NOTE:

The `-q` option is supported only on 4Gb adapters.

Issue the following command to view the link speed of all targets attached to one adapter or all adapters:

```
# qaucli -pr fc -q (<hba instance> | <hba wwpn> | <all>) [-targets | -t ]
```

Where:

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
all	=	Reports link speed for all targets on all adapters in the system
-targets	=	All targets
-t	=	All targets

To view the link speed of a specific target attached to an adapter, issue the following command:

```
# qaucli -pr fc -q (<hba instance> | <hba wwpn> | <target wwpn>
```

Where:

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
target wwpn	=	World wide port name of the target

To set the link speed of all targets attached to one adapter or all adapters to the designated speed, issue the following command:

```
# qaucli -pr fc -q (<hba instance> | <hba wwpn> | <all>) <-targets | -t ><speed>
```

Where:

hba instance	=	Adapter number (use -g command to find)
hba wwpn	=	World wide port name of the adapter
all	=	Reports link speed for all targets on all adapters in the system
-targets	=	All targets
-t	=	All targets
speed	=	Link speed (

To set the link speed of selected target(s) attached to one adapter to the designated speed, issue the following command:

```
# qaucli -pr fc -q (<hba instance> | <hba wwpn> | <all>) <target
wwpn> <speed>
```

Where:

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
all	=	Reports link speed for all targets on all adapters in the system
target wwpn	=	World wide port name of the target
speed	=	Link speed

-r
(Update HBA Parameters)

To update the adapter parameters, issue the following command:

```
# qaucli -pr fc -r (<hba instance> | <hba wwpn> | all) <File Name>
```

Where:

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
all	=	All adapter ports in the system are updated with the new adapter parameters
hba parameters file name	=	File name or a path to a file that contains the updated adapter parameters

To save the adapter parameters to a file, issue the following command:

```
# qaucli -pr fc -r (<hba instance> | <hba wwpn>) save <File Name>
```

Where:

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
hba parameters file name	=	File name or a path to a file to save the adapter parameters

-s
(Silent Mode)

> **NOTE:**
> - The `-s` option is valid only in noninteractive mode.
> - You can use this option with all noninteractive mode options that have a corresponding interactive mode option (see Table 5-1). This option must be the first or last command in the command line.

In noninteractive mode, the system shows result and status messages generated by QConvergeConsole CLI (by default) unless suppressed by silent mode. You can combine this option with the `-o` option (see "-o (Output to a File)" on page 5-28) so the output is saved in a file and does not appear in the CLI. For example:

```
# qaucli -pr fc -I all -s -o output.txt
```

-sp
(Update Adapter Firmware)

To update the adapter firmware SerDes table with a file, issue the following command:

```
# qaucli -pr fc -sp <hba instance> | <hba wwpn> <file name>
```

To save the adapter firmware SerDes table to a file, issue the following command:

```
# qaucli -pr fc -sp <hba instance> | <hba wwpn> save
<file name>
```

Where:

hba instance	= Adapter number (use -g command to find)
hba wwpn	= World wide port name of the adapter
file name	= Name of the firmware preload table DAT file.

This feature is supported with 8Gb mezzanine and blade adapters. It is not needed with the standard QLE2562 adapters.

-t
(Display Target Information)

To show the target information for *all* adapters in the system, issue the following command:

```
# qaucli -pr fc -t [ <all> ]
```

To show the target information for a *specific* adapter, issue the following command:

```
# qaucli -pr fc -t (<hba instance> | <hba wwpn>)
```

To show specific target information for a *specific target* on an adapter, issue the following command:

 # qaucli -pr fc -t (*<hba instance>* | *<hba wwpn>*) (*<target wwpn>* | *<target port id>*)

Where:

hba instance	=	Adapter number (use -g command to find)
hba wwpn	=	World wide port name of the adapter
target wwpn	=	World wide port name of the target
target port id	=	Port ID of the target

To show the target information on all adapters, issue the following command:

-t [*<all>*]

To show the target information on a specific adapter, issue the following command:

-t (*<hba instance>* | *<hba wwpn>*)

To show the target information for a specific target on a specific adapter, issue the following command:

-t (*<hba instance>* | *<hba wwpn>*) (*<target wwpn>* | *<target port id>*)

iiDMA (intelligent interleaved direct memory access) settings include:

- —targets | –t applies to all targets.
- <speed> indicates the supported intelligent interleave factor: 1, 2, 4, or 8Gbps.

-tb
(Target Beacon On/Off)

To start or stop flashing a target's LED, issue the following command:

 # qaucli -pr fc -tb (*<hba instance>* | *<hba wwpn>*) (*<target wwpn>*) (<0 | ON> | <1 | PRESET>)

NOTE:

- The <0 | ON> option flashes the LED until interrupted.
  The <1 | PRESET> option flashes the LED 12 times.
- This feature is supported only on JBOD ("just a bunch of disks") devices.

-tp
(Display Host Topology)

Use the `-tp` option to show the topology configuration of the host:

```
# qaucli -pr fc -tp | topology
```

Under Linux, this feature is disabled if you are using the IOCTL or sysfs (inbox) driver.

-u
(Firmware Area Update/Save)

Use the `-u` option to update the firmware preload area of the adapter from a `DAT` file or to save the current firmware preload area of the adapter to a DAT file.

NOTE:

This option is available only for QLE2562.

To update the adapter firmware preload table, issue the following command:

```
# qaucli -pr fc -u ( <hba instance> | <hba wwpn> ) <file name>
```

To save the current adapter firmware preload table to a DAT file, issue the following command:

```
# qaucli -pr fc -u ( <hba instance> | <hba wwpn> ) save <file name>
```

Where:

- *<hba instance>* is the adapter instance number of an adapter port.
- *<hba wwpn>* is the world wide port name of an adapter port.
- *<file name>* is the name of the firmware preload table DAT file.

-v
(Display Version)

NOTE:

This option is valid only in noninteractive mode.

To show the version number of the QConvergeConsole CLI utility, issue the following command:

```
# qaucli -pr fc -v
```

The system shows the following information:

```
QConvergeConsole CLI
v1.x.x Build x
Copyright 2003-2009 QLogic Corp.
All rights reserved.
Command Line QLogic FC Host Bus Adapters.
Build Type: Release
Build Date: xx/xx/xxxx xx:xx:xx AM
```

-vp
(Virtual Port)

To list all virtual ports on a physical adapter port, issue the following command:

qaucli -pr fc -vp (<*hba instance*> : <*hba wwpn*>) list all

Where:

hba instance	=	Adapter number (use `-g` command to find)
hba wwpn	=	World wide port name of the adapter
vport wwpn	=	World wide port name of the virtual port
vport hex	=	World wide port name of the virtual port with the two hex digits in byte three supplied by the user

To list a specific virtual port on a physical adapter port, issue the following command:

qaucli -pr fc -vp (<*hba instance*> : <*hba wwpn*>) list <vport wwpn>

To create a virtual port with an automatic WWPN, issue the following command:

qaucli -pr fc -vp (<*hba instance*> : <*hba wwpn*>) create auto

To create a virtual port with a specific WWPN, issue the following command:

qaucli -pr fc -vp (<*hba instance*> : <*hba wwpn*>) create <vport hex>

When prompted, type two hexadecimal digits. The system checks these digits to be sure they are unique and, if they are, puts them into byte 1 of the WWPN.

To delete all virtual ports on a physical adapter port, issue the following command:

qaucli -pr fc -vp (<*hba instance*> : <*hba wwpn*>) delete all

To delete a specific virtual port on a physical adapter port, issue the following command:

qaucli -pr fc -vp (<*hba instance*> : <*hba wwpn*>) delete <vport wwpn>

-x
(Output in XML Format 1)

> **NOTE:**
>
> This option is valid only in noninteractive mode.

You can use this option with all noninteractive mode options that have a corresponding interactive mode option (see Table 5-1). This option must be the first or last command in the command line.

When you use this option, the system shows all result and status messages in XML format 1, a legacy format. This option is usually combined with the `-o` option (see "-o (Output to a File)" on page 5-28) to create a text file with XML output so that it can be parsed by an XML-compliant utility. For example to show adapter general information and output it to an XML file named `output.xml`:

```
# qaucli -pr fc -i all -x -o output.xml
```

-x2
(Output in XML Format 2)

> **NOTE:**
>
> This option is valid only in noninteractive mode.

You can use this option with all noninteractive mode options that have a corresponding interactive mode option (see Table 5-1). This option must be the first or last command in the command line.

When you use this option, the system shows all result and status messages in XML format 2, standard XML format. This option is usually combined with the `-o` option (see "-o (Output to a File)" on page 5-28) to create a text file with XML output so that it can be parsed by an XML-compliant utility. For example, to show adapter general information and output it to an XML file named `output.xml`:

```
# qaucli -pr fc -i all -x2 -o output.xml
```

-z
(Display All HBA Information for One or All HBAs)

To show all information for one specific adapter or for all adapters in the system, issue the following command:

```
# qaucli -pr fc -z (<hba instance> | <hba wwpn>) | <all>)
```

"Host Configuration (Command Line Option -z)" on page 5-2 covers this command.

6 iSCSI Noninteractive Commands

This chapter describes the noninteractive iSCSI command format and parameters of QConvergeConsole CLI for the QLogic 8242 Converged Network Adapter.

NOTE:

To view help, issue the command **-h**.

Command Format

The noninteractive iSCSI command format is as follows:

```
qaucli -pr iscsi [optional parameters] <Command Option> [Command
Variable] | [Command Variable]
```

Where:

<>	= Parameters in angled brackets are required.
[]	= Parameters in square brackets are optional.
|	= OR operator.
Italicized text	= Placeholder describing the command variable.

Table 6-1 defines the command variables.

Table 6-1. Noninteractive Command Variables

Variable	Definition
hba_port_inst	System port
Target ID	Target ID
LUN ID	Logical unit number (0–255)
CHAP Number	Challange handshake authentication protocol (CHAP) number

Table 6-1. Noninteractive Command Variables (Continued)

Variable	Definition
CHAP Name	Null-terminated CHAP name, which is sent by the port instance when responding to the CHAP challenge
CHAP Secret	CHAP secret, which is used by the port instance when generating the CHAP response
Boot Target	The target ID of the target device from which to boot
Boot LUN	The LUN of the boot device

NOTE:

■ The commands are case sensitive. For example, `-g` is not the same as `-G`.

■ Only one command line option per input file is valid.

■ `<hba_port_inst>` is an instance number from the list of all iSCSI adapter ports in the system. You can see this list with the command `-i`.

The positional parameters vary, depending on the command option specified. For example, to display an adapter's configured settings, use the command option `-C`, followed by the port instance number (positional parameter). In contrast, the command for providing general information, `-g`, has no positional parameters.

In noninteractive mode, most changes made to the port instance become effective immediately. This sometimes causes the adapter to reset, as specified in the command description. Be sure the system is prepared for an adapter reset before making changes.

This remainder of this chapter contains an alphabetical list of QConvergeConsole CLI commands used in noninteractive mode.

Command Summary

This section lists and describes each command line option in alphabetic order, followed by a command description.

-acb

To inquire whether the access method control block (ACB) firmware functions are supported, issue the `-acb` command. In general, up-to-date firmware and driver are required for ACB to be supported.

-addchap
(Add a CHAP Entry)

To add a CHAP entry to the persistent CHAP table, issue the `-addchap` command as follows:

```
-addchap [-BIDI] <hba_port_inst> <CHAP Name> <CHAP Secret>
```

The optional parameter `[-BIDI]` shows that the CHAP entry is BIDI (bidirectional). When this parameter is not specified (default), the CHAP entry is local.

Issuing this command resets the adapter.

-arp
(Display ARP Table)

The address resolution protocol (ARP) cache keeps a record of host port connections with other hardware (such as targets) on the network. The IP address/MAC address pairs are dynamic entries that are removed after 10 minutes. To view the ARP table, issue the `-arp` command as follows:

```
-arp <hba_port_inst>
```

-b
(HBA Reset)

To reset the specified adapter after making configuration changes, issue the `-b` command as follows:

```
-b <hba_port_inst>
```

NOTE:

- Issuing this command resets both ports (0 and 1) on two-port adapters.
- You must disable boot code mode to reset the adapter (see "-bootcodemode (Set BIOS/UEFI [or FCode] Mode)" on page 6-4).

-binfo
(Display BIOS/UEFI [or FCode] Information)

To display the boot code settings for the specified adapter port, issue the `-binfo` command as follows:

```
-binfo <hba_port_inst>
```

-bootcode
(Update BIOS/UEFI [or FCode] Mode)

Boot code (that is, the bootable code image) is code that allows system boot from an iSCSI drive.

The `-bootcode` command updates the boot code image, which should be done when QLogic releases a new boot code with bug fixes or enhancements. At the prompt, type the name of the file containing the boot code image to upload to the adapter.

To update the boot code image, issue the `-bootcode` command as follows:

`-bootcode <hba_port_inst> <Bootcode Code Image File Name>`

-bootcodemode
(Set BIOS/UEFI [or FCode] Mode)

To set the boot code mode for QLA4050, QLA4050C, QLE4060C, QLE4062, and QMC4052 adapters, issue the `-bootcodemode` command as follows:

`-bootcodemode <hba_port_inst> <1>|<2>|<3>`

Where:

> 1 = Disabled
>
> 2 = Manual mode
>
> 3 = DHCP–Root path

If adapter DHCP is enabled (see "-ipdhcp (Configure IP Settings)" on page 6-13), modes 1–3 are allowed. If adapter DHCP is not enabled, boot code DHCP is not allowed. This mode is not supported for QLA4010 adapters. This mode is not active for the PPC.

For IBM cards, the following modes are available:

> 4 = DHCP vendor ID
>
> 5 = DHCP-auto
>
> 6 = Auto
>
> 7 = System mode

NOTE:

> Boot code DHCP is not allowed for QLA4010 adapters.

-c
(Display Configured Port Settings)

To view the configured settings for the port, issue the `-c` command as follows:

`-c [hba_port_inst]`

When you specify a port instance, information for only that adapter is shown. When you do not specify a port instance, information for all adapter ports in the system is shown.

-ch
(HBA Information)

To display the adapter's configured settings, issue the `-ch` command as follows:

`-ch [hba_port_inst]`

When you specify a port instance, information for only that adapter is shown. When you do not specify a port instance, information for all adapter ports in the system is shown.

-chapmap
(Display Targets Using CHAP Entries)

To display the map of targets to CHAP table entries, issue the `-chapmap` command as follows:

`-chapmap <hba_port_inst>`

-cpbootcode
(Clear Primary Boot Target Information)

To clear the primary boot target and LUN, issue the `-cpbootcode` command as follows:

`-cpbootcode <hba_port_inst>`

NOTE:

This command is not active for the PPC.

-csbootcode
(Clear Secondary Boot Target Information)

To clear the secondary boot target and LUN, issue the `-csbootcode` command as follows:

`-csbootcode <hba_port_inst>`

-d
(Install HBA Driver, All Adapters)

To install an adapter driver for all iSCSI adapters on the system from a `.zip` or `.inf` file, issue the `-d` command as follows:

`-d <file_name>`

A system reboot may be required; see the log file for details.

-dc
(Display Destination Cache [IPv6 only])

The IPv6 destination cache contains the IP address, next-hop IP address, and path MTU information about both local and remote destinations. For multicast and on-link unicast destinations, the next-hop IP address always matches the destination IP address. For unicast destinations that are off-link, the next-hop IP address is the IP address of the router.

To display the destination cache, issue the `-dc` command as follows:

```
-dc <hba_port_inst>
```

-dce

To display the connection error logs for up to 100 latest connections, issue the `-dce` command as follows:

```
-dce <hba_port_inst> <target_id> <filename>
```

If `<hba_port_inst>` and `<target_id>` are not specified, all entries for all adapter ports are displayed. If `<filename>` is specified, then the log is written to that file.

-defbidi

To add a default BIDI CHAP entry to the specified `hba_port_inst`, issue the `-defbidi` command as follows:

```
-defbidi <hba_port_inst> <chap_secret>
```

Where `<chap_secret>` is the CHAP secret.

The adapter is reset after this command is issued.

-delchap
(Delete a CHAP Entry)

To delete the specified CHAP entry, issue the `-delchap` command as follows:

```
-delchap <hba_port_inst> <CHAP>
```

Issuing this command resets the adapter.

-df

To view the firmware properties, issue the `-df` command as follows:

```
-df <hba_port_inst>
```

QConvergeConsole CLI displays information about the adapter: model, serial number, port number, iSCSI name, alias, IP address, instance number, and the following firmware information:

- FW information for instance
- FW version

- FW attribute
- FW version 2
- FW attribute 2

-dp

Use the `-dp` command to preinstall an adapter driver specified from a `.zip` or `.inf` file. This operation may be performed without an adapter installed in the system.

You can specify the following actions:

- `p` — Preinstall driver package (default)
- `i` — Install driver package
- `u` — Uninstall driver package
- `g` — Get driver package path

You may also specify the following flags:

- `DRIVER_PACKAGE_FORCE`
- `DRIVER_PACKAGE_LEGACY_MODE`
- `DRIVER_PACKAGE_ONLY_IF_DEVICE_PRESENT`
- `DRIVER_PACKAGE_REPAIR`
- `DRIVER_PACKAGE_SILENT`

You may need to reboot the system following this command. For details about the success or failure of the driver update operation, view the trace log file.

-dr
(Display Default Router List [IPv6 only])

The IPv6 default router list includes both the active default router and a short list of other routers that advertised themselves as capable of acting as a default router. The active default router always appears first in the list.

To view the default router list, issue the `-dr` command as follows:

`-dr <hba_port_inst>`

-dspchap
(Display a CHAP Table)

To view the CHAP table, issue the `-dspchap` command as follows:

`-dspchap <hba_port_inst>`

-dtdsp
(Display Discovered Targets)

To view the discovered targets that are not persistent, issue the `-dtdsp` command as follows:

`-dtdsp <hba_port_inst>`

-dtdspa
(List Targets)

To view discovered targets, including both persistent and nonpersistent, issue the `-dtdspa` command as follows:

`-dtdspa <hba_port_inst>`

If the specified port instance has no targets assigned, the CLI returns an error.

-dtdupd
(Duplicate a Discovered Target)

To duplicate a discovered target that is not persistent, issue the `-dtdupd` command as follows:

`-dtupd <hba_port_inst> <target_instance>`

To obtain the target instance, use the command .

A duplicate target is assigned a new iSCSI initiator ID (ISID) and can then be used to create a redundant path.

-dtdupd
(Duplicate a Persistent Target)

To duplicate a discovered target that is persistent, issue the `-dtdupd` command as follows:

`-dtdupd <hba_port_inst> <target_id>`

A duplicate target is assigned a new iSCSI initiator ID (ISID) and can then be used to create a redundant path.

-dtli
(Login and Persist a Discovered Target)

To log in a specific discovered target, issue the `-dtli` command as follows:

`-dtli <hba_port_inst> <target_instance>`

To obtain the target instance, use the command .

-dtlia
(Login and Persist a Discovered Target)

To log in all discovered targets, issue the `-dtlia` command as follows:

`-dtlia <hba_port_inst>`

-dtrem
(Remove Discovered Target)

To remove a nonpersistent discovered target, issue the `-dtrem` command as follows:

`-dtrem <hba_port_inst> <target_instance>`

To obtain the target instance, use the command "-dtdsp (Display Discovered Targets)" on page 6-7.

-dtrema
(Remove Discovered Target)

To remove all nonpersistent discovered targets, issue the `-dtrema` command as follows:

`-dtrema <hba_port_inst>`

-dumpcore
(Retrieve FW Coredump Record)

To dump the RAM memory to a file name of your choice, issue the `-dumpcore` command as follows:

`-dumpcore <hba_port_inst> <file name>`

-dumpnvram
(Retrieve FW Flash & NVRAM Record)

To dump the NVRAM to a file name of your choice, issue the `-dumpnvram` command as follows:

`-dumpnvram <hba_port_inst> <file name>`

-dv

To see the version of the iSCSI adapter driver(s) installed, issue the `-dv` command as follows.

`-dv`

-edchap
(Edit a CHAP Entry)

To change the value of the specified CHAP entry, issue the `-edchap` command as follows:

`-edchap <hba_port_inst> <CHAP> <Parameter> | <Parameter Alias> <Value> [<Parameter> | <Parameter Alias> <Value> …]`

You can repeat the `<Parameter>|<Parameter Alias> <Value>` parameter pair to change multiple values as shown in Table 6-2. Press ENTER after each entry.

Table 6-2. CHAP Parameters

Parameter	Parameter Alias	Value
CHAPName	CNAME	character string
CHAPSecret	CSECRET	character string
CHAPBidi	CBIDI	on or off

Issuing this command resets the adapter.

-ei

To get information about errors and exit codes for noninteractive mode, issue the `-ei` command as follows (no parameters are required):

```
-ei
```

-f
(Update Firmware Image—Specific HBA)

The firmware runs the tasks involved in data management, the iSCSI protocol, and general adapter functioning. Use the `-f` command to update the firmware image.

To update the adapter firmware from a specified file, issue the `-f` command as follows:

```
-f <hba_port_inst> <file name>
```

Both parameters are required. The <*hba_port_inst*> is the adapter to update. The <*file name*> is the file containing the firmware image to upload to the adapter. Be sure to use full path names. Issuing this command resets the adapter.

-g
(Display General System Information)

To view general system information, issue the `-g` command as follows:

```
-g
```

QConvergeConsole CLI shows the following:

- Host name
- Host version
- Host type
- User type

-gcr
(Retrieve FW Crash Record)

To get crash record information for the specified adapter port, issue the `-gcr` command as follows:

```
-gcr <hba_port_inst> <Crash Output File>
```

-h
(Help)

To view the QConvergeConsole CLI help file, issue the `-h` command as follows:

```
-h
```

For convenience, you can send the output to a file for easier viewing or printing as follows:

```
qaucli -pr iscsi -h >file.txt
```

-i
(List All QLogic iSCSI HBA Ports Detected)

Use the `-i` command to view a list of all detected adapter port instances ("ports") in the system. Each port instance *(hba_port_inst)* is identified by its number.

To view general adapter information, issue the `-i` command as follows:

```
-i [hba_port_inst]
```

When you use `hba_port_inst`, information for only that adapter port instance is shown. When you do not use `hba_port_inst`, information for all ports in the system is shown.

The following adapter (port) information is shown:

- Item number (order in which ports were detected)
- Adapter number, that is, the number of this adapter in the detection process
- Adapter port number (0 or 1) for this adapter
- Port instance number in the system (two-port adapters appear twice)
- Port Instance on the adapter
- Adapter model number (for example, QLA4010)
- Adapter serial number (for example, TFC0105C51704)
- Firmware version (for example, 3.0.1.45)
- Connection medium
- IP address (IP address of the adapter port instance)
- iSCSI name (adapter port iSCSI name; the QLogic default name or one you assign)
- Alias (adapter port instance iSCSI alias name that you assign)

Figure 6-1 shows how to read the display.
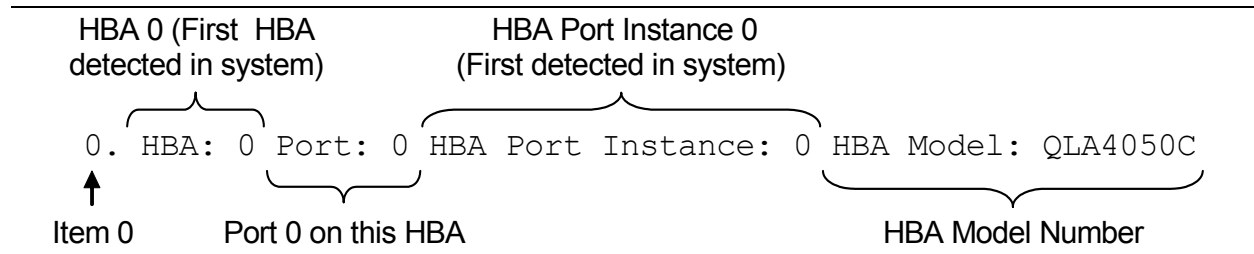
Figure 6-1. Adapter Port Information

The following shows an example of the adapter port information:

```
0. HBA 0 Port: 0 HBA Port Instance: 0 HBA Model: QLA4050C
HBA Serial Number: FS20525B03135FW Version: 2.2.4.45   Type: Copper
IP Address: 192.168.3.7
Alias: iSCSI name: iqn.2000-04.com.qlogic.fs10506a02810.1

1. HBA 1 Port: 0 HBA Port Instance: 1 HBA Model: QLA4062C
HBA Serial Number: AS40637A04673FW Version: 3.0.1.18   Type: Copper
IP Address: 192.168.3.22
Alias:
iSCSI name: iqn.2000-04.com.qlogic.as10506a02810.1

2. HBA 1 Port: 1 HBA Port Instance: 2 HBA Model: QLA4062C
HBA Serial Number: AS40637A04673FW Version: 3.0.1.18   Type: Copper
IP Address: 192.168.3.38
Alias: iSCSI name: iqn.2000-04.com.qlogic.as10506a02810.1

3. HBA 2 Port: 0 HBA Port Instance: 3 HBA Model: QLA4010
HBA Serial Number: FS20407B03135FW Version: 3.0.1.17   Type: Copper
IP Address: 192.168.3.72
Alias: iSCSI name: iqn.1991-05.com.microsoft.steinway.qlogic.org
```

-import
(Import HBA Configuration)

To import an adapter configuration from a file (see "-save (Save Host Configuration)" on page 6-23), issue the -import command as follows:

-import <*hba_no_target*> <*hba_no_Source*> [A] [F N I T C B]
<*file_name*>

Where:

<hba_port_inst>	=	The specific adapter to which the data is written
<hba_port_inst_ source>	=	The file with the adapter configuration you want.
A	=	Configure all imported parameters (F, N, I, T, C, B).
F	=	Configure the firmware.
N	=	Configure the network parameters.
I	=	Configure the iSCSI name.
T	=	Configure the targets.
C	=	Configure the CHAP table.
B	=	Configure the boot parameters (only valid when the T [targets] parameter is also specified).
file_name	=	The XML file with the adapter configuration. See "-save (Save Host Configuration)" on page 6-23).

-ipdhcp
(Configure IP Settings)

To set the adapter to get its IP address, subnet mask, and gateway from the DHCP server, issue the -ipdhcp command as follows:

```
-ipdhcp <hba_port_inst> [-option]
```

If the adapter port had prior values set manually, the DHCP values replace them.

Where [*option*] includes:

-DISN4	=	Disable IPv4 network
-IPV4DHCP	=	Set DHCP ON
-IP	=	Set IP Address
-IPNM	=	Set IP Netmask
-IPGW	=	Set IP Gateway
-DISN6	=	Disable IPv6 network setup
-IPLLA	=	Set local link address automatically
-IPLL	=	Set local link address manually
-IPRA	=	Set IPR0 and IPR1 automatically
-IPR0	=	Set routable address 0 manually
-IPR1	=	Set routable address 1 manually
-IPRAA	=	Set router address automatically
-IPRR	=	Set router address manually

-isns
(Configure iSNS Settings)

To configure the iSNS settings for QLA4010 and QLA405*x*, issue the `-isns` command as follows:

`-isns <hba_port_inst> [iSNS IP Address] [iSNSPORT <port_number>]`

If you do not specify the `[iSNS IP Address]` parameter, the command disables the iSNS client on the specified adapter port.

Issuing this command resets the adapter.

-isns6
(iSNS Settings)

To configure the iSNS settings for IPv6 (QLE406*x* and newer), issue the `-isns6` command as follows:

`-isns <hba_port_inst> [iSNS IPv6-or-IPv4 Address] [-iSNSPORT <port_number>]`

If you do not specify the `[iSNS IPv6-or-IPv4 Address]` parameter, this command disables the iSNS client on the specified adapter port.

Issuing this command resets the adapter.

-l
(List LUN Information)

Use the `-l` command to view the following information about LUNs attached to the selected target:

- Adapter/Target/LUN number
- Vendor name
- Product ID
- Product revision
- LUN size

You can view this information for a specific LUN or for all LUNs attached to the selected target.

To list the LUN information, issue the `-l` command as follows:

`-l <hba_port_inst> <Target ID [LUN ID]>`

If you do not include the `LUN ID` parameter, all the LUNs on the specified target are shown.

-lcd
(Display Configured Link Configuration)

To display the configured link settings, issue the -lcd command. Note that because a system reset is required for changes in link configuration to take effect, the settings shown here may be different than the operating link configuration.

-linkchap
(Assign a CHAP Entry to a Target)

To link a CHAP entry to a target, issue the -linkchap command as follows:

```
-linkchap <hba port#> <chap#> <targetID> [<TGTBCA> <on|off>]
```

Where TGTBCA is an optional parameter to turn BIDI CHAP authentication on or off for this target connection.

For example, to link a CHAP entry 9 on port 2 to target 10 with BIDI CHAP turned on, issue the following command:

```
-linkchap 2 9 10 TGTBCA on
```

This command does *not* reset the adapter.

-lp

The IPv6 local prefix list is created based on prefix information from router advertisements. Destination IP addresses containing these prefixes can be reached directly, without going through an intermediate router.

To display the local prefix list, issue the -lp command as follows:

```
-lp <hba_port_inst>
```

-model

To view the adapter "model(s)" (board type[s]) in the system, issue the -model command as follows:

```
-model
```

-n
(Configure iSCSI Settings)

To set to adapter iSCSI parameters for single-port adapters, issue the -n command as follows:

```
-n <HBA No.> <Config Name|Config Alias> <Value>
[<Config Name|Config Alias> <Value> ...]
```

After you issue this command, the adapter is reset.

You can repeat the *<Config Name|Config Alias> <Value>* parameter set for as many parameters as you want to configure. Table 6-3 lists these parameters and their ranges of values.

Table 6-3. Adapter Parameters

Configuration Name	Configuration Alias	Value
Add Firmware Options		
AFW_AutoConnect	AFWAC	on or off
AFW_Device_Timeout	AFWDT	on or off
AFW_Delayed_Ack	AFWDACK	on or off
ExeThrottle	ET	0–32767
FirstBurstLen	FB	0–32767
IP Options		
IP_ARP_Redirect	IPARP	on or off
IP_Address	IPAD	IP address format
IP_Subnet_Mask	IPSM	IP address format
IP_Gateway	IPGW	IP address format
iSCSI Options		
Force_Negotiate_Main_iSCSI_Keys	—	—
iSCSI_Alias	IALS	on or off
iSCSI_Data_Digests	IDD	on or off
iSCSI_Discovery_Logout	ID	on or off
iSCSI_Header_Digests	IHD	on or off
iSCSI_Immediate_Data	IID	on or off
iSCSI_Initial_R2T	IIR2T	on or off
iSCSI_Snack	ISNACK	on or off
iSCSI_Strict_Login	IS	on or off

Table 6-3. Adapter Parameters (Continued)

Configuration Name	Configuration Alias	Value
TCP Options		
TCP_Auto_Discovery	SLPADIS	on or off
TCP_DHCP	TCPDHCP	on or off
TCP_Nagle	TCPN	on or off
TCPMaxWindowSize	TCPMWS	1000h–FFFFh
TCP_Time_Stamp	TCPTMS	on or off
Miscellaneous Options		
KeepAliveTO	KATO	0–65535
Large_Frames	LRGFRM	on or off[a]
MaxBurstLen	MBL	0–65535
MaxOutstandingR2T	MOR2T	0–65535

[a] Not for QLA4010

-nc
(Display Neighbor Cache)

To display the neighbor cache (IPv6 only), issue the `-nc` command as follows:

```
-nc <hba_port_inst>
```

-netconf
(Configure IPv6 Settings)

To configure the network settings, issue the `-netconf` command as follows:

```
-netconf <hba_port_inst> [-IP <IP address>] [-IPNM <subnet mask>]
[-IPGW <gateway IP address>]
```

Where:

`IP <IP address>`	= Set the IP address of the adapter
`IPNM <subnet mask>`	= Set the subnet mask of the adapter
`-IPGW <gateway address>`	= Set the gateway
`-DISN4`	= Disable IPv4 network setup
`-IPv4DHCP`	= Set DHCP on

Setting the IP address, subnet mask, or gateway turns off DHCP address resolution for the IP configuration, if it is on.

-netconf6
(Configure IPv6 Settings)

To manually configure the IPv6 network settings, issue the `-netconf6` command as follows:

```
-netconf6 <hba_port_inst> [-IP <IPv6 Address>] [-IPNM <Subnet
Mask> <IPv6>] [-IPGW <Gateway Address>]
```

Where [*option*] includes the following:

`IP <IP Address>`	= Set the IP address of the adapter
`-IPNM <Subnet Mask>`	= Set the subnet mask of the adapter
`-IPGW <Gateway Address>`	= Set the gateway
`-DISN4`	= Disable IPv4 network setup [a]
`-IPV4DHCP`	= Set DHCP on [b]
`-IP`	= Set IP address
`-IPNM`	= Set IP netmask
`-IPGW`	= Set IP gateway
`-DISN6`	= Disable IPv6 network setup [c]
`-IPLLA`	= Automatically set local link address [d]
`-IPLL`	= Manually set local link address
`-IPR01A`	= Automatically set IPR0 and IPR1 [e]
`-IPR0`	= Manually set routable address 0 [e]
`-IPR1`	= Manually set routable address 1 [e]
`-IPRRA`	= Automatically set router address [f]
`-IPRR`	= Manually set router address [f]

Notes

[a] Mutually exclusive with the other IPv4 commands

[b] Mutually exclusive with `-IP/-IPNM/IPGW`

[c] Mutually exclusive with `-IPLLA/-IPLL`

[d] Manual or automatic—mutually exclusive

[e] Manual or automatic—mutually exclusive

[f] Manual or automatic—mutually exclusive

Setting the IP address, subnet mask, or gateway turns off DHCP address resolution for the IP configuration, if it is on. Some examples of usage follow.

To set only the local link address, issue the following command:

`-netconf6 0 -IPLL fe80::1`

To set everything automatically, issue the following commmand:

`-netconf6 0 -IPLLA -IPR01A -IPRRA`

To disable the IPv4 network, issue the following command:

`-netconf6 0 -DISN4`

To disable the IPv4 and IPv6 networks, issue the following command:

`-netconf6 0 -DISN4 DISN6`

-nh
(Configure iSCSI Settings)

To set the adapter-level parameters for multiport adapters, issue the `-nh` command as follows:

`-nh <hba_port_inst> <Config name | Config alias> <Value> [<<Config name | Config alias>> <Value> ...]`

The valid parameters and their values are shown in Table 6-3.

-pa
(Add a Target)

To add persistent targets, issue the `-pa` command as follows:

`-pa <hba_port_inst> <IP Address> [-PORT port number] [-INAME iSCSI Name]`

If you do not specify a port number `[-PORT port number]`, QConvergeConsole CLI uses the default number 3260. If you do not specify an iSCSI name `[-INAME iSCSI Name]`, QConvergeConsole CLI uses the default value, an empty string.

-pad

To view all targets for a port, issue the `-pad` command as follows:

`-pad <hba_port_inst>`

-pb
(Bind Target)

To bind a target (make it persistent), issue the `-pb` command as follows:

`-pb <hba_port_inst> <Target ID>`

-pbootcode
(Set Primary Boot Target Information)

To set the primary boot code boot target and LUN, issue the `-pbootcode` command as follows:

`-pbootcode <hba_port_inst> <tgt> <lun>`

This command is not active for the PPC.

For information on secondary boot code, see "-sbootcode (Set Secondary Boot Target Information)" on page 6-24.

-pdt

To disable a target, issue the `-pdt` command as follows:

```
-pdt <hba_port_inst> <targetId>
```

-pet

To enable a target, issue the `-pet` command as follows:

```
-pet <hba_port_inst> <targetId>
```

-pinfo
(Port Information)

To view port information for the specified adapter, issue the `-pinfo` command as follows:

```
-pinfo <hba_port_inst>
```

-ping
(Ping Target)

To ping the target device, issue the `-ping` command as follows:

```
-ping <hba_port_inst> <IP Address> <Ping Count> <Packet size>
<IPv6 source address>
```

The following provides the `IPv6 source address` values:

0	=	Do not care
1	=	Local link
2	=	Address 0
3	=	Address 1

Where:

hba_port_inst	=	The adapter port that sends the ping
IP Address	=	The IP address to ping
Ping Count	=	The number of ping packets you want ($1–[2^{31}]$).
Packet Size	=	The size of the ping packet 0–64kB
IPv6 Source Address	=	Origin device

-ps

To view persistent targets for the adapter port, issue the `-ps` command as follows:

`-ps <hba_port_inst> [Target ID]`

If you do not specify the `[Target ID]`, QConvergeConsole CLI lists all targets for the specified adapter port number. If you do not specify the port instance `[hba_port_inst]` or the target ID, `[Target ID]`, QConvergeConsole CLI lists all target IDs for all adapter ports in the system.

-pu

To unbind a persistent target, issue the `-pu` command as follows:

`-pu <hba_port_inst> <Target ID>`

-px

To unbind all persistent targets on the adapter, issue the `-px` command as follows:

`-px <hba_port_inst>`

-r
(Update ROM Image)

CAUTION!

- Before attempting to update the ROM image, contact QLogic Customer Support.
- Before updating the ROM image, ensure that no I/O processes are running.
- An administrator must take necessary actions to ensure changes are fully recognized by the operating system (reboot, flush cache, sync disk, and so forth).
- A ROM update and reset are performed that requires that all applications accessing impacted LUNs must be shut down.
- Any impacted systems must be unmounted.

Be sure to select **Save changes and reset HBA** afterwards; otherwise, the changes do not take effect.

Type the following command to update the specified adapter's ROM:

`-r <hba_port_inst> <file_name>`

The `<hba_port_inst>` parameter is the adapter instance to update. The `<file_name>` parameter indicates the file containing the ROM image to upload.

-rdf

To restore the specified adapter port's firmware values to the factory default values, issue the -rdf command:

```
-rdf <hba_port_inst>
```

Issuing this command resets the adapter.

-rdh
(Port Restore Factory Defaults)

NOTE:

The -rdh command is not supported in the QLA4010 adapter.

Type the following command to restore the specified adapter port's settings to their factory defaults:

```
-rdh <hba_port_inst> [A] [F N I T C V]
```

Where:

hba_port_inst	=	Adapter port whose factory settings you want to restore.
A	=	Restore the factory settings for the entire adapter (firmware parameters, network parameters, iSCSI name, targets, CHAP table, NVARAM, and IPsec).
		Issuing this command resets the adapter. If you use this option, no others are necessary.
F	=	Restore firmware parameters to the factory default values.
		Issuing this command resets the adapter.
N	=	Restore network parameters to the factory default values.
		Issuing this command resets the adapter.
I	=	Restore the iSCSI name to the factory default value.
		Issuing this command resets the adapter.
T	=	Restore the targets to the factory default values.
C	=	Restore the CHAP table to the factory default values.
V	=	Restore the NVRAM to the factory default values.

If you want to restore all areas of the adapter port, either use the A parameter or use no parameter. Otherwise, specify which areas to restore. For example, the following command restores the firmware and NVRAM to the factory defaults:

```
-rdh <hba_port_inst> F N
```

-rwt
(Perform Read/Write Buffer Test)

CAUTION!

Before doing a read/write buffer test, make sure that the adapter does not have any outstanding I/O operations.

The read/write buffer test writes an 8- or 16-byte pattern to the disk's buffer and reads the written buffer back. It is nondestructive to disk data.

To do a read/write buffer test, issue the `-rwt` command as follows:

```
-rwt <hba_port_inst> [-STOP] [-RWPAT n] [-CNT <Test Count>]
```

Where:

`-STOP`	=	Stop the test if a failure occurs.
`-RWPAT n`	=	Set the pattern to write to the buffer, one of the following:
		n = 1 (8 bytes of 0x55h) (default)
		n = 2 (8 b.0tes of 0x5Ah)
		n = 3 (16 bytes of 0xAAh)
		n = 4 (16 bytes of 0xFFh)
hba_port_inst	=	The adapter port tested.
`-CNT`	=	Used with *Test Count* to set the number of tests, with one test as default.
Test Count	=	The number of tests to do, with one as default. Type a number between $2–(2^{31})$ for more than one test.

To continue, press ENTER.

-save
(Save Host Configuration)

To save the configuration (in XML) of all adapters detected, issue the `-save` command as follows:

```
-save <file_name>
```

-sbootcode
(Set Secondary Boot Target Information)

To set the secondary boot target and LUN, issue the `-sbootcode` command as follows:

```
-sbootcode <hba_port_inst> <Boot Target> <Boot LUN>
```

Issuing this command saves the configuration data to an XML file portable to all platforms supported by iSCSI. This command is not active for PPC.

For primary boot code, see "-pbootcode (Set Primary Boot Target Information)" on page 6-19.

-sbootcodecid
(Set Alternative Client ID)

To set the alternative client ID (seven characters maximum), issue the `-sbootcodecid` command as follows:

```
-sbootcodecid <hba_port_inst> <Alternative Client ID>
```

This command is not active for the PPC.

-sdmrc

To return the SDM library return code, issue the `-sdmrc` command as follows:

```
-sdmrc [Simple_Pattern]
```

When [*simple pattern*] is given, only the lines containing that string are printed.

-stadd

To add a send target for discovery, issue the `-stadd` command as follows:

```
-stadd <hba_port_inst> <ip address> [chapIndex] [<TGBCA> <value>]
```

Where <*value*> can be **on** or **off**; **on** causes the send target login to require bidirectional CHAP.

NOTE:

> To use the `-stdsp`, `-strd`, and `-strem` commands, you must first issue the `-stadd` command at least once to add a send target for discovery only (no target login). After using the `-stadd` command to add at least one send target for discovery only, then you can use the -stdsp command to display all send targets for discovery, along with the appropriate index to be used for the `-strd` and -strem commands. The `-strd` command (with the target instance from the `-stdsp` command) must be used to perform the send target discovery to discover all target portals.
>
> After a send target for discovery only has been added by means of the `-stadd` command and discovered by the `-strd` command, or the iSNS has been configured (with a valid iSNS server), a list of targets and target portals is discovered. When you issue the `-dtdsp` command, the discovered target portals are displayed. The displayed discovered target portals are not logged into targets at this time, but are local to the QConvergeConsole CLI and are available for login. To log a discovered target portal into a target, issue the `-dtli` command. To log all discovered target portals into targets, issue the `-dtlia` command. To remove discovered target portals from the list, issue the `-dtrem` command.

-stat
(Display Port Statistics)

To view the port statistics for the specified adapter, issue the `-stat` command as follows:

`-stat <hba_port_inst>`

-stathba

To display adapter-level statistics, issue the `-stathba` command as follows:

`-stathba <hba_port_inst>`

-stdsp

To view the send targets, issue the `-stdsp` command as follows:

`-stdsp <hba_port_inst>`

To use the `-stdsp` command, you must first issue the `-stadd` command at least once to add a send target for discovery only. For more information, see "-stadd" on page 6-24.

-strd

To execute a rediscovery of targets for the specified send target, issue the `-strd` command as follows:

`-strd <hba_port_inst> <target_instance>`

To obtain the target instance, use the `-dtdsp` command.

To use the `-strd` command, you must first issue the `-stadd` command at least once to add a send target for discovery only. For more information, see "-stadd" on page 6-24.

-strem

To remove the specified send target, issue the `-strem` command as follows:

`-strem <hba_port_inst> <target_instance>`

To obtain the target instance, use the `-dtdsp` command.

To use the `-strem` command, you must first issue the `-stadd` command at least once to add a send target for discovery only. For more information, see "-stadd" on page 6-24.

-strema

To remove all send targets, issue the `-strema` command as follows:

`-strema <hba_port_inst> <target_instance>`

-t
(Display Target Information)

To view target information, issue the `-t` command as follows:

`-t <hba_port_inst> [Target ID]`

If you only specify the `<hba_port_inst>` parameter, QConvergeConsole CLI lists target information for all targets on the specified adapter port. If you specify the optional parameter `[Target ID]`, QConvergeConsole CLI lists information on the specified target only. This includes both persistent and dynamic targets.

-tc
(Configure Target Parameters)

To set target parameter settings, use the `-tc` command. For a list of target parameters you can configure, issue the following command:

`-tc <hba_port_inst> < Target_ID > <config_name | config_alias> <value> <config_name | config_alias> <value>`

-tp

To see information stored in Flash memory about persistent targets, issue the `-tp` command. If you enter only the adapter port instance number, QConvergeConsole CLI returns information for all targets of that adapter port instance. If you enter the optional target ID, QConvergeConsole CLI returns information for that target only, for example:

```
-tc <hba_port_inst> <Target_ID>
```

-ts

To see summary information about both persistent and nonpersistent targets, issue the `-ts` command as follows:

```
-ts [hba_port_inst] [Target_ID]
```

-ver
(Display Program Version Information)

To view the QConvergeConsole CLI utility version, issue the `-ver` command as follows:

```
-ver
```

-vpd
(Display VPD Information)

To view VPD information, if any, issue the `-vpd` command as follows:

```
-vpd <hba_port_inst>
```

Available VPD information varies by adapter manufacturer. QLogic adapters ship with VPD information shown as `N/A`.

7 NIC Partitioning (NPAR) Noninteractive Commands

This chapter describes the noninteractive NIC partitioning (NPAR) command format and parameters of QConvergeConsole CLI.

For an overview of NPAR, refer to Appendix A. NPAR is supported by the 3200 Series Intelligent Ethernet Adapters, and the 8200 Series Converged Network Adapters.

NOTE:

To view the help, issue the -h command.

Command Format

Noninteractive mode syntax includes the following:

qaucli -npar <switch> [<parameters>]

Where *switch* is one of the following:

- -ainfo (Get NPAR Adapter Information)
- -changepersonality (Change Physical Function Personality)
- -ei (Get NPAR Command Line Return Codes)
- -eswitchinfo (Get NPAR eSwitch Information)
- -eswitchstats (Display eSwitch Statistics)
- -eswitchvportstats (Display eSwitch NPAR Statistics)
- -feswitchcfg (Change eSwitch Configuration—Physical Function)
- -finfo (Get NPAR Physical Function Information)
- -h (Help), -?, ?
- -ia (Enumerate NPAR Adapters)
- -if (Enumerate NPAR Physical Functions)
- -ip (Enumerate NPAR Physical Ports)
- -peswitchcfg (Change eSwitch Configuration—Physical Port)
- -pinfo (Get NPAR Port Information)
- -restoreeswitchcfg (Restore eSwitch Configuration)
- -setmaxbw (Set Maximum Bandwidth)
- -setminbw (Set Minimum Bandwidth)

Command Summary

This section lists and describes each NPAR command in alphabetic order, followed by a command description.

-ainfo
(Get NPAR Adapter Information)

To get NPAR adapter information, issue the following command:

```
> qaucli -npar -ainfo <adapter_inst>
```

where

- *<adapter_inst>* is the adapter number displayed by the `-ia` command.

-changepersonality
(Change Physical Function Personality)

To change the physical function's personality, issue the following command:

```
> qaucli -npar -changepersonality <func_inst> <personality>
```

where

- *<func_inst>* is the physical function number displayed by the `-if` command.
- Specify one of the following for the *<personality>* parameter:
  - ❑ Specify `nic` to change the personality type to NIC.
  - ❑ Specify `iscsi` to change the personality type to iSCSI.
  - ❑ Specify `fcoe` to change the personality type to FCoE.
  - ❑ Specify `disable` to disable the function.

-ei
(Get NPAR Command Line Return Codes)

To get NPAR command line return codes, issue the following command:

```
> qaucli -npar -ei
```

-eswitchinfo
(Get NPAR eSwitch Information)

To get NPAR eSwitch information, issue the following command:

```
> qaucli -npar -eswitchinfo <port_inst>
```

where

- *<port_inst>* is the physical port number displayed by the `-ip` command.

-eswitchstats
(Display eSwitch Statistics)

To display eSwitch statistics, issue the following command:

> **`> qaucli -npar -eswitchstats <port_inst>`**

where

- `<port_inst>` is the physical port number displayed by the `-ip` command.

-eswitchvportstats
(Display eSwitch NPAR Statistics)

To display eSwitch NPAR statistics, issue the following command:

> **`> qaucli -npar -eswitchvportstats <func_inst>`**

where

- `<func_inst>` is the physical function number displayed by the `-if` command.

-feswitchcfg
(Change eSwitch Configuration—Physical Function)

To change eSwitch physical function configuration, issue the following command:

> **`> qaucli -npar -feswitchcfg <func_inst> <option> <value>`**

where

- `<func_inst>` is the physical function number displayed by the `-if` command.
- `<option>` and `<value>` are one of the option/value pairs listed in Table 7-1.

Table 7-1. eSwitch Physical Function Options

Option	Value
discard_tagged	1 (Enable) or 0 (Disable) discard tagged configuration
mac_addr_change	1 (Enable) or 0 (Disable) MAC address change configuration
mac_anti_spoof_chk	1 (Enable) or 0 (Disable) MAC anti-spoof check
promisc_mode	1 (Enable) or 0 (Disable) promiscuous mode configuration
rx_mcast_rep	1 (Enable) or 0 (Disable) receive multicast configuration
tx_mcast_rep	1 (Enable) or 0 (Disable) transmit multicast configuration
vlan_id	VLAN ID value
vlan_filter	1 (Enable) or 0 (Disable) VLAN filter configuration
vlan_strip	1 (Enable) or 0 (Disable) VLAN stripping configuration

-finfo
(Get NPAR Physical Function Information)

To get NPAR physical function information, issue the following command:

```
> qaucli -npar -finfo <func_inst>
```

where

■ *<func_inst>* is the physical function number displayed by the `-if` command.

-h
(Help)

To get detailed information on the NPAR command and its options, issue the following command:

```
> qaucli -npar -h
```

The following are alternate forms of this command:

```
> qaucli -npar -help
> qaucli -npar -?
> qaucli -npar ?
```

-ia
(Enumerate NPAR Adapters)

To enumerate NPAR adapters, issue the following command:

```
> qaucli -npar -ia
```

-if
(Enumerate NPAR Physical Functions)

To enumerate NPAR physical functions, issue the following command:

```
> qaucli -npar -if
```

-ip
(Enumerate NPAR Physical Ports)

To enumerate NPAR physical ports, issue the following command:

```
> qaucli -npar -ip
```

-peswitchcfg
(Change eSwitch Configuration—Physical Port)

To change eSwitch physical port configuration, issue the following command:

> **`> qaucli -npar -peswitchcfg <port_inst> <option> <value>>`**

where

Table 7-2. eSwitch Physical Port Options

Option	Value
ipv4_tso	Enable (1) or disable (0) IPv4 TSO configuration
ipv6_tso	Enable (1) or disable (0) IPv6 TSO configuration
layer4_co	Enable (1) or disable (0) Layer 4 checksum offload configuration

-pinfo
(Get NPAR Port Information)

To get NPAR port information, issue the following command:

> **`> qaucli -npar -pinfo <port_inst>`**

where

- *`<port_inst>`* is the physical port number displayed by the `-ip` command.
- *`<func_inst>`* is the physical function number displayed by the `-if` command.

-restoreeswitchcfg
(Restore eSwitch Configuration)

To restore eSwitch configuration, issue the following command:

> **`> qaucli -npar -restoreeswitchcfg`**

The eSwitch configuration information is restored from the `eswitch.cfg` file in the installation directory.

-setmaxbw
(Set Maximum Bandwidth)

To set NPAR maximum bandwidth value, issue the following command:

> **`> qaucli -npar -setmaxbw <func_inst> <max_bw_value> [-p]`**

where

- *`<func_inst>`* is the physical function number displayed by the `-if` command.
- <*`max_bw_value`*> is the maximum bandwidth value to set.
- [`-p`] is an optional parameter; if specified, the maximum bandwidth will persist across system reboots.

-setminbw
(Set Minimum Bandwidth)

To set NPAR minimum bandwidth value, issue the following command:

```
> qaucli -npar -setminbw <func_inst> <min_bw_value> [-p]
```

where

- *<func_inst>* is the physical function number displayed by the `-if` command.

- *<min_bw_value>* is the minimum bandwidth value to set.

- [-p] is an optional parameter; if specified, the minimum bandwidth will persist across system reboots.

8 NIC Interactive Commands

This chapter describes the interactive mode command line options for Intelligent Ethernet Adapters. The interactive mode uses a series of menus from which you select the option you want and type the number for that option.

For information on noninteractive mode operation—in which you simply enter a one- or two-letter code to perform operations on the adapter—refer to Chapter 4 NIC Noninteractive Commands.

This chapter uses a "breadcrumbs" line following most section headings that shows how to access that option; that is, it shows the hierarchical path from the top level to the command under discussion. For example, to reach the **Flash Update** option for Converged Network Adapters from the Main Menu, select option **3** to choose **Adapter Updates**, **1** to select the **Converged Network Adapter** type, and then **1** to see the **Flash Update** option. The following shows the breadcrumbs example:

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 1. Flash Update

The Main Menu is as follows:

```
Main Menu

1:   Adapter Information
2:   Adapter Configuration
3:   Adapter Updates
4:   Adapter Diagnostics
5:   Adapter Statistics
6:   Refresh
7:   Help
8:   Exit

     Please Enter Selection:
```

Adapter Information

1. Adapter Information ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Information** option, and then select the adapter type (**Converged Network Adapter**). The Converged Network Adapter Information menu presents options for viewing information about the adapter, ports, and VPDs. For example:

```
Adapter Type Selection

1:   Converged Network Adapter
2:   Fibre Channel Adapter

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1

Converged Network Adapter Information

1:   CNA Adapter Information
2:   CNA Port Information
3:   CNA VPD Information
```

CNA Adapter Information (-icna)

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 1. CNA Adapter Information

From the Converged Network Adaptor Information menu, select the **CNA Adapter Information** option. From the adapter menu, and then select the adapter (**CNA Model**) for which to view adapter information. For example:

```
CNA Adapter Information

 1: CNA Model: QLE3242  SN: AFE1030C04339
       Port   2 [Protocol(s): NIC]
       Port   1 [Protocol(s): NIC]

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 1
-------------------------------------------------------------------
Hostname                  : amd-28
Adapter Model             : QLE3242
Chip Model                : 8020
Chip Version              : B0
Adapter Alias             : None
Serial Number             : AFE1030C04339
MAC Address Function 1     : 00:0e:1e:04:d3:34
MAC Address Function 0     : 00:0e:1e:04:d3:30
Driver Information         : qlcnic.ko
Driver Name               : qlcnic
Driver Version            : 5.0.12
Active Firmware Version    : 4.07.31
Flash Package Version      : 1.4.37
PXE Boot Version          : 2.0.3.06 (35.06 )
VLAN & Team Driver Name    :
VLAN & Team Driver Version  :
-------------------------------------------------------------------
```

CNA Port Information (-pinfo)

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 2. CNA Port Information

From the Converged Network Adaptor Information menu, select the **CNA Port Information** option. From the port menu, select a port for which to view port information. For example:

```
Converged Network Adapter Information

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
   2. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1
-------------------------------------------------------------------

Hostname                    : amd-28
Adapter Model               : QLE3242
Port Alias                  : None
Physical MAC Address        : 00:0e:1e:04:d3:34
Physical MAC Address Alias  : None
Active/LAA MAC Address       : 00:0e:1e:04:d3:34
Active/LAA MAC Address Alias: None
IPv4 Address                :
IPv4 Subnet Mask            :
IPv4 Default Gateway        :
IPv4 DHCP Enabled           : No
DHCP Servers                : Not Available
DNS Servers                 : Not Available
IPv6 Addresses              : Not Available
IPv6 Default Router         : Not Available
Link Status                 : Down
MTU                         : 1500
Interface Scope ID          :
Interface Speed             : 10 Gbps
Interface Description       : QLE3242 QLogic Pci Express to 10GbE
Dual Channel
-------------------------------------------------------------------
```

CNA VPD Information (-i)

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 3. CNA VPD Information

From the Converged Network Adaptor Information menu, select the **CNA VPD Information** option. From the port menu, select a port for which to view VPD information. For example:

```
Converged Network Adapter Information
CNA Model QLE3242  SN: AFE1030C04339
   1. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
   2. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1
-------------------------------------------------------------------
VPD
Description                   : QLogic PCIe Dual Port 10GbE Adapter
Part Number                   : QLE3242
Serial Number                 : AFE1030C04339
Manufacturing Id              : NE3210404-02  A
Flash Image Version           : 010437
-------------------------------------------------------------------
```

Adapter Configuration

2. Adapter Configuration ▶ 1. CNA Configuration

From the main menu, select the **Adapter Configuration** option, and then select the adapter type (**CNA Configuration**). The Converged Network Adapter (CNA) NIC Configuration menu presents options to configure the adapter alias and the NIC port settings. For example:

```
Adapter Type Selection

1:  CNA Configuration
2:  Fibre Channel Configuration

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter (CNA) NIC Configuration

1:  Adapter Alias
2:  NIC Port Setting Configuration
```

Adapter Alias (-nh)

2. Adapter Configuration ▶ 1. CNA Configuration ▶ 1. Adapter Alias

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **Adapter Alias** option. From the port menu, select a port for which assign an alias. For example:

```
Converged Network Adapter (CNA) NIC Configuration

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
   2. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
CNA_Alias [None]:adapter_alias
```

NIC Port Setting Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **NIC Port Setting Configuration** option. From the port menu, select a port to present the Port Settings Menu with options to view configured port settings, configure port settings, change the port alias, change the MAC alias, and save the port configuration. For example:

```
Converged Network Adapter (CNA) NIC Configuration

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
   2. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1

Port Settings Menu

=======================================================
CNA           : 0 Port 2
SN            : AFE1030C04339
CNA Model     : QLE3242
CNA Desc.     : QLE3242 QLogic Pci Express to 10GbE Dual Channel
Ethernet Adapters
MPI Fw Version: 4.07.31
Physical MAC  : 00-0E-1E-04-D3-34
LAA MAC       : 00-0E-1E-04-D3-34
IPv4 Address  : 0.0.0.0
Link          : Down
=======================================================
   1:  Display Configured Port Settings
   2:  Configure Port Settings
   3:  Change Port Alias Name
   4:  Change MAC Alias Name
   5:  Save Port Configuration
```

Display Configured Port Settings (-iset)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸
1. Display Configured Port Settings

From the Port Settings Menu, select the **Display Configured Port Settings** option to view the configure port parameters. For example:

```
IPv4_Checksum_Offload_Enable        : RxTx
Jumbo_Frames_MTU_9000_Enable        : off
LOCAL_Administered_Address_MAC      : 00:0e:1e:04:d3:34
Port_Alias                          : None
Port_Wake_On_LAN_Option             : Disabled
Port_PXE_Enable                     : off
Flow_Control                        : Rx Tx Enabled
Max_Jumbo_Buffers                   : 1024
Receive_Buffer_Count                : 4096
Transmit_Buffer_Count               : 1024
```

Configure Port Settings

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸
2. Configure Port Settings

From the Port Settings Menu, select the **Configure Port Settings** option to configure port parameters. For example:

```
IPv4_Checksum_Offload_Enable (off, Rx, Tx, RxTx)[RxTx]:
Jumbo_Frames_MTU_9000_Enable (on, off)[off]:
WOL available options:
 0 = Disabled,
 1 = Wake on Magic Frame,
Port_Wake_On_LAN_Option [Disabled]:
Port_PXE_Enable (on, off)[off]:
Flow_Control (Rx, RxTx)[Rx Tx Enabled]:
Max_Jumbo_Buffers (128, 256, 512, 1024)[1024]:
Receive_Buffer_Size (1024, 2048, 4096, 8192)[4096]:
Transmit_Buffer_Size (128, 256, 512, 1024)[1024]:
```

Change Port Alias Name (-n)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸
3. Change Port Alias Name

From the Port Settings Menu, select the **Change Port Alias Name** option to change the port alias. For example:

```
Port_Alias [None]: port_alias
Successfully saved Port Alias
```

Change MAC Alias Name (-n)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸
4. Change MAC Alias Name

From the Port Settings Menu, select the **Change MAC Alias Name** option to change the aliases for the physical MAC address alias and the active/LAA MAC address. For example:

```
Physical MAC Address      : 00:0e:1e:04:d3:34
Enter Port_Physical_MAC_Alias [None]: physicalmac_alias
Successfully saved MAC Alias
Active/LAA MAC Address     : 00:0e:1e:04:d3:34
Enter Port_LAA_MAC_Alias [None]: activemac_alias
Successfully saved MAC Alias
```

Save Port Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸
5. Save Port Configuration

From the Port Settings Menu, select the **Save Port Configuration** option to save changes to the port parameters and aliases.

```
Only save parameters that were modified? (yes, no) [yes]:yes
About to save configured values ... Please wait ...
```

Adapter Updates

3. Adapter Updates ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Information** option and then select the adapter type (**Converged Network Adapter**). The CNA Adapter Update menu presents an option to update Flash memory. For example:

```
Adapter Type Selection
1:  Converged Network Adapter
2:  Fibre Channel Adapter
    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

CNA Adapter Update
1:  Flash Update
```

Flash Update (-updimages)

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 1. Flash Update

From the CNA Adapter Update menu, select the **Flash Update** option to update flash memory. From the adapter menu, select an adapter for which to update flash memory, and then type the name of the file that contains the Flash image. For example:

```
Flash Update

 1: CNA Model: QLE3242  SN: AFE1030C04339
        Port  2 [Protocol(s): NIC]
        Port  1 [Protocol(s): NIC]

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1
Enter file name containing image:image_filename
```

Adapter Diagnostics

4. Adapter Diagnostics ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Diagnostics** option, and then select the adapter type **(Converged Network Adapter)**. The Converged Network Adapter (CNA) Diagnostics menu presents options to test registers, test hardware, test interrupts, test links, test ports, test links, and test LEDs. For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter (CNA) Diagnostics

1:  Register Test
2:  Hardware Test
3:  Interrupt Test
4:  Loopback Test
5:  Link Test
6:  Beacon/LED Test
```

Register Test (-testregister)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 1. Register Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Register Test** option. From the port menu, select a port for which to test the Converged Network Adapter (CNA) Diagnostics

```
    CNA Model QLE3242  SN: AFE1030C04339
       1. Port   2 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:34
       2. Port   1 [Protocol(s): NIC]
          MAC Address: 00:0E:1E:04:D3:30

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 1
Register Test Starts ...

Test Status:           Passed  (Passed=1, Failed=0, ErrorCode=0)
Register Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0

  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Hardware Test (-testhw)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 2. Hardware Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the
Hardware Test option. From the port menu, select a port for which to test the
hardware. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
   2. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1
Hardware Test Starts ...

Test Status:     Passed  (Passed=1, Failed=0, ErrorCode=0)
Hardware Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Interrupt Test (-testinterrupt)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 3. Interrupt Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the
Interrupt Test option. From the port menu, select a port for which to test the
interrupts. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
   2. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1
Interrupt Test Starts ...

Test Status:         Passed  (Passed=1, Failed=0, ErrorCode=0)
Interrupt Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Loopback Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 4. Loopback Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the
Loopback Test option. From the port menu, select a port to test the port.

Link Test (-testlink)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 5. Link Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Link Test** option. From the port menu, select a port to test the links. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE3242  SN: AFE1030C04339
    1. Port   2 [Protocol(s): NIC]
       MAC Address: 00:0E:1E:04:D3:34
    2. Port   1 [Protocol(s): NIC]
       MAC Address: 00:0E:1E:04:D3:30

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1
Link Test Starts ...

Test Status:         Failed  (Passed=0, Failed=1, ErrorCode=15)
Link Test Results:
  Status=Failed
  Passed=0,  Failed=1, ErrorCode=15
```

Beacon/LED Test (-testled)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 6. Beacon/LED Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Beacon/LED Test** option. From the port menu, select a port to run the test. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
   2. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
LED Test Starts ...

Test Status:  Failed  (Passed=0, Failed=1, ErrorCode=1)
LED Test Results:
  Status=Failed
  Passed=0,  Failed=1, ErrorCode=1
```

Adapter Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Statistics** option and then select **1** (**Converged Network Adapter**). The Converged Network Adapter (CNA) Statistics menu presents options to view NIC port statistics, reset logging parameters, and undo. For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter (CNA) Statistics

1:  Display NIC Port Statistics
2:  Reset NIC Statistics
3:  Undo Reset NIC Statistics
```

Display NIC Port Statistics (-statport)

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 1. Display NIC Port Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Display NIC Port Statistics** option. From the port menu, select a port for which to view NIC port statistics. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
   2. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1

Ethernet Port Statistics:

txPkts                  : 0
txOctets                : 0
txMulticastPkts         : 0
txBroadcastPkts         : 0
txUnicastPkts           : 0
txControlPkts           : 0
txPausePkts             : 0
txPkts64Octets          : 0
.
.
.
```

Reset NIC Statistics (-sreset)

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 2. Reset NIC Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Reset NIC Statistics** option. From the port menu, select a port for which to reset the NIC port statistics counters to zero. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
   2. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1
Ethernet Statistics for the current port are reset
```

Undo Reset NIC Statistics (-sunreset)

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 3. Undo Reset NIC Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Undo Reset NIC Statistics** option. From the port menu, select a port for which to restore NIC port statistics counters to their values before the reset. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE3242  SN: AFE1030C04339
   1. Port   2 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:34
   2. Port   1 [Protocol(s): NIC]
      MAC Address: 00:0E:1E:04:D3:30

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1
Statistics for the current port reset - UNDONE
```

Refresh

6. Refresh

From the main menu, select the **Refresh** option to refresh (reload) the adapters and adapter port indexes. For example:

```
Scanning for QLogic adapters, please wait...
Using config file: C:\Program Files\...\iscli.cfg
Using config file: C:\Program Files\...\netscli.cfg
Loading: 1. CNA ... adapters, please wait...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ......
Scanning for QLogic adapters, please wait...

        Hit <Enter> to continue:
```

When you run QConvergeConsole CLI, the CLI collects all relevant information, including the number of available ports and the state of each one. Between the time you start QConvergeConsole CLI and the time you perform a specific action or request additional information, changes may have occurred to the port state, network state, or firmware parameters. To ensure that you are viewing the most current information, you should perform a **Refresh**. (In some cases, QConvergeConsole CLI automatically refreshes the information before or after specific commands.)

Help (-h)

7. Help

From the main menu, select the **Help** option to view the syntax and description for each noninteractive command line option. For more detailed information about each command, see the noninteractive chapter for the specific adapter type.

Exit

8. Exit

Close the QConvergeConsole CLI session.

9 Fibre Channel Interactive Commands

This chapter describes the interactive mode command line options for Fibre Channel Adapters. The interactive mode uses a series of menus from which you select the option you want by typing the number for that option.

For information about noninteractive mode operation—in which you simply type a one- or two-letter code to perform operations on the adapter—refer to Chapter 5 Fibre Channel Noninteractive Commands.

This chapter uses a "breadcrumbs" line following most section headings that shows you how to access that option; that is, it shows the hierarchical path from the top level to the command under discussion. For example, to reach the **Flash Update** option for Fibre Channel Adapters from the Main Menu, select option **3** to choose **Adapter Updates**, **1** to select the **Fibre Channel Adapter** type, and then **1** to see the **Flash Update** option. The following shows the breadcrumbs example:

3. Adapter Updates ▶ 1. Fibre Channel Adapter ▶ 1. Flash Update

The Main Menu is as follows:

```
Main Menu

1:   Adapter Information
2:   Adapter Configuration
3:   Adapter Updates
4:   Adapter Diagnostics
5:   Adapter Statistics
6:   Refresh
7:   Help
8:   Exit

     Please Enter Selection:
```

Adapter Information

1. Adapter Information ▸ 2. Fibre Channel Adapter

From the main menu, select the **Adapter Information** option and then select **2** (**Fibre Channel Adapter**). The FC Adapter Information menu presents options to view Fibre Channel adapter information, Fibre Channel port information, Fibre Channel VPD information, and Fibre Channel target and LUN information. For example:

```
Adapter Type Selection

1:   Converged Network Adapter
2:   Fibre Channel Adapter

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2

FC Adapter Information

1:   FC Adapter Information
2:   FC Port Information
3:   FC VPD Information
4:   FC Target/LUN Information
```

FC Adapter Information (-i)

1. Adapter Information ▸ 2. Fibre Channel Adapter ▸ <adapter selection> ▸ 1. FC Adapter Information

From the FC Adapter Information menu, select the **FC Adapter Information** option. From the adapter menu, select the adapter for which to view adapter information. For example:

```
Adapter Information

 1: HBA Model: QLE2462 SN: GFC0718P57753
        Port   1 WWPN: 21-00-00-1B-32-17-F9-C4
        Port   2 WWPN: 21-01-00-1B-32-37-F9-C4

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

    FC Adapter Information
-----------------------------------------------------------------
Host Name                      : amd-28
HBA Model                      : QLE2462
HBA Description                : QLE2462 PCI Express to 4Gb FC Dual
Channel
HBA Alias                      :
Serial Number                  : GFC0718P57753
Driver Version                 : 8.03.01.04.05.05-k
Driver Firmware Version        : 4.04.09 (486)
-----------------------------------------------------------------
```

FC Port Information (-i)

1. Adapter Information ▸ 2. Fibre Channel Adapter ▸ 2. FC Port Information

From the FC Adapter Information menu, select the **FC Port Information** option. From the port menu, select a port for which to view port information. For example:

```
Adapter Information

HBA Model QLE2462 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down


   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1
------------------------------------------------------------------
Host Name                    : amd-28
HBA Instance                 : 0
HBA Model                    : QLE2462
HBA Description              : QLE2462 PCI Express to 4Gb FC Dual
Channel
HBA ID                       : 0-QLE2462
HBA Alias                    :
HBA Port                     : 1
Port Alias                   :
Node Name                    : 20-00-00-1B-32-17-F9-C4
Port Name                    : 21-00-00-1B-32-17-F9-C4
Port ID                      : 00-00-00
Serial Number                : GFC0718P57753
Driver Version               : 8.03.01.04.05.05-k
BIOS Version                 : 1.24
Driver Firmware Version      : 4.04.09 (486)
Flash BIOS Version           : 1.24
Flash FCode Version          : 1.24
Flash EFI Version            : 1.08
Flash Firmware Version       : 4.00.26
Actual Connection Mode       : Unknown
Actual Data Rate             : Unknown
PortType (Topology)          : Unidentified
Target Count                 : 0
PCI Bus Number               : 2
PCI Device Number            : 0
PCIe Max Bus Width           : x4
PCIe Max Bus Speed           : 2.5 Gbps
PCIe Negotiated Width        : x4
PCIe Negotiated Speed        : 2.5 Gbps
HBA Status                   : online
------------------------------------------------------------------
```

FC VPD Information (-i)

1. Adapter Information ▸ 2. Fibre Channel Adapter ▸ 3. FC VPD Information

From the FC Adapter Information menu, select the **FC VPD Information** option. From the port menu, select a port for which to view VPD information. For example:

```
Adapter Information

HBA Model QLE2462 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1
-----------------------------------------------------------------
HBA            : 0 Port 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     :
WWPN           : 21-00-00-1B-32-17-F9-C4
WWNN           : 20-00-00-1B-32-17-F9-C4
Link           : Online
-----------------------------------------------------------------
-----------------------------------------------------------------
HBA Instance 0: QLE2462 Port 1 WWPN 21-00-00-1B-32-17-F9-C4 PortID
00-00-00
-----------------------------------------------------------------
Product Identifier           : PCI-Express Dual Channel 4Gb Fibre
Channel HBA
Part Number                  : QLE2462
Serial Number                : GFC0718P57753
Misc. Information             : PW=15W
Manufacturing Id             : PX2510401-05  E
EFI Driver Version           : 01.08
Firmware Version             : 04.00.26
BIOS Version                 : 01.24
FCode Version                : 01.24
```

FC Target/LUN Information

1. Adapter Information ▸ 2. Fibre Channel Adapter ▸ 4. FC Target/LUN Information

From the FC Adapter Information menu, select the **FC Target/LUN Information** option. From the port menu, select a port to open the Target List Menu with options to select a target device or all targets. For example:

```
Adapter Information

 HBA Model QLE2462 SN: GFC0718P57753
    1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 online
    2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

      (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
      Please Enter Selection: 1

   Target List Menu

============================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
============================================================

    1:  Device  (Offline)
          Vendor                     : N/A
          Product ID                 : N/A
          Product Rev                : N/A
          Serial Number              :
          Node Name                  : 50-0A-09-80-87-E9-60-73
          Port Name                  : 50-0A-09-83-87-E9-60-73
          Port ID                    : 2B-00-20

    2:  All Target(s)
```

Adapter Configuration

2. Adapter Configuration ▸ 2. Fibre Channel Adapter

From the main menu, select the **Adapter Configuration** option, and then select the adapter type (**Fibre Channel Adapter**). The Fibre Channel Adapter Configuration menu presents options to configure adapter parameters, configure persistent names, configure boot devices, configure target link speed, export a configuration, and generate reports. For example:

```
Adapter Type Selection

1:   Converged Network Adapter
2:   Fibre Channel Adapter

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2

Fibre Channel Adapter Configuration

1:   HBA Parameters
2:   Persistent Names (udev)
3:   Boot Devices Configuration
4:   Target Link Speed (iiDMA)
5:   Export (Save) Configuration
6:   Generate Reports
```

HBA Parameters

2. Adapter Configuration ▶ 2. Fibre Channel Adapter ▶ 1. HBA Parameters

From the Fibre Channel Adapter Configuration menu, select the
HBA Parameters option. From the port menu, select a port to open the HBA
Parameters Menu with options to view adapter parameters, configure adapter
parameters, and restore adapter defaults. For example:

```
Fibre Channel Adapter Configuration

HBA Model QLE2462 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

   HBA Parameters Menu

===========================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : online
===========================================================

    1:  Display HBA Parameters
    2:  Configure HBA Parameters
    3:  Restore Defaults
```

Display HBA Parameters (-c)

1. HBA Parameters ▶ <port selection> ▶ 1. Display HBA Parameters

From the HBA Parameters Menu, select the **Display HBA Parameters** option to view adapter parameters. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2462 Port 1 WWPN 21-00-00-1B-32-17-F9-C4 PortID 00-00-00
-------------------------------------------------------------------------------

Connection Options          : 2 - Loop Preferred, Otherwise Point-to-Point
Data Rate                   : Auto
Frame Size                  : 2048
Hard Loop ID                : 0
Loop Reset Delay (seconds)  : 5
Enable Host HBA BIOS        : Disabled
Enable Hard Loop ID         : Disabled
Enable FC Tape Support      : Enabled
Operation Mode              : 0 - Interrupt for every I/O completion
Interrupt Delay Timer (100ms) : 0
Execution Throttle          : 16
Login Retry Count           : 8
Port Down Retry Count       : 30
Enable LIP Full Login       : Enabled
Link Down Timeout (seconds) : 30
Enable Target Reset         : Enabled
LUNs Per Target             : 128
Out Of Order Frame Assembly : Disabled
```

Configure HBA Parameters (-n)

1. HBA Parameters ▸ <port selection> ▸ 2. Configure HBA Parameters

From the HBA Parameters Menu, select the **Configure HBA Parameters** option to open the Configure Parameters Menu with options to configure connection options, data rate, frame size, hard loop ID, loop reset delay, BIOS, Fibre Channel tape support, operation mode, interrupt delay timer, execution throttle, login retry count, port down retry count, LIP full login, link down timeout, target reset, LUNS per target, and receive out of order frame. For detailed information about these parameters, see Table 5-9. For example:

```
     Configure Parameters Menu


==========================================================
HBA            : 0 Port: 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     : 4.00.26
WWPN           : 21-00-00-1B-32-17-F9-C4
WWNN           : 20-00-00-1B-32-17-F9-C4
Link           : Online
==========================================================

    1:   Connection Options
    2:   Data Rate
    3:   Frame Size
    4:   Hard Loop ID
    5:   Loop Reset Delay (seconds)
    6:   Enable BIOS
    7:   Enable HBA Hard Loop ID
    8:   Enable Fibre Channel Tape Support
    9:   Operation Mode
   10:   Interrupt Delay Timer (100ms)
   11:   Execution Throttle
   12:   Login Retry Count
   13:   Port Down Retry Count
   14:   Enable LIP Full Login
   15:   Link Down Timeout (seconds)
   16:   Enable Target Reset
   17:   LUNs per Target
   18:   Enable Receive Out Of Order Frame
   19:   Commit Changes
   20:   Abort Changes
```

Restore Defaults

1. HBA Parameters ▸ <port selection> ▸ 3. Restore Defaults

From the HBA Parameters Menu, select the **Restore Defaults** option to reset the adapter parameters to their default values. For example:

```
Warning:

    Please update the HBA parameters with extreme care.
    Incorrectly updating the HBA parameters may render the HBA inoperable.
    If you currently have boot device information set up in the HBA
    parameters, updating the HBA Parameters from a file
    will preserve that information.

    Do you want to proceed with the operation?

    1:  Yes
    2:  No

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
```

Target Persistent Bindings (-p)

2. Adapter Configuration ▸ 2. Fibre Channel Adapter ▸ 2. Target Persistent Bindings

From the Fibre Channel Adapter Configuration menu, select the **Target Persistent Bindings** option. From the port menu, select a port to open the LUN List Menu with option to view LUN information and persistent names. For example:

```
Fibre Channel Adapter Configuration

HBA Model QLA2342 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

  Target Persistent Binding Menu

==========================================================
HBA           : 0 Port: 1
SN            : P07467
HBA Model     : QLA2342
HBA Desc.     : QLA2342/QLA2342L (PCI to FC dual channel)
FW Version    : N/A
WWPN          : 21-01-00-E0-8B-37-8B-00
WWNN          : 20-01-00-E0-8B-37-8B-00
Link          : Online
==========================================================

    1:  Display Configuration
    2:  Bind Target(s)
    3.  Unbind Target(s)
```

Display Configuration

2. Adapter Configuration ▸ 2. Fibre Channel Adapter ▸ 2. Target Persistent Bindings ▸ <port selection> ▸
1. Display Configuration

From the Target Persistent Bindings Menu, select the **Display Configuration** option to view the target binding configuration. For example:

```
-----------------------------------------------------------------------
HBA 0: QLA2462 Port 1 WWPN xx-xx-xx-xx-xx-xx-xx-xx Port ID 11-06-EF
-----------------------------------------------------------------------
Bind Type  Device Node Name         Device Port Name         Port ID    ID
---- ----  ---------------          ---------------          -------    --
No   Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E1
Yes  Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E2   0
Yes  Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E4   1
Yes  Disk  xx-xx-xx-xx-xx-xx-xx-xx  xx-xx-xx-xx-xx-xx-xx-xx  10-02-E8   2
```

Bind Target(s)

2. Adapter Configuration ▸ **2. Fibre Channel Adapter** ▸ **2. Target Persistent Bindings** ▸ **<port selection>** ▸
2. Bind Target(s)

From the Target Persistent Binding Menu, select the **Bind Target(s)** option to bind a target to a port. Select a target and specify a target ID to open the Target Persistent Binding – FC Port Configuration menu with options to select more targets, save changes, or cancel the binding operation. For example:

```
Target Persistent Binding Menu

=========================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
=========================================================

1: Disk
      Vendor                    : SEAGATE
      Product ID                : ST318453FC
      Port Name                 : 22-00-00-04-CF-9C-24-CA
      Port ID                   : 02-00-E1
      Bind                      : No
      Target ID :               : 1
2: Disk
      Vendor                    : SEAGATE
      Product ID                : ST318453FC
      Port Name                 : 22-00-00-0C-50-68-1E-9A
      Port ID                   : 11-0A-E2
      Bind                      : No
      Target ID                 : 2
   3: All Target(s)

      (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
      Please Enter Selection: 1

Enter Target ID: 1

   Target Persistent Binding - FC Port Configuration

   1:   Select More
   2:   Commit Changes
   3:   Cancel
```

Unbind Target(s)

2. Adapter Configuration ▶ 2. Fibre Channel Adapter ▶ 2. Target Persistent Bindings ▶ <port selection> ▶
3. Unbind Target(s)

From the LUN List Menu, select the **Unbind Target(s)** option to unbind a target. Select a target to open the Target Persistent Binding – FC Port Configuration menu with options to select more targets, save changes, or cancel the binding operation. For example:

```
Target Persistent Binding Menu

=============================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
=============================================================

1: Disk
        Vendor                    : SEAGATE
        Product ID                : ST318453FC
        Port Name                 : 22-00-00-04-CF-9C-24-CA
        Port ID                   : 02-00-E1
        Bind                      : Yes
        Target ID :               : 1
2: Disk
        Vendor                    : SEAGATE
        Product ID                : ST318453FC
        Port Name                 : 22-00-00-0C-50-68-1E-9A
        Port ID                   : 11-0A-E2
        Bind                      : Yes
        Target ID                 : 2
   3: All Target(s)

       (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
       Please Enter Selection: 1

   Target Persistent Binding - FC Port Configuration

   1:   Select More
```

```
                  2:   Commit Changes
                  3:   Cancel
```

Boot Devices Configuration

2. Adapter Configuration ▸ 2. Fibre Channel Adapter ▸ 3. Boot Devices Configuration

From the Fibre Channel Adapter Configuration menu, select the **Boot Devices Configuration** option to open the Boot Device Settings Menu with options to view and configure boot devices. For example:

```
Fibre Channel Adapter Configuration

HBA Model QLE2462 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1

Boot Device Settings Menu

========================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
========================================================

   1:   Display Boot Device(s)
   2:   Configure Boot Device(s)
```

Display Boot Device(s) (-e)

3. Boot Devices Configuration ▸ <port selection> ▸ 1. Display Boot Device(s)

From the Boot Device Settings Menu, select the **Display Boot Device(s)** option to view boot devices. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2462 Port 1 WWPN 21-00-00-1B-32-17-F9-C4 PortID 00-00-00
-------------------------------------------------------------------------------
Boot Device Settings:
----------------------------------------
Selectable Boot: Enabled
----------------------------------------
(Primary    ) Boot Port Name       LUN
---------------------------       ------
00-00-00-00-00-00-00-00               0
---------------------------       ------
(Alternate 1) Boot Port Name       LUN
---------------------------       ------
00-00-00-00-00-00-00-00               0
---------------------------       ------
(Alternate 2) Boot Port Name       LUN
---------------------------       ------
00-00-00-00-00-00-00-00               0
---------------------------       ------
(Alternate 3) Boot Port Name       LUN
---------------------------       ------
00-00-00-00-00-00-00-00               0
```

Configure Boot Device(s) (-e)

3. Boot Devices Configuration ▸ <port selection> ▸ 2. Configure Boot Device(s)

From the Boot Device Settings Menu, select the **Configure Boot Device(s)** option to open the Boot Device Settings submenu with options to configure the primary and alternate boot devices. For example:

```
    Boot Device Settings Menu

========================================================
HBA            : 0 Port: 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     : 4.00.26
WWPN           : 21-00-00-1B-32-17-F9-C4
WWNN           : 20-00-00-1B-32-17-F9-C4
Link           : Online
========================================================

    1:   Primary Boot Device
    2:   Alternate 1 Boot Device
    3:   Alternate 2 Boot Device
    4:   Alternate 3 Boot Device
```

Primary Boot Device

3. Boot Devices Configuration ‣ **<port selection>** ‣ **2. Configure Boot Device(s)** ‣ **1. Primary Boot Device**

From the Boot Device Settings Menu, select the **Primary Boot Device** option to configure the primary boot device. For example:

```
Boot Device Settings Menu

=========================================================
HBA            : 0 Port: 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     : 4.00.26
WWPN           : 21-00-00-1B-32-17-F9-C4
WWNN           : 20-00-00-1B-32-17-F9-C4
Link           : Online
=========================================================

    1:  Device
          Selectable Boot:  Enabled
          (Primary) Boot Port Name: 50-0A-09-83-87-E9-60-73
          LUN: 0
    2:  BIOS boot default
          Selectable Boot: Enabled
```

Alternate 1 (2, 3) Boot Device

3. Boot Devices Configuration ▸ **<port selection>** ▸ **2. Configure Boot Device(s)** ▸ **2. Alternate 1 Boot Device**

From the Boot Device Settings Menu, select the **Alternate *n* Boot Device** option to configure one of three alternate boot devices. For example:

```
Boot Device Settings Menu

========================================================
HBA            : 0 Port: 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     : 4.00.26
WWPN           : 21-00-00-1B-32-17-F9-C4
WWNN           : 20-00-00-1B-32-17-F9-C4
Link           : Online
========================================================

    1:  Device
          Selectable Boot:  Enabled
          (Alternate 1) Boot Port Name: 50-0A-09-83-87-E9-60-73
          LUN: 0
    2:  BIOS boot default
          Selectable Boot: Enabled
```

Target Link Speed (iiDMA)

2. Adapter Configuration ▸ 2. Fibre Channel Adapter ▸ 4. Target Link Speed (iiDMA)

From the Fibre Channel Adapter Configuration menu, select the **Target Link Speed (iiDMA)** option. From the port menu, select a port to open the iiDMA Menu with options for basic and advanced configuration. For example:

```
    iiDMA Menu

============================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
============================================================

    1:  Basic Configuration
    2:  Advance Configuration
```

Basic Configuration

2. Adapter Configuration ▸ 2. Fibre Channel Adapter ▸ 4. Target Link Speed (iiDMA) ▸ 1. Basic Configuration

From the iiDMA Menu, select the **Basic Configuration** option to specify the link speed. For example:

```
    iiDMA Menu (Basic)

============================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
============================================================

    1:  1  Gbps
    2:  2  Gbps
    3:  4  Gbps
```

Advanced Configuration

2. Adapter Configuration ▶ 2. Fibre Channel Adapter ▶ 4. Target Link Speed (iiDMA) ▶ 2. Advanced Configuration

From the iiDMA Menu, select the **Advanced Configuration** option to select a target device, specify the link speed, and apply the changes. For example:

```
iiDMA Menu

===========================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
===========================================================

    1:  Device
          Vendor                   : N/A
          Product ID               : N/A
          Product Rev              : N/A
          Serial Number            :
          Port Name                : 50-0A-09-83-87-E9-60-73
          Port ID                  : 2B-00-20
          Intelligent Interleave Factor: 4 Gbps

    2:  Apply Changes to selected Target(s)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    iiDMA Menu (Advanced)

===========================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
===========================================================

    1:  1  Gbps
    2:  2  Gbps
    3:  4  Gbps (Current)
```

Export (Save) Configuration

2. Adapter Configuration ▸ 2. Fibre Channel Adapter ▸ 5. Export (Save) Configuration

From the Fibre Channel Adapter Configuration menu, select the **Export (Save) Configuration** option. From the port menu, select a port to open the Export (Save) Configuration menu with options to save Flash memory and adapter parameters. For example:

```
Fibre Channel Adapter Configuration

HBA Model QLE2462 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1

Export (Save) Configuration

=========================================================
HBA          : 0 Port: 1
SN           : GFC0718P57753
HBA Model    : QLE2462
HBA Desc.    : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version   : 4.00.26
WWPN         : 21-00-00-1B-32-17-F9-C4
WWNN         : 20-00-00-1B-32-17-F9-C4
Link         : Online
=========================================================

   1:  Save Flash
   2:  Save HBA Parameters
```

Save Flash (-b)

5. Export (Save) Configuration ▸ <port selection> ▸ 1. Save Flash

From the Export (Save) Configuration menu, select the **Save Flash** option to save changes to Flash memory.

Save HBA Parameters (-r)

5. Export (Save) Configuration ▸ <port selection> ▸ 2. Save HBA Parameters

From the Export (Save) Configuration menu, select the **Save HBA Parameters** option to save changes to the adapter parameters.

Generate Reports

2. Adapter Configuration ▸ 2. Fibre Channel Adapter ▸ 5. Generate Reports

From the Fibre Channel Adapter Configuration menu, select the **Generate Reports** option. From the port menu, select a port to for which to generate a report. For example:

```
Fibre Channel Adapter Configuration

HBA Model QLE2462 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1
QLogic FCAPI
v1.7.3 Build 38
Copyright (C) 2003-2010 QLogic Corp.
All rights reserved.
QLogic FC/FCoE Common Library
Build Type:  Release
Build Date:  Dec  7 2010 13:44:03
------------------------------------------------------------------
Host Name                       : amd-28
OS Type                         : Linux - CentOS release 5.5  x86_64
OS Version                      : 2.6.18-194.el5
FO API Version                  : 3.0.1 build6
SDM API Version                 : v6.00 build12
------------------------------------------------------------------
.
.
.
```

Adapter Updates

3. Adapter Updates ▶ 2. Fibre Channel Adapter

From the main menu, select the **Adapter Updates** option and then select **2** (**Fibre Channel Adapter**). The Fibre Channel Adapter Update menu presents options options to update Flash memory, update adapter parameters, and update the parameter template. For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

Fibre Channel Adapter Update

1:  Flash Update
2:  Parameters Update
3:  Parameters Template Update
```

Flash Update (-b)

3. Adapter Updates ▶ 2. Fibre Channel Adapter ▶ 1. Flash Update

From the Fibre Channel Update menu, select the **Flash Update** option. From the adapter menu, select the adapter, and then specify the Flash update file name. For example:

```
Flash Update

 1: HBA Model: QLE2462 SN: GFC0718P57753
       Port   1 WWPN: 21-00-00-1B-32-17-F9-C4
       Port   2 WWPN: 21-01-00-1B-32-37-F9-C4

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
Enter a file name or Hit <RETURN> to abort:flash_update
```

Parameters Update (-r)

3. Adapter Updates ▸ 2. Fibre Channel Adapter ▸ 2. Parameters Update

From the Fibre Channel Update menu, select the **Parameters Update** option. From the port menu, select a port for which to specify the parameter update file name. For example:

```
Parameters Update

HBA Model QLE2462 SN: GFC0718P57753
  1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
  2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
Enter a file name or Hit <RETURN> to abort:parameters_update
```

Parameters Template Update

3. Adapter Updates ▸ 2. Fibre Channel Adapter ▸ 3. Parameters Template Update

From the Fibre Channel Update menu, select the **Parameters Template Update** option. From the port menu, select a port to open the HBA Parameters Templates Menu with options for various adapter vendors. For example:

```
Parameters Template Update

HBA Model QLE2462 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

HBA Parameters Templates Menu


===========================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    : 4.00.26
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
===========================================================

    1:  HP
    2:  IBM
    3:  QLGC
    4:  SUN

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 3
Updating HBA Parameters on HBA instance 0 -  QLE2462. Please
wait...
HBA Parameters update complete. Changes have been saved to HBA
instance 0 and are effective immediately.
```

Adapter Diagnostics

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter

From the main menu, select the **Adapter Diagnostics** option and then select **2** (**Fibre Channel Adapter**). The FC Diagnostics menu presents options to perform a loopback test, test the read write buffer, and view the transceiver diagnostics information. For example:

```
Adapter Type Selection

1:   Converged Network Adapter
2:   Fibre Channel Adapter

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2

FC Diagnostics

1:   Loopback Test
2:   Read Write Buffer Test
3:   Transceiver Diagnostics Monitoring Interface (DMI)
```

Loopback Test (-kl)

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 1. Loopback Test

From the FC Diagnostics menu, select the **Loopback Test** option. From the port menu, select a port to open the Loopback Test menu with options to view test parameters, reset test parameters, configure test parameters, and run the external loopback test. For example:

```
FC Diagnostics

HBA Model QLE2462 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1

   Loopback Test

==========================================================
HBA            : 0 Port: 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     :
WWPN           : 21-00-00-1B-32-17-F9-C4
WWNN           : 20-00-00-1B-32-17-F9-C4
Link           : Online
==========================================================
   1:   Display Test Parameters
   2:   Reset Test Parameters
   3:   Configure Test Parameters
   4:   Start Diagnostics Test
```

Display Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 1. Loopback Test ▸ <port selection> ▸ 1. Display Test Parameters

From the Loopback Test menu, select the **Display Test Parameters** option to view the external loopback test parameters. For example:

```
-------------------------------------------------------------------------
HBA Instance 0: QLE2462 Port 1 WWPN 21-00-00-1B-32-17-F9-C4 PortID 00-00-00
-------------------------------------------------------------------------
-------------------
Diagnostics Settings
-------------------
Data Pattern            : Random
Data Size (Bytes)       : 8
Number of tests (1-65535): 10000
Test Increment(1-65535) : 1
Abort On Error          : Ignore
Test Continuous         : OFF
Loopback Type           : External Loopback
-------------------------------------------------------------------------
```

Reset Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 1. Loopback Test ▸ <port selection> ▸ 2. Reset Test Parameters

From the Loopback Test menu, select the **Reset Test Parameters** option to reset the external loopback test parameters to their default values.

Configure Test Parameters

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 1. Loopback Test ▸ <port selection> ▸ 3. Configure Test Parameters

From the Loopback Test menu, select the **Configure Test Parameters** option to open the Loopback Test submenu with options to configure the data pattern, data size, number of tests, test increment, and error handling. For detailed information about these parameters, see Table 5-6.

For example:

```
    Loopback Test

========================================================
HBA            : 0 Port: 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     :
WWPN           : 21-00-00-1B-32-17-F9-C4
WWNN           : 20-00-00-1B-32-17-F9-C4
Link           : Online
========================================================
    1:  Data Patterns
    2:  Data Size
    3:  Number Of Test(s)
    4:  Test Increment(s)
    5:  Abort On Error
```

Start Diagnostics Test

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 1. Loopback Test ▸ <port selection> ▸ 4. Start Diagnostics Test

From the Loopback Test menu, select the **Start Diagnostics Test** option to run the external loopback test. For example:

```
--------------------------------------------------------------------------------
HBA Instance 1: QLE2462 Port 2 WWPN 21-01-00-1B-32-37-F9-C4 PortID 00-00-EF
--------------------------------------------------------------------------------
--------------------
Diagnostics Settings
--------------------
Data Pattern             : Random
Data Size (Bytes)        : 8
Number of tests (1-65535): 10000
Test Increment(1-65535)  : 1
Abort On Error           : Ignore
Test Continuous          : OFF
Loopback Type            : External Loopback
----------------------------------------------------------------------------
-----------------------------------
Diagnostics - Loopback Test Result
-----------------------------------
Hit <ENTER> to abort
------------------------------------------------
HBA Test Data Pattern          Status    CRC       Disparity FrameLength
--- ---------------------- ----------- --------- --------- -----------
 1  00-7E-F9-66-02-FE-EB-7E    Success       0         0           0

          Finished 10000 iterations in 1 second(s)...
```

Read Write Buffer Test

4. Adapter Diagnostics ▸ 2. Fibre Channel Adapter ▸ 2. Read Write Buffer Test

From the FC Diagnostics menu, select the **Read Write Buffer Test** option. From the port menu, select a port to open the Read Write Buffer Test menu with options to view test parameters, reset test parameters, configure test parameters, and run the test. For example:

```
FC Diagnostics

HBA Model QLE2462 SN: GFC0718P57753
  1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
  2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1

Read Write Buffer Test

1:  Display Test Parameters
2:  Reset Test Parameters
3:  Configure Test Parameters
4:  Start Diagnostics Test
```

Display Test Parameters (-kr)

2. Read Writer Buffer Test ▸ <port selection> ▸ 1. Display Test Parameters

From the Read Write Buffer Test menu, select the **Display Test Parameters** option to view the read write buffer test parameters. For example:

```
-----------------------------------------------------------------------------
HBA Instance 0: QLE2462 Port 1 WWPN 21-00-00-1B-32-17-F9-C4 PortID 00-00-00
-----------------------------------------------------------------------------

--------------------
Diagnostics Settings
--------------------

Data Pattern           : Random
Data Size (Bytes)      : 8
Number of tests (1-10000): 10000
Test Increment(1-10000)  : 1
Abort On Error         : Ignore
Test Continuous        : OFF
-----------------------------------------------------------------------
```

Reset Test Parameters

2. Read Write Buffer Test ▶ <port selection> ▶ 2. Reset Test Parameters

From the Read Write Buffer Test menu, select the **Reset Test Parameters** option to reset the read write buffer test parameters to their default values.

Configure Test Parameters (-kr)

2. Read Write Buffer Test ▶ <port selection> ▶ 3. Configure Test Parameters

From the Read Write Buffer Test menu, select the **Configure Test Parameters** option to open the Read Write Buffer Test submenu with options to configure the data pattern, data size, number of tests, test increment, error handling, and devices. For detailed information about these parameters, see Table 5-6.

For example:

```
Loopback Test


======================================================
HBA            : 0 Port: 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     :
WWPN           : 21-00-00-1B-32-17-F9-C4
WWNN           : 20-00-00-1B-32-17-F9-C4
Link           : Online
======================================================
    1:   Data Patterns
    2:   Data Size
    3:   Number Of Test(s)
    4:   Test Increment(s)
    5:   Abort On Error
    6:   Enable/Disable Device(s)
```

Start Diagnostics Test (-kr)

2. Read Write Buffer Test ▶ <port selection> ▶ 4. Start Diagnostics Test

From the Read Write Buffer Test menu, select the **Start Diagnostics Test** option to run the read write buffer test.

Transceiver Diagnostics Monitoring Interface (DMI)

4. Adapter Diagnostics ▶ **2. Fibre Channel Adapter** ▶ **3. Transceiver Diagnostics Monitoring Interface (DMI)**

From the FC Diagnostics menu, select the **Transceiver Diagnostics Monitoring Interface (DMI)** option. From the port menu, select a port to open the Transceiver Diagnostics Monitoring Interface (DMI) menu with options to view general and detailed transceiver information. For example:

```
FC Diagnostics

HBA Model QLE2462 SN: GFC0718P57753
  1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
  2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Transceiver Diagnostics Monitoring Interface (DMI)

1:  General
2:  Details
```

General (-dm)

3. Transceiver Diagnostics Monitoring Interface (DMI) ▸ <port selection> ▸ 1. General

From the Transceiver Diagnostics Monitoring Interface menu, select the **General** option to view general transceiver diagnostic information. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2462 Port 1 WWPN 21-00-00-1B-32-17-F9-C4 PortID 00-00-00
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
Media Information
-------------------------------------------------------------------------------
           Vendor: FINISAR CORP.
             Type: 400-M6-SN-I
      Part Number: FTLF8524E2KNL
            Speed: 100 MBytes/Sec, 200 MBytes/Sec, 400 MBytes/Sec
         Revision: A
    Serial Number: PBA00CE
-------------------------------------------------------------------------------
               Temperature    Voltage    Tx Bias    Tx Power    Rx Power
                   (C)          (V)        (mA)       (mW)        (mW)
               -------------- -------    -------    --------    --------
        Value      41.78        3.32       7.43      0.3624      0.0001
       Status      Normal      Normal     Normal     Normal      Fault
   High Alarm      95.00        3.90      17.00      0.6310      1.2590
 High Warning      90.00        3.70      14.00      0.6310      0.7940
  Low Warning     -20.00        2.90       2.00      0.0790      0.0158
    Low Alarm     -25.00        2.70       1.00      0.0670      0.0100
```

Details (-dm)

3. Transceiver Diagnostics Monitoring Interface (DMI) ▸ <port selection> ▸ 2. Details

From the Transceiver Diagnostics Monitoring Interface menu, select the **Details** option to view general transceiver diagnostic information. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2462 Port 1 WWPN 21-00-00-1B-32-17-F9-C4 PortID 00-00-00
-------------------------------------------------------------------------------
Optical Transceiver Digital Diagnostic Data:

Address A0
            Identifier: Module/connector soldered to motherboard
       Ext. Identifier: GBIC/SFP defined by serial ID only
             Connector: LC
        Ethernet Speed:
            Compliance: 0x00 0x00 0x00
        FC Link Length: Intermediate Distance (I)
   FC Transmitter Tech: Shortwave Laser w/o OFC (SN)
 FC Transmission Media: Multi-mode 50m (M5), Multi-mode 62.5m (M6)
              FC Speed: 100 MBytes/Sec, 200 MBytes/Sec, 400 MBytes/Sec
              Encoding: 8B10B
            BR, Nominal: 0x2a
   Length (9um) - km: 0x00
         Length (9um): 0x00
        Length (50um): 0x0f
      Length (62.5um): 0x07
      Length (Copper): 0x00
          Vendor name: FINISAR CORP.
           Vendor OUI: 0x00 0x90 0x65
            Vendor PN: FTLF8524E2KNL
              .
              .
              .
```

Adapter Statistics

5. Adapter Statistics ▶ 2. Fibre Channel Adapter

From the main menu, select the **Adapter Statistics** option, and then select the adapter type (**Fibre Channel Adapter**). The FC Statistics menu presents options to view port statistics and link status. For example:

```
Adapter Type Selection

1:  Converged Network Adapter
2:  Fibre Channel Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

FC Statistics

1:  Display FC Port Statistics
2:  Display FC Port Link Status
```

Display FC Port Statistics

5. Adapter Statistics ▸ 2. Fibre Channel Adapter ▸ 1. Display FC Port Statistics

From the FC Statistics menu, select the **Display FC Port Statistics** option. From the port menu, select a port to open the HBA Statistics Menu with options to view adapter status logging parameters, to reset port logging parameters, to configure adapter status logging parameters, and to view adapter status information. For example:

```
FC Diagnostics

HBA Model QLE2462 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1

  HBA Statistics Menu

========================================================
HBA            : 0 Port: 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     :
WWPN           : 21-00-00-1B-32-17-F9-C4
WWNN           : 20-00-00-1B-32-17-F9-C4
Link           : Online
========================================================
     1:  Display Parameters
     2:  Reset Parameters
     3:  Configure Parameters
     4:  Display HBA Statistics
```

Display Parameters (-gs)

1. Display FC Port Statistics ▸ <port selection> ▸ 1. Display Parameters

From the HBA Statistics Menu, select the **Display Parameters** option to view adapter status logging parameters. For example:

```
----------------------------------------
HBA Port Statistics Settings
----------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): null.csv
```

Reset Parameters

1. Display FC Port Statistics ▸ <port selection> ▸ 2. Reset Parameters

From the HBA Statistics Menu, select the **Reset Parameters** option to reset the adapter status logging parameters to their default values.

Configure Parameters (-gs)

1. Display FC Port Statistics ▸ <port selection> ▸ 3. Configure Parameters

From the HBA Statistics Menu, select the **Configure Parameters** option to open the Configure Test Parameters Menu with options to specify the polling method, the polling rate, and the name of the log file. For details about these parameters, see Table 5-5. For example:

```
    Configure Parameters Menu


===========================================================
HBA            : 0 Port: 1
SN             : GFC0718P57753
HBA Model      : QLE2462
HBA Desc.      : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version     :
WWPN           : 21-00-00-1B-32-17-F9-C4
WWNN           : 20-00-00-1B-32-17-F9-C4
Link           : Online
===========================================================
    1:   Auto Poll
    2:   Set Rate
    3:   Set Log File
```

Display HBA Statistics (-gs)

1. Display FC Port Statistics ▸ <port selection> ▸ 4. Display HBA Statistics

From the HBA Statistics Menu, select the **Display HBA Statistics** option to view Fibre Channel port statistics. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE2462 Port 1 WWPN 21-00-00-1B-32-17-F9-C4 PortID 00-00-00
-------------------------------------------------------------------------------
HBA Port Statistics
-------------------------------------------
General keyboard shortcuts:
     R     - Reset all counters
     ENTER - Cancel the current task
-------------------------------------------
HBA Port Errors Device Errors Reset I/O Count  IOPS  BPS        Time
--- ----------- ------------- ----- ---------- ----- ---------- -----------
  0         0             0     0          0     0          0 10:34:53 AM
```

Display FC Port Link Status

5. Adapter Statistics ▸ 2. Fibre Channel Adapter ▸ 2. Display FC Port Link Status

From the FC Statistics menu, select the **Display FC Port Link Status** option. From the port menu, select a port to open the Link Statistics Menu with options to view link logging parameters, reset link logging parameters, configure link logging parameters, and to view link statistics. For example:

```
FC Diagnostics

HBA Model QLE2462 SN: GFC0718P57753
   1: Port   1: WWPN: 21-00-00-1B-32-17-F9-C4 Online
   2: Port   2: WWPN: 21-01-00-1B-32-37-F9-C4 Loop Down

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1

   Link Statistics Menu

============================================================
HBA           : 0 Port: 1
SN            : GFC0718P57753
HBA Model     : QLE2462
HBA Desc.     : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version    :
WWPN          : 21-00-00-1B-32-17-F9-C4
WWNN          : 20-00-00-1B-32-17-F9-C4
Link          : Online
============================================================
   1:  Display Parameters
   2:  Reset Parameters
   3:  Configure Parameters
   4:  Display Link Statistics
```

Display Parameters

2. Display FC Port Link Status ▸ <port selection> ▸ 1. Display Parameters

From the Link Statistics Menu, select the **Display Parameters** option to view link
status logging parameters. For example:

```
----------------------------------------
Link Status Settings
----------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): N/A
```

Reset Parameters

2. Display FC Port Link Status ▸ <port selection> ▸ 2. Reset Parameters

From the Link Statistics Menu, select the **Reset Parameters** option to reset the
link status logging parameters to their default values.

Configure Parameters (-ls)

2. Display FC Port Link Status ▸ <port selection> ▸ 3. Configure Parameters

From the Link Statistics Menu, select the **Configure Parameters** option to open
the Link Statistics submenu with options to specify the polling method, the polling
rate, and the name of the log file. For details about these parameters, see
Table 5-8. For example:

```
    Configure Parameters Menu

==========================================================
HBA          : 0 Port: 1
SN           : GFC0718P57753
HBA Model    : QLE2462
HBA Desc.    : QLE2462 PCI Express to 4Gb FC Dual Channel
FW Version   :
WWPN         : 21-00-00-1B-32-17-F9-C4
WWNN         : 20-00-00-1B-32-17-F9-C4
Link         : Online
==========================================================
    1:  Auto Poll
    2:  Set Rate
    3:  Set Log File
```

Display Link Statistics (-ls)

2. Display FC Port Link Status ▸ <port selection> ▸ 4. Display Link Statistics

From the Link Statistics Menu, select the **Display Link Statistics** option to view link status information and save it to the log file.

```
----------------------------------------
Link Status Settings
----------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): N/A
-------------------------------------------------------------------------
HBA Instance 0: QLE2462 Port 1 WWPN 21-00-00-1B-32-17-F9-C4 PortID 00-00-00
-------------------------------------------------------------------------
Link Status
-------------------------------------------
General keyboard shortcuts:
     R     - Reset current
     C     - Refresh current
     T     - Refresh total
     ENTER - Cancel the current task
-------------------------------------------
Port Name                    Link Failure Sync Loss Signal Loss Invalid CRC
---------------------------- ------------ --------- ----------- -----------
Port(21-00-00-1B-32-17-F9-C4)           0         0           0           0
-------------------------------------------------------------------------
```

Refresh

6. Refresh

From the main menu, select the **Refresh** option to refresh (reload) the adapters and adapter port indexes. For example:

```
Scanning for QLogic adapters, please wait...
Using config file: C:\Program Files\...\iscli.cfg
Using config file: C:\Program Files\...\netscli.cfg
Loading: 1. CNA ... adapters, please wait...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ......
Scanning for QLogic adapters, please wait...

        Hit <Enter> to continue:
```

When you run QConvergeConsole CLI, the CLI collects all relevant information, including the number of available ports and the state of each one. Between the time you start QConvergeConsole CLI and the time you perform a specific action or request additional information, changes may have occurred to the port state, network state, or firmware parameters. To ensure that you are viewing the most current information, you should perform a **Refresh**. (In some cases, QConvergeConsole CLI automatically refreshes the information before or after specific commands.)

Help (-h)

7. Help

From the main menu, select the **Help** option to view the syntax and description for each noninteractive command line option. For more detailed information about each command, see the noninteractive chapter for the specific adapter type.

Exit

8. Exit

From the main menu, select the **Exit** option to close the QConvergeConsole CLI session.

10 Converged Network Adapter Interactive Commands

This chapter describes the interactive mode command line options for Converged Network Adapters. The interactive mode uses a series of menus from which you select the option you want by typing the number for that option.

For information on noninteractive mode operation—in which you simply type a one- or two-letter code to perform operations on the adapter—refer to the following chapters for the corresponding adapter function:

■ Chapter 4 NIC Noninteractive Commands

■ Chapter 5 Fibre Channel Noninteractive Commands

■ Chapter 6 iSCSI Noninteractive Commands

This chapter uses a "breadcrumbs" line following most section headings that shows how to access that option; that is, it shows the hierarchical path from the top level to the command under discussion. For example, to reach the **Flash Update** option for Converged Network Adapters from the Main Menu, select option 3 to choose **Adapter Updates**, **1** to select the **Converged Network Adapter** type, and then **1** to see the **Flash Update** option. The following shows the breadcrumbs example:

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 1. Flash Update

The Main Menu is as follows:

```
Main Menu

1:  Adapter Information
2:  Adapter Configuration
3:  Adapter Updates
4:  Adapter Diagnostics
5:  Adapter Statistics
6:  Refresh
7:  Help
8:  Exit

    Please Enter Selection:
```

Adapter Information

1. Adapter Information ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Information** option, and then select the adapter type (**Converged Network Adapter**). The Converged Network Adapter Information menu presents options for viewing information about the adapter, ports, VPDs, VLANs, teaming, FCoE, iSCSI, and port target/LUNs. For example:

```
Adapter Type Selection

1:   Converged Network Adapter
2:   Fibre Channel Adapter

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1

Converged Network Adapter Information

1:   CNA Adapter Information
2:   CNA Port Information
3:   CNA VPD Information
4:   CNA VLAN Information
5:   Teaming Information
6:   CNA FCoE Information
7:   CNA iSCSI Information
8:   CNA Port Target/LUN Information
```

CNA Adapter Information

1. Adapter Information ▶ 1. Converged Network Adapter ▶ 1. CNA Adapter Information

From the Converged Network Adaptor Information menu, select the **CNA Adapter Information** option. From the adapter menu, select the adapter, and then select the information type (NIC, FCoE, or iSCSI). For example:

```
CNA Adapter Information

1: CNA Model: QLE8242 SN: AFE1028C03899
      Port   2 [Protocol(s): NIC FCoE iSCSI]
      Port   1 [Protocol(s): NIC FCoE iSCSI]

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 1

CNA Adapter Information

1:  NIC
2:  FCoE
3:  iSCSI
```

NIC

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 1. CNA Adapter Information ▸ <adapter selection> ▸ 1. NIC

From the CNA Adapter Information menu, select the **NIC** option to view NIC adapter information. For example:

```
--------------------------------------------------------------------
Hostname                   : APPS4055
Adapter Model              : QLE8242
Chip Model                 : 8020
Chip Version               : B0
Adapter Alias              : None
Serial Number              : AFE1028C03899
MAC Address Function 1      : 00:0e:1e:04:95:ec
MAC Address Function 0      : 00:0e:1e:04:95:e8
Driver Information         : QLogic Dual Port 10 Gigabit Ethernet
CNA, PCIe 2.0
 Adapter
Driver Name                : qlxgnd64.sys
Driver Version             : 4.2.15.1125
Active Firmware Version     : 4.07.31
Flash Package Version       : 1.4.37
PXE Boot Version           : 2.0.3.06 (35.06 )
VLAN & Team Driver Name    :
VLAN & Team Driver Version :
--------------------------------------------------------------------
```

FCoE

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 1. CNA Adapter Information ▸ <adapter selection> ▸ 2. FCoE

From the CNA Adapter Information menu, select the **FCoE** option to view FCoE adapter information. For example:

```
--------------------------------------------------------------------
Host Name                     : APPS4055
HBA Model                     : QLE8242
HBA Description               : QLE8242 QLogic Pci Express to 10GbE
Dual Channel CNA (FCoE)
HBA Alias                     :
Serial Number                 : AFE1028C03899
Driver Version                : STOR Miniport 9.1.9.15
Driver Firmware Version       : 4.07.31
--------------------------------------------------------------------
```

iSCSI

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 1. CNA Adapter Information ▸ <adapter selection> ▸ 3. iSCSI

From the CNA Adapter Information menu, select the **iSCSI** option to view iSCSI adapter information. For example:

```
-------------------------------------------------------------------
Board Type              : QLE8242
Chip Model              : ISP8242
Serial Number           : AFE1028C03899
MAC Address             : 00-0E-1E-04-95-EA
Driver Version          : 2.1.5.15 (STOR wx64)
Firmware Version        : 4.7.31
ROM Version             : 01.04.37
iSCSI Version           : 0.20
BIOS/UEFI Version       : 0.00
BIOS/UEFI Full Version  :
-------------------------------------------------------------------
```

CNA Port Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 2. CNA Port Information

From the Converged Network Adaptor Information menu, select the **CNA Port Information** option to view port information. From the port menu, select a port, and then select the information type (NIC, FCoE, or iSCSI). For example:

```
Converged Network Adapter Information

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
    Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online
    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

CNA Port Information
1:  NIC
2:  FCoE
3:  iSCSI
```

NIC

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 2. CNA Port Information ▸ <port selection> ▸ 1. NIC

From the CNA Port Information menu, select the **NIC** option to view NIC port information. For example:

```
----------------------------------------------------------------------

Hostname                   : APPS4055
Adapter Model              : QLE8242
Port Alias                 : None
Physical MAC Address       : 00:0e:1e:04:95:e8
Physical MAC Address Alias : None
Active/LAA MAC Address      : 00:0e:1e:04:95:e8
Active/LAA MAC Address Alias: None
IPv4 Address               : 192.168.10.55
IPv4 Subnet Mask           : 255.255.255.0
IPv4 Default Gateway       :
IPv4 DHCP Enabled          : No
DHCP Servers               : Not Available
DNS Servers                : fec0:0:0:ffff::1
                           : fec0:0:0:ffff::2
                           : fec0:0:0:ffff::3
IPv6 Addresses             : fe80::8177:b777:e679:daf0
IPv6 Default Router        : fe80::8177:b777:e679:daf0
Link Status                : Up
MTU                        : 1514
Interface Scope ID         : 22
Interface Speed            : 10 Gbps
Interface Description      : QLogic Dual Port 10 Gigabit Ethernet
CNA, PCIe 2.0 Adapter
----------------------------------------------------------------------
```

FCoE

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 2. CNA Port Information ▸ <port selection> ▸ 2. FCoE

CNA Port Information menu, select the **FCoE** option to view FCoE port information. For example:

```
------------------------------------------------------------------------------
Host Name                  : APPS4055
HBA Instance               : 0
HBA Model                  : QLE8242
HBA Description            : QLE8242 QLogic Pci Express to 10GbE Dual
Channel CNA (FCoE)
HBA ID                     : 0-QLE8242
HBA Alias                  :
HBA Port                   : 1
Port Alias                 :
Node Name                  : 20-00-00-0E-1E-04-95-EB
Port Name                  : 21-00-00-0E-1E-04-95-EB
ENode MAC Address          : 00:0E:1E:04:95:EB
Port ID                    : 11-00-20
Serial Number              : AFE1028C03899
Driver Version             : STOR Miniport 9.1.9.15
BIOS Version               : 3.00
Driver Firmware Version    : 4.07.31
Flash BIOS Version         : 3.00
Flash FCode Version        : N/A
Flash EFI Version          : N/A
Flash Firmware Version     : 4.07.31
Actual Connection Mode     : Point to Point
Actual Data Rate           : 10 Gbps
PortType (Topology)        : NPort
Target Count               : 2
PCI Bus Number             : 9
PCI Device Number          : 0
PCIe Max Bus Width         : x8
PCIe Max Bus Speed         : 5.0 Gbps
PCIe Negotiated Width      : x8
PCIe Negotiated Speed      : 2.5 Gbps
HBA Status                 : Online
------------------------------------------------------------------------------
```

iSCSI

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 2. CNA Port Information ▸ <port selection> ▸ 3. iSCSI

CNA Port Information menu, select the **iSCSI** option to view iSCSI port information. For example:

```
------------------------------------------------------------------
User Defined IP Address.
IPv4 Address            : 192.168.1.45
Gateway                 : 0.0.0.0
Subnet Mask             : 255.255.255.0

IPv6 Protocol is currently disabled.
iSNS                    : Disabled.
------------------------------------------------------------------
```

CNA VPD Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 3. CNA VPD Information

From the Converged Network Adaptor Information menu, select the **CNA VPD Information** option to view VPD information. From the port menu, select a port, and then select the information type (NIC, FCoE, or iSCSI). For example:

```
Converged Network Adapter Information

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 2

CNA VPD Information

1:  NIC
2:  FCoE
3:  iSCSI
```

NIC

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 3. CNA VPD Information ▸ <port selection> ▸ 1. NIC

From the CNA VPD Information menu, select the **NIC** option to view NIC port VPD information. For example:

```
----------------------------------------------------------------------
VPD
Description           : QLogic PCI-Express Dual Port 10Gb CNA
Part Number           : QLE8242
Serial Number         : AFE1028C03899
Engineering Date Code : NE3210404-08 01
Flash Image Version   : 010437
----------------------------------------------------------------------
```

FCoE

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 3. CNA VPD Information ▸ <port selection> ▸ 2. FCoE

From the CNA VPD Information menu, select the **FCoE** option to view FCoE port VPD information. For example:

```
---------------------------------------------------------------------------
CNA            : 0 Port 1
SN             : AFE1028C03899
ENode MacAddr  : 00:0E:1E:04:95:EB
CNA Model      : QLE8242
CNA Desc.      : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version     :
WWPN           : 21-00-00-0E-1E-04-95-EB
WWNN           : 20-00-00-0E-1E-04-95-EB
Link           : Online
---------------------------------------------------------------------------
---------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
---------------------------------------------------------------------------
Product Identifier       : QLogic PCI-Express Dual Port 10Gb CNA
Part Number              : QLE8242
Serial Number            : AFE1028C03899
Engineering Date Code     : NE3210404-08 01
Flash Image Version      : 010437
```

iSCSI

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 3. CNA VPD Information ▸ <port selection> ▸ 3. iSCSI

From the CNA VPD Information menu, select the **iSCSI** option to view iSCSI port VPD information. For example:

```
-------------------------------------------------------------------------------
VPD
Description                      : QLogic PCI-Express Dual Port 10Gb CNA
Part Number                      : QLE8242
Serial Number                    : AFE1028C03899
Engineering Date Code            : NE3210404-08 01
Flash Image Version              : 010437
-------------------------------------------------------------------------------
```

CNA VLAN Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 4. CNA VLAN Information

From the Converged Network Adaptor Information menu, select the **CNA VLAN Information** option to view VLAN information. From the adapter menu, select an adapter, and then select the information type (NIC, FCoE, or iSCSI). For example:

```
Converged Network Adapter Information

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2
-------------------------------------------------------------------------------
VLAN List:
CNA:  1 CNA Port:  2  VLAN ID:   300 MAC: 00:0e:1e:04:95:ec Description:
[NETSCLI-VLAN-300][VLan Team]:QLogic Teaming Virtual Adapter #2
CNA:  1 CNA Port:  2  VLAN ID: 0(untag) MAC: 00:0e:1e:04:95:ec Description:
[Default Vlan][VLan Team]:QLogic Teaming Virtual Adapter
-------------------------------------------------------------------------------
```

Teaming Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 5. Teaming Information

From the Converged Network Adaptor Information menu, select the **Teaming Information** option to view teaming information. From the port menu, select a port, and then select the information type (NIC, FCoE, or iSCSI). For example:

```
Converged Network Adapter Information

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2
-------------------------------------------------------------------------

Team:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3 VLAN ID: None Team Type: Fail Over
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Adapter"
Non-QLogic Port    MAC: 00:23:7d:5f:30:2f Description: "Broadcom NetXtreme
Gigabit Ethernet"


-------------------------------------------------------------------------
```

CNA FCoE Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 6. CNA FCoE Information

From the Converged Network Adaptor Information menu, select the **CNA FCoE Information** option to view FCoE information. From the port menu, select a port, and then select the information type (NIC or FCoE). For example:

```
Converged Network Adapter Information
CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 2

CNA FCoE Information
1:  NIC
2:  FCoE
```

NIC

1. Adapter Information ▶ 1. Converged Network Adapter ▶ 6. CNA FCoE Information ▶ <port selection> ▶ 1. NIC

From the CNA FCoE Information menu, select the **NIC** option to view FCoE NIC port information. For example:

```
--------------------------------------------------------------------
--------------------------------
DCBX
--------------------------------
DCBX Enable                : NA
DCBX Negotiation           : NA
Port Pause Type            : Standard Pause
--------------------------------
ETS
--------------------------------
Priority Tx Mode           : Bandwidth
SAN Unused BW to LAN       : false
LAN Unused BW to SAN       : false

Class 1 Priority Group ID : 0
Class 1 Bandwidth Percent : 0
Class 1 CoS Priorities    :

Class 2 Priority Group ID : 0
Class 2 Bandwidth Percent : 0
Class 2 CoS Priorities    :
--------------------------------------------------------------------
```

FCoE

1. Adapter Information ‣ 1. Converged Network Adapter ‣ 6. CNA FCoE Information ‣ <port selection> ‣ 2. FCoE

From the CNA FCoE Information menu, select the **FCoE** option to open the FCoE Utilities Menu with options to view general information, data center bridging information, DCE statistics, and TLV information. For example:

```
FCoE Utilities Menu

========================================================
CNA          : 1 Port: 2
SN           : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EF
CNA Model    : QLE8242
CNA Desc.    : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version   : 4.07.31
WWPN         : 21-00-00-0E-1E-04-95-EF
WWNN         : 20-00-00-0E-1E-04-95-EF
Link         : SFP not installed
========================================================

    1:   Information
    2:   Data Center Bridging
    3:   DCE Statistics
    4:   TLV
```

Information

6. CNA FCoE Information ‣ <port selection> ‣ 2. FCoE ‣ 1. Information

From the FCoE Utilities Menu, select the **Information** option to view general FCoE port information. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------

--------------------------------------------------------
General Info
--------------------------------------------------------
VN Port MAC Address         : 0E:FC:00:11:00:20
VLAN ID                     : 1002
Max Frame Size              : 2500 (Baby Jumbo)
Addressing Mode             : FPMA
--------------------------------------------------------
```

Data Center Bridging

6. CNA FCoE Information ‣ <port selection> ‣ 2. FCoE ‣ 2. Data Center Bridging

From the FCoE Utilities Menu, select the **Data Center Bridging** option to view data center bridging information. For example:

```
---------------------------------------------------------
Data Center Bridging
---------------------------------------------------------
Host Name                      : APPS4055
HBA Instance                   : 0
HBA Model                      : QLE8242
Node Name                      : 20-00-00-0E-1E-04-95-EB
Port Name                      : 21-00-00-0E-1E-04-95-EB
HBA Description                : QLE8242 QLogic Pci Express to 10GbE Dual
                                 Channel CNA (FCoE)
---------------------------
DCBX
These DCBX values are the default card/local settings.
To see the running/current settings, use the TLV option.
---------------------------------------------------------
DCBX Enable                    : True
Willing                        : True
Port Pause Type                : Per Priority Pause
SAN Priority COS               : 3
---------------------------
ETS
These ETS values are the default/local settings.
To see the running/current settings, use the TLV option.
Unused bandwidth are excluded.
---------------------------------------------------------
Priority Tx  Mode              : Bandwidth
SAN Bandwidth Percent          : 50
SAN Unused Bw To LAN           : False
LAN Unused Bw To SAN           : False
```

DCE Statistics

6. CNA FCoE Information ‣ <port selection> ‣ 2. FCoE ‣ 3. DCE Statistics

From the FCoE Utilities Menu, select the **DCE Statistics** option to open the DCE Statistics menu with options to display and configure DCE logging parameters. For detailed information about these parameters, see Table 5-3.

For example:

```
    DCE Statistics

=========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model    : QLE8242
CNA Desc.    : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version   : 4.07.31
WWPN         : 21-00-00-0E-1E-04-95-EB
WWNN         : 20-00-00-0E-1E-04-95-EB
Link         : Online
=========================================================

    1:   Display Settings
    2:   Auto Polling
    3:   Set Rate
    4:   Set Details
    5:   Start
```

Display Settings Select this option to view the DCE statistics settings. For example:

```
----------------------------------------
DCE Statistics Settings
----------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): N/A
Details (DT): Absolute
```

Auto Polling Select this option to specify automatic polling or manual polling.

Set Rate Select this option to specify the polling rate.

Set Details Select this option to qualify the polling rate as absolute, per second, or baseline.

Start Select this option to begin logging statistics.

TLV

6. CNA FCoE Information ▸ <port selection> ▸ 2. FCoE ▸ 4. TLV

From the FCoE Utilities Menu, select the **TLV** option to open the TLV menu with options to view detailed and raw type-length-value information. For example:

```
    TLV Menu

========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model    : QLE8242
CNA Desc.    : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version   : 4.07.31
WWPN         : 21-00-00-0E-1E-04-95-EB
WWNN         : 20-00-00-0E-1E-04-95-EB
Link         : Online
========================================================

    1:  Details
    2:  Raw
```

CNA iSCSI Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 7. CNA iSCSI Information

From the Converged Network Adaptor Information menu, select the **CNA iSCSI Information** option. From the port menu, select a port to view iSCSI information. For example:

```
Converged Network Adapter Information

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2

------------------------------------------------------------------------------
Board Type              : QLE8242
Chip Model              : ISP8242
Serial Number           : AFE1028C03899
MAC Address             : 00-0E-1E-04-95-EA
Driver Version          : 2.1.5.15 (STOR wx64)
Firmware Version        : 4.7.31
ROM Version             : 01.04.37
iSCSI Version           : 0.20
BIOS/UEFI Version       : 0.00
BIOS/UEFI Full Version  :
------------------------------------------------------------------------------
```

CNA Port Target/LUN Information

1. Adapter Information ▸ 1. Converged Network Adapter ▸ 8. CNA Port Target/LUN Information

From the Converged Network Adaptor Information menu, select the **CNA Port Target/LUN Information** option to view port target/LUN information. From the port menu, select a port, and then select the information type (iSCSI or FCoE). For example:

```
Converged Network Adapter Information

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 2

CNA Port Target/LUN Information

1:  iSCSI
2:  FCoE
```

iSCSI

8. CNA Port Target/LUN Information ▸ <port selection> ▸ 1. iSCSI

From the CNA Port Target/LUN Information menu, select the **iSCSI** option to view iSCSI target/LUN information. For example:

```
-------------------------------------------------------------------------------
inst 1 Targets:
Target ID: 2  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 2
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk0
    Alias:
    State: Session Active
HBA/Target/Lun Number = 1/2/0
   Vend   = IET
   ProdID = VIRTUAL-DISK
   ProdRv = 0
   LunSize = 0.007 GB
Target ID: 3  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk1
    Alias:
    State: Session Active
HBA/Target/Lun Number = 1/3/0
   Vend   = IET
   ProdID = VIRTUAL-DISK
   ProdRv = 0
   LunSize = 0.007 GB
Target ID: 4  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk2
    Alias:
    State: Session Active
HBA/Target/Lun Number = 1/4/0
   Vend   = IET
   ProdID = VIRTUAL-DISK
   ProdRv = 0
   LunSize = 0.007 GB
Target ID: 5  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 6
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk4
    Alias:
    State: Session Active
HBA/Target/Lun Number = 1/5/0
   Vend   = IET
   ProdID = VIRTUAL-DISK
   ProdRv = 0
   LunSize = 0.007 GB
inst 1 Number of displayed targets: 5
-------------------------------------------------------------------------------
```

FCoE

8. CNA Port Target/LUN Information ▸ <port selection> ▸ 2. FCoE

From the CNA Port Target/LUN Information menu, select the **FCoE** option to view FCoE target/LUN information to open the Target List Menu. For example:

```
Target List Menu

========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model    : QLE8242
CNA Desc.    : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version   : 4.07.31
WWPN         : 21-00-00-0E-1E-04-95-EB
WWNN         : 20-00-00-0E-1E-04-95-EB
Link         : Online
========================================================

    1:  Disk (Online)
          Vendor                    : DGC
          Product ID                : RAID 0
          Product Rev               : 0324
          Serial Number             : APM00072401408
          Node Name                 : 50-06-01-60-C1-E0-63-25
          Port Name                 : 50-06-01-60-41-E0-63-25
          Port ID                   : 11-00-EF

    2:  Device (Offline)
          Vendor                    : N/A
          Product ID                : N/A
          Product Rev               : N/A
          Serial Number             :
          Node Name                 : 20-80-00-C0-FF-D8-32-7F
          Port Name                 : 20-70-00-C0-FF-D8-32-7F
          Port ID                   : 00-00-00

    3:  All Target(s)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    LUN List Menu
```

```
HBA Instance 0 (QLE8242 Port 1) : Online

Device
    Product Vendor: DGC
    Product ID    : RAID 0
    Product Rev   : 0324
    Node Name     : 50-06-01-60-C1-E0-63-25
    Port Name     : 50-06-01-60-41-E0-63-25
    Port ID       : 11-00-EF

1:  LUN   0
        Vendor                       : DGC
        Product ID                   : RAID 0
        Port Name                    : 50-06-01-60-41-E0-63-25
        Port ID                      : 11-00-EF
2:  LUN   1
        Vendor                       : DGC
        Product ID                   : RAID 0
        Port Name                    : 50-06-01-60-41-E0-63-25
        Port ID                      : 11-00-EF
3:  All LUN(s)

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
Product Vendor              : DGC
Product ID                  : RAID 0
Product Revision            : 0324
LUN                         : 0
Size                        : 21.00 GB
Type                        : SBC-2 Direct access block device
                                 (e.g., magnetic disk)
WWULN                       : 60-06-01-60-AE-50-1D-00-54-15-1D-1E-4A-45-DE-11
-----------------------------------------------------------
```

Adapter Configuration

2. Adapter Configuration ▸ 1. CNA Configuration

From the main menu, select the **Adapter Configuration** option, and then select the configuration type (**CNA Configuration**). The Converged Network Adapter (CNA) Protocol Type Selection menu presents options for FCoE, iSCSI, and NIC configuration. For example:

```
Adapter Type Configuration Selection

1:  CNA Configuration

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter (CNA) Protocol Type Selection

1:  CNA FCoE Configuration
2:  CNA iSCSI Configuration
3:  CNA NIC Configuration
```

CNA FCoE Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration

From the Converged Network Adapter (CNA) Protocol Type Selection menu, select the **CNA FCoE Configuration** option to open the Converged Network Adapter (CNA) FCoE Configuration menu with options to configure adapter parameters, target persistent binding, boot devices, virtual ports, driver parameters, and selective LUNs. Options to export a configuration and generate reports are also available. For example:

```
Converged Network Adapter (CNA) FCoE Configuration

1:  HBA Parameters
2:  Target Persistent Binding
3:  Boot Devices Configuration
4:  Virtual Ports (NPIV)
5:  Driver Parameters
6:  Selective LUNs
7:  Export (Save) Configuration
8:  Generate Reports
```

HBA Parameters

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 1. HBA Parameters

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **HBA Parameters** option to configure adapter parameters. From the port menu, select a port to open the HBA Parameters Menu with options to display parameters, configure parameters, and restore defaults. For example:

```
CNA Model QLE8242 SN: AFE1028C03899

   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

(p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
Please Enter Selection: 2

HBA Parameters Menu

===========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
===========================================================

   1:  Display HBA Parameters
   2:  Configure HBA Parameters
   3:  Restore Defaults
```

Display HBA Parameters

From the HBA Parameters menu, select the **Display HBA Parameters** option to view adapter parameters. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
Connection Options           : 1 - Point-to-Point Only
Data Rate                    : 10 Gbps
Frame Size                   : 2048
Hard Loop ID                 : 0
Loop Reset Delay (seconds)   : 5
Enable Host HBA BIOS         : Enabled
Enable Hard Loop ID          : Disabled
Enable FC Tape Support       : Enabled
Execution Throttle           : 65535
Login Retry Count            : 8
Port Down Retry Count        : 30
Enable LIP Full Login        : Enabled
Link Down Timeout (seconds)  : 30
Enable Target Reset          : Enabled
LUNs Per Target              : 128
Out Of Order Frame Assembly  : Disabled
```

Configure HBA Parameters

From the HBA Parameters menu, select the **Configure HBA Parameters** option to open the Configure Parameters Menu. Select the parameter option and change the value. Refer to Table 5-9 for details about these parameters and their values. For example:

```
 1:  Connection Options
 2:  Data Rate
 3:  Frame Size
 4:  Hard Loop ID
 5:  Loop Reset Delay (seconds)
 6:  Enable BIOS
 7:  Enable HBA Hard Loop ID
 8:  Enable Fibre Channel Tape Support
 9:  Operation Mode
10:  Interrupt Delay Timer (100ms)
11:  Execution Throttle
12:  Login Retry Count
13:  Port Down Retry Count
14:  Enable LIP Full Login
15:  Link Down Timeout (seconds)
16:  Enable Target Reset
17:  LUNs per Target
18:  Enable Receive Out Of Order Frame
19:  Commit Changes
20:  Abort Changes
```

Restore Defaults

CAUTION!

- Restoring the adapter parameters can make the adapter inoperable.
- When restoring NVRAM parameters, the current BIOS device settings are also cleared.

From the HBA Parameters menu, select the **Restore Defaults** to restore adapter parameters to their factory default values.

For example:

```
Warning:

    Please update the HBA parameters with extreme care.
    Incorrectly updating the HBA parameters may render the HBA inoperable.
    If you currently have boot device information set up in the HBA
    parameters, updating the HBA Parameters from a file
    will preserve that information.

    Do you want to proceed with the operation?

    1:  Yes
    2:  No
```

Target Persistent Binding

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 2. Target Persistent Binding

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Target Persistent Binding** option to configure target persistent binding. From the port menu, select a port to open the Target Persistent Binding Menu with options to display the configuration, bind targets, and unbind targets. For example:

```
Converged Network Adapter (CNA) FCoE Configuration

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2

  Target Persistent Binding Menu

========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN         : 21-00-00-0E-1E-04-95-EB
WWNN         : 20-00-00-0E-1E-04-95-EB
Link         : Online
========================================================

    1:  Display Configuration
    2:  Bind Target(s)
    3:  Unbind Target(s)
```

Display Configuration

1. CNA FCoE Configuration ▸ 2. Target Persistent Binding ▸ 1. Display Configuration

From the Target Persistent Binding Menu, select the **Display Configuration** option to view the target persistent binding configuration. For example:

```
--------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
--------------------------------------------------------------------------
Bind Type    Target Info            Port Name             Port ID  Target ID
---- ------- ---------------------- --------------------- --------
---------
  No   Disk         DGC      RAID 0 50-06-01-60-41-E0-63-25 11-00-EF
 Yes Device                  N/A N/A 20-70-00-C0-FF-D8-32-7F 00-00-00 0
```

Bind Target(s)

1. CNA FCoE Configuration ▸ 2. Target Persistent Binding ▸ 2. Bind Target(s)

From the Target Persistent Binding Menu, select the **Bind Target(s)** option to bind target devices. For example:

```
Target Persistent Binding Menu

========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
========================================================

    1:  Disk
            Vendor                  : DGC
            Product ID              : RAID 0
            Port Name               : 50-06-01-60-41-E0-63-25
            Port ID                 : 11-00-EF
            Bind                    : No
            Target ID               :
    2:  Device
            Vendor                  : N/A
            Product ID              : N/A
            Port Name               : 20-70-00-C0-FF-D8-32-7F
            Port ID                 : 00-00-00
            Bind                    : Yes
            Target ID               : 0
    3:  All Target(s)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

Enter Target ID: 1

            Target Persistent Binding - FC Port Configuration

            1:  Select More
            2:  Commit Changes
            3:  Cancel
```

Unbind Target(s)

1. CNA FCoE Configuration ▶ 2. Target Persistent Binding ▶ 3. Unbind Target(s)

From the Target Persistent Binding Menu, select the **Unbind Target(s)** option to unbind a target device. For example:

```
Target Persistent Binding Menu

========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
========================================================

    1:  Disk
            Vendor                   : DGC
            Product ID               : RAID 0
            Port Name                : 50-06-01-60-41-E0-63-25
            Port ID                  : 11-00-EF
            Bind                     : Yes
            Target ID                : 1
    2:  Device
            Vendor                   : N/A
            Product ID               : N/A
            Port Name                : 20-70-00-C0-FF-D8-32-7F
            Port ID                  : 00-00-00
            Bind                     : Yes
            Target ID                : 0
    3:  All Target(s)

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
```

Boot Devices Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 3. Boot Devices Configuration

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Boot Devices Configuration** option to configure boot devices. From the port menu, select a port to open the Boot Device Settings Menu with options to display and configure boot devices. For example:

```
Converged Network Adapter (CNA) FCoE Configuration

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 2

Boot Device Settings Menu

==========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
==========================================================

   1:  Display Boot Device(s)
   2:  Configure Boot Device(s)
```

Display Boot Device(s)

1. CNA FCoE Configuration ▸ 3. Boot Devices Configuration ▸ \<port selection\> ▸ 1. Display Boot Device(s)

From the Boot Device Settings Menu, select the **Display Boot Device(s)** option. For example:

```
--------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
--------------------------------------------------------------------------
Boot Device Settings:
-----------------------------------------
Selectable Boot: Disabled
-----------------------------------------
(Primary    ) Boot Port Name       LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 1) Boot Port Name       LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 2) Boot Port Name       LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
---------------------------     ------
(Alternate 3) Boot Port Name       LUN
---------------------------     ------
00-00-00-00-00-00-00-00               0
```

Configure Boot Device(s)

1. CNA FCoE Configuration ▸ 3. Boot Devices Configuration ▸ <port selection> ▸ 2. Configure Boot Device(s)

From the Boot Device Settings Menu, select the **Configure Boot Device(s)** option to open the boot device menu with options to configure the primary and alternative boot devices. For example:

```
Boot Device Settings Menu

=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=========================================================

    1:  Disk
          (Primary) Boot Port Name: 50-06-01-60-41-E0-63-25
    2:  Device
          (Primary) Boot Port Name: 20-70-00-C0-FF-D8-32-7F
    3:  BIOS boot default
        Selectable Boot:

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1

    Boot Device Settings Menu

=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=========================================================

    1:  LUN: 0 (boot)
    2:  LUN: 1
    3:  Cancel

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
HBA Parameters Save Complete. Changes has been saved to HBA 0.
```

Virtual Ports (NPIV)

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 4. Virtual Ports (NPIV)

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Virtual Ports (NPIV)** option to configure virtual ports. From the port menu, select a port to open the vPorts Menu with options to view, create, and delete virtual ports. For example:

```
Converged Network Adapter (CNA) FCoE Configuration

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 2

vPorts Menu

========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
========================================================

   1:  View vPorts Info
   2:  Create vPorts
   3:  Delete vPorts
```

View vPorts Info

1. CNA FCoE Configuration ▸ 4. Virtual Ports (NPIV) ▸ <port selection> ▸ 1. View vPorts Info

From the vPorts Menu, select the **View vPorts Info** option to select a virtual port and view information. For example:

```
Display vPorts Menu

HBA Instance 0 (QLE8242 Port 1) : Online
    WWPN: 21-00-00-0E-1E-04-95-EB
    Desc: QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)

  1: vPort  0: WWPN: 21-DD-00-0E-1E-04-95-EB Online [ ]
  2: Select All
  3: Proceed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Display vPorts Menu

HBA Instance 0 (QLE8242 Port 1) : Online
    WWPN: 21-00-00-0E-1E-04-95-EB
    Desc: QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)

  1: vPort  0: WWPN: 21-DD-00-0E-1E-04-95-EB Online [x]
  2: Deselect All
  3: Proceed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 3
-----------------------------------------------------------------------------
HBA Instance                    : 0
HBA Model                       : QLE8242
HBA Description                 : QLE8242 QLogic Pci Express to 10GbE Dual
Channel CNA (FCoE)
Virtual Port                    : 0
Node Name                       : 20-DD-00-0E-1E-04-95-EB
Port Name                       : 21-DD-00-0E-1E-04-95-EB
Port ID                         : 11-00-20
Serial Number                   : AFE1028C03899
Max Port Speed                  : 10.63 Gbps
Priority QoS                    : Not Supported
QoS Setting Enable State        : Not Supported
QoS Setting Lock State          : Not Supported
```

Create vPorts

1. CNA FCoE Configuration ▸ 4. Virtual Ports (NPIV) ▸ <port selection> ▸ 2. Create vPorts

From the vPorts Menu, select the **Create vPorts** option to open the Create vPorts Menu with options to specify vPort options and generate a vPort. For example:

```
Create vPorts Menu

========================================================
CNA             : 0 Port: 1
SN              : AFE1028C03899
ENode MacAddr   : 00:0E:1E:04:95:EB
CNA Model       : QLE8242
CNA Desc.       : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version      : 4.07.31
WWPN            : 21-00-00-0E-1E-04-95-EB
WWNN            : 20-00-00-0E-1E-04-95-EB
Link            : Online
========================================================

    1:  Options
    2:  Generate
```

Options Select the **Options** option to specify the number of vPorts to create. For example:

```
Number of vPort(s) to generate (0-63) [63]: 3
Updating number of vPort(s) to be generated to 3..., done
```

Generate Select the **Generate** option to modify the WWPNs/WWNNs that were generated for the virtual ports. For example:

```
Create vPorts Menu

HBA Instance 0 (QLE8242 Port 1) : Online
    WWPN: 21-00-00-0E-1E-04-95-EB
    Desc: QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)

  1: 21-7F-00-0E-1E-04-95-EB
  2: 21-82-00-0E-1E-04-95-EB
  3: 21-85-00-0E-1E-04-95-EB
  4: Commit

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
Enter the new WWN (21-[XX]-00-0e-1E-04-95-EB) [7F]:
```

Delete vPorts

1. CNA FCoE Configuration ▸ 4. Virtual Ports (NPIV) ▸ <port selection> ▸ 3. Delete vPorts

From the vPorts Menu, select the Delete vPorts option to select and delete virtual ports. For example:

```
Delete vPorts Menu

HBA Instance 0 (QLE8242 Port 1) : Online
    WWPN: 21-00-00-0E-1E-04-95-EB
    Desc: QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)

  1: vPort  0: WWPN: 21-DD-00-0E-1E-04-95-EB Online [ ]
  2: Select All
  3: Proceed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Delete vPorts Menu

HBA Instance 0 (QLE8242 Port 1) : Online
    WWPN: 21-00-00-0E-1E-04-95-EB
    Desc: QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)

  1: vPort  0: WWPN: 21-DD-00-0E-1E-04-95-EB Online [x]
  2: Deselect All
  3: Proceed

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 3
Configuration changed, 1 vPort(s) of HBA instance 0 - QLE8242 have been deleted.
```

Driver Parameters

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 5. Driver Parameters

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Driver Parameters** option. From the port menu, select a port to open the Driver Settings Menu with options to configure target display options and target binding options. For example:

```
Converged Network Adapter (CNA) FCoE Configuration

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

Driver Settings Menu

----------------------
Target: Display Options
----------------------
1: Present persistently bound target(s) plus
   any new target(s) with driver default (Current)
2: Present persistently bound target(s) Only
----------------------
Target: Binding Options
----------------------
3: Bind by World Wide Port Name (Current)
4: Bind by Port ID
5: Commit Changes
```

Present persistently bound target(s) plus any new target(s) with driver defaults

1. CNA FCoE Configuration ▸ 5. Driver Parameters ▸ <port selection> ▸ 1. Present persistently bound targets plus any new targets with driver defaults

From the Drive Settings Menu, select this option to view persistently bound target devices and new target devices with driver defaults. This setting affects the output from the **Display Configuration** option (1. CNA FCoE Configuration42. Target Persistent Binding41. Display Configuration). You must select the **Commit Changes** option to save changes to this option.

Present persistently bound target(s) only

1. CNA FCoE Configuration ▸ 5. Driver Parameters ▸ <port selection> ▸ 2. Present persistently bound target(s) only

From the Drive Settings Menu, select this option to view persistently bound target devices only. This setting affects the output from the **Display Configuration** option (1. CNA FCoE Configuration42. Target Persistent Binding41. Display Configuration). You must select the **Commit Changes** option to save changes to this option.

Bind by World Wide Port Name

1. CNA FCoE Configuration ▸ 5. Driver Parameters ▸ <port selection> ▸ 3. Bind by World Wide Port Name

From the Drive Settings Menu, select the **Bind by World Wide Port Name** option to configure the CLI to bind ports by WWPN. This setting affects the **Bind Target(s)** option (1. CNA FCoE Configuration42. Target Persistent Binding42. Bind Target(s)). You must select the **Commit Changes** option to save changes to this option.

Bind by Port ID

1. CNA FCoE Configuration ▸ 5. Driver Parameters ▸ <port selection> ▸ 4. Bind by Port ID

From the Drive Settings Menu, select the **Bind by Port ID** option to configure the CLI to bind target devices by port ID. This setting affects the **Bind Target(s)** option (1. CNA FCoE Configuration42. Target Persistent Binding42. Bind Target(s)). You must select the **Commit Changes** option to save changes to this option.

Commit Changes

1. CNA FCoE Configuration ▸ 5. Driver Parameters ▸ <port selection> ▸ 5. Commit Changes

From the Drive Settings Menu, select the **Commit Changes** option to save and activate target binding changes. For example:

```
Warning:

    You have requested to commit driver setting changes
    of the adapter. All adapters dependant on the same
    driver will be affected by the change.

    Do you want to proceed with the operation?

1:  Yes
2:  No
```

Selective LUNs

2. Adapter Configuration ▶ 1. CNA Configuration ▶ 1. CNA FCoE Configuration ▶ 6. Selective LUNs

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Selective LUNs** option to configure selective LUNs. From the port menu, select a port to open the Selective LUNS Menu with options to view the LUN configuration and configure LUNs. For example:

```
CNA Model QLE8242 SN: AFE1028C03899

    1.  Port  2 [Protocol(s): NIC iSCSI FCoE]
        MAC Address: 00:0E:1E:04:95:EC
        WWPN: 21-00-00-0E-1E-04-95-EF
        Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2.  Port  1 [Protocol(s): NIC iSCSI FCoE]
        MAC Address: 00:0E:1E:04:95:E8
        WWPN: 21-00-00-0E-1E-04-95-EB
        Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2


    Selective LUNs Menu

===========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
===========================================================

    1:  Display LUN Configuration
    2:  Manual Configure LUNs
    3:  Auto Configure LUNs
```

Display LUN Configuration

1. CNA FCoE Configuration ▶ 6. Selective LUNs ▶ <port selection> ▶ 1. Display LUN Configuration

Select the **Display LUN Configuration** option to view the LUN configuration.

Manual Configure LUNs

1. CNA FCoE Configuration ▸ 6. Selective LUNs ▸ <port selection> ▸ 2. Manual Configure LUNs

Select the **Manual Configure LUNs** option to open the Selective LUN Menu with options to select a target device on which to enable or disable LUNs. Select a target device, select the LUNs, and then enable or disable the LUNs. For example:

```
Selective LUN Menu (Configuration)

========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
========================================================

    1:  Disk
           Vendor                    : DGC
           Product ID                : RAID 0
           Port Name                 : 50-06-01-60-41-E0-63-25
           Port ID                   : 11-00-EF
           Bind                      : No
           Target ID                 :
    2:  Device
           Vendor                    : N/A
           Product ID                : N/A
           Port Name                 : 20-70-00-C0-FF-D8-32-7F
           Port ID                   : 00-00-00
           Bind                      : Yes
           Target ID                 : 0

      (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
      Please Enter Selection: 1

   Selective LUN Menu (Configuration)

    1:  Disk
           Vendor                    : DGC
           Product ID                : RAID 0
           Port Name                 : 50-06-01-60-41-E0-63-25
           Port ID                   : 11-00-EF
           Bind                      : No
           Target ID                 :
    2:  Device
```

```
        Vendor                       : N/A
        Product ID                   : N/A
        Port Name                    : 20-70-00-C0-FF-D8-32-7F
        Port ID                      : 00-00-00
        Bind                         : Yes
        Target ID                    : 0

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Selective LUN Menu (Configuration)

1:  LUN   0
        Vendor                       : DGC
        Product ID                   : RAID 0
        Port Name                    : 50-06-01-60-41-E0-63-25
        Port ID                      : 11-00-EF
2:  LUN   1
        Vendor                       : DGC
        Product ID                   : RAID 0
        Port Name                    : 50-06-01-60-41-E0-63-25
        Port ID                      : 11-00-EF
3:  All LUNs

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Selective LUN Menu (Configuration)

HBA Instance 0 (QLE8242 Port 1) : Online

Target WWPN 50-06-01-60-41-E0-63-25

LUN 0:

1:  Enable
2:  Disable

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Select more LUN(s)?

1:  Select More
2:  Commit Changes

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2
Configuration saved on HBA instance 0 (WWPN 21-00-00-0E-1E-04-95-EB). LUN
persistent data saved successfully.
Please reboot the system for the saved configuration to become effective.
```

Auto Configure LUNs

1. CNA FCoE Configuration ▸ 6. Selective LUNs ▸ <port selection> ▸ 3. Auto Configure LUNs

Select the **Auto Configure LUNs** option to automatically enable or disable all LUNs on all targets. For example:

```
Selective LUN Menu (Configuration)

HBA Instance 0 (QLE8242 Port 1) : Online

All Targets

All LUNs

1:  Enable
2:  Disable

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1
```

Configuration saved on HBA instance 0 (WWPN 21-00-00-0E-1E-04-95-EB). LUN persistent data saved successfully.

Please reboot the system for the saved configuration to become effective.

Export (Save) Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 7. Export (Save) Configuration

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Export (Save) Configuration** option to save adapter parameters. From the port menu, select a port to open the Export (Save) Configure menu with options to save adapter parameters. For example:

```
Converged Network Adapter (CNA) FCoE Configuration

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2

   Export (Save) Configuration

=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    : 4.07.31
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=========================================================

    1:  Save HBA Parameters

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
Enter a file name or Hit <Enter> to abort: filename
Saving current HBA Parameters of HBA 1 to file filename.dat...
HBA Parameters saved successfully (HBA instance 1 - filename.dat).
```

Generate Reports

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 1. CNA FCoE Configuration ▸ 8. Generate Reports

From the Converged Network Adapter (CNA) FCoE Configuration menu, select the **Generate Reports** option to view comprehensive host and adapter information. From the port menu, select a port for which to generate reports. For example:

```
CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2
QLogic FCAPI (x64)
v1.7.3 Build 38
Copyright (C) 2003-2010 QLogic Corp.
All rights reserved.
QLogic FC/FCoE Common Library
Build Type:  Release
Build Date:  12/07/2010 6:43:25 PM
-------------------------------------------------------------------------------
Host Name                      : APPS4055
OS Type                        : Microsoft Windows Server 2008 R2 Datacenter
64-bit x64
OS Version                     : Build 7600
SDM API Version                : 1.28.0.81 QLSDM.DLL
-------------------------------------------------------------------------------
HBA Model QLE8242 (SN AFE1028C03899):
  Port  2 WWPN 21-00-00-0E-1E-04-95-EF (HBA instance  1) SFP not installed
  Port  1 WWPN 21-00-00-0E-1E-04-95-EB (HBA instance  0) Online
-------------------------------------------------------------------------------
Total QLogic HBA(s) : 1

Time and date:                 Tue Mar 08 07:47:34 2011

-------------------------------------------------------------------------------


HBA General Information

-------------------------------------------------------------------------------
```

```
---------------------------------------------------------------------
Host Name                    : APPS4055
HBA Instance                 : 0
HBA Model                    : QLE8242
HBA Description              : QLE8242 QLogic Pci Express to 10GbE Dual
Channel CNA (FCoE)
HBA ID                       : 0-QLE8242
HBA Alias                    :
HBA Port                     : 1
Port Alias                   :
Node Name                    : 20-00-00-0E-1E-04-95-EB
        .
        .
        .
```

CNA iSCSI Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration

From the Converged Network Adapter (CNA) Protocol Type Selection menu, select the **CNA iSCSI Configuration** option to open the Converged Network Adapter (CNA) iSCSI Configuration menu with options to configure adapter parameters, ports, port IP settings, target devices, and boot devices. An option to export a configuration is also available. For example:

```
Converged Network Adapter (CNA) iSCSI Configuration

1:   HBA Level Parameter Configuration

2:   Port Configuration

3:   Port IP Settings

4:   Target Configuration

5:   Boot Devices Configuration

6:   Export (Save) Configuration
```

HBA Level Parameter Configuration

2. Adapter Configuration ▶ 1. CNA Configuration ▶ 2. CNA iSCSI Configuration ▶ 1. HBA Level Parameter Configuration

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **HBA Level Parameter Configuration** option. From the port menu, select a port to open the HBA Level Parameter Configuration menu with options to view adapter parameters, configure adapter parameters, save changes, reset the adapters, and refresh the display. For example:

```
Converged Network Adapter (CNA) iSCSI Configuration

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

   (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
   Please Enter Selection: 2

HBA Level Parameter Configuration

========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
CNA Model    : QLE8242
iSCSI Name   : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version   : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
========================================================
   1:  Display HBA Level Parameters
   2:  Configure HBA Level Parameters
   3:  Save changes and reset HBA
   4:  Refresh
```

Display HBA Level Parameters

2. CNA iSCSI Configuration ▸ 1. HBA Level Parameter Configuration ▸ 1. Display HBA Level Parameters

Select the **Display HBA Level Parameters** option to view adapter parameters. For example:

```
------------------------------------------------------------------
HBA_Alias                           :hba_alias
------------------------------------------------------------------
```

Configure HBA Level Parameters

2. CNA iSCSI Configuration ▸ 1. HBA Level Parameter Configuration ▸ 2. Configure HBA Level Parameters

Select the **Configure HBA Level Parameters** option to configure the adapter alias. For example:

```
------------------------------------------------------------------
HBA_Alias [] :hba_alias
------------------------------------------------------------------
```

Save changes and reset HBA

2. CNA iSCSI Configuration ▸ 1. HBA Level Parameter Configuration ▸ 3. Save changes and reset HBA

Select the **Save changes and reset HBA** option to save changes and reset the adapter. For example:

```
There are multiple ports on the HBA you are saving.
You can save all the changes you have made to each port on this
HBA or save changes for this port.  If you save just this port,
the changes for the other port, if any, will be lost.
Do you want to save both ports?[Yes] Yes
```

Refresh

Select the **Refresh** option to refresh the adapter data.

Port Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 2. Port Configuration

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **Port Configuration** option. From the port menu, select a port to open the Port Link Configuration menu with options to display and configure link configurations, edit configured port settings, restore port factory defaults, manage BIOS/UEFI settings, and refresh the display. For example:

```
Converged Network Adapter (CNA) iSCSI Configuration

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

   Port Link Configuration

=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=========================================================
   1:  Port Link Settings Menu
   2:  Edit Configured Port Settings Menu
   3:  Port Restore Factory Defaults
   4:  BIOS/UEFI Settings Menu
   5:  Refresh
```

Port Link Settings Menu

2. CNA iSCSI Configuration ▸ 2. Port Configuration ▸ <port selection> ▸ 1. Port Link Settings Menu

From the Port Link Configuration menu, select the **Port Link Settings Menu** option to open the Port Link Settings Menu with options to display the active link configuration, display the configured link configuration, and save changes. For example:

```
    Port Link Settings Menu

===========================================================
CNA            : 0 Port: 2
SN             : AFE1028C03899
CNA Model      : QLE8242
iSCSI Name     : iqn.2000-04.com.qlogic:isp8214.000E1E0495EE.5
FW Version     : 4.7.31
iSCSI MacAddr  : 00:0E:1E:04:95:EE
IPv4 Address   : 192.168.1.45
===========================================================
    1:  Display Active Link Configuration
    2:  Display Configured Link Configuration
    3:  Configure Link Configuration
    4:  Save changes and reset HBA (if necessary)
```

Display Active Link Configuration Select this option to view the active link configuration. For example:

```
-------------------------------------------------------------------
Connection Type        : Fibre
Portal Duplex          : Full Duplex
Portal Flow Control    : on
Portal Link Speed      : 10 Gbps
-------------------------------------------------------------------
```

Display Configured Link Configuration Select this option to view the configured link configuration. For example:

```
-------------------------------------------------------------------
This operation is not available for this adapter (8242).
-------------------------------------------------------------------
```

Configure Link Configuration Select this option to configure the link. For example:

```
------------------------------------------------------------------
This operation is not available for this adapter (8242).
------------------------------------------------------------------
```

Save changes and reset HBA Select this option to save changes and reset the adapter.

Edit Configured Port Settings Menu

2. CNA iSCSI Configuration ▸ 2. Port Configuration ▸ <port selection> ▸ 2. Edit Configured Port Link Settings Menu

From the Port Link Configuration menu, select the **Edit Configured Port Settings Menu** option to open the Port Link Settings Menu with options to view configured port settings, change the port iSCSI alias, configure port firmware settings, restore legacy 4010 default port settings, and save changes. For example:

```
     Port Link Settings Menu

==========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
CNA Model    : QLE8242
iSCSI Name   : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version   : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
==========================================================
    1:  Display Configured Port Settings
    2:  Change Port iSCSI Alias Name
    3:  Port Firmware Settings Menu
    4:  Legacy 4010 Restore Default Port Settings
    5:  Save changes and reset HBA (if necessary)
```

Display Configure Port Settings Select this option to view the configured port settings. For example:

```
---------------------------------------------------------------------
*** Displaying ISCSI Settings inst=1 ***
Force_Negotiate_Main_iSCSI_Keys     :  off
iSCSI_Send_Markers                  :  off(*)
iSCSI_Header_Digests                :  off
iSCSI_Data_Digests                  :  off
iSCSI_Immediate_Data                :  on
iSCSI_Initial_R2T                   :  off
iSCSI_Data_Seq_In_Order             :  on(*)
iSCSI_Data_PDU_In_Order             :  on(*)
iSCSI_CHAP_Auth                     :  off(*)
iSCSI_Bidi_CHAP_Auth                :  off(*)
.
.
.
Values noted with (*) are read only.
---------------------------------------------------------------------
```

Change Port iSCSI Alias Name Select this option to change the port iSCSI alias. For example:

```
Enter the value for iSCSI_Alias :
```

Port Firmware Settings Menu Select this option to open the Port Firmware Settings menu with options to view configured port settings, edit a specific port setting, configure iSCSI settings, configure firmware settings, configure device settings, configure basic settings configure advanced settings, configure IPV6 settings, configure IPv6 TCP settings, save changes, and refresh adapter data. For example:

```
    Port Firmware Settings Menu

==========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
CNA Model    : QLE8242
iSCSI Name   : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version   : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
==========================================================
     1:  Display Configured Port Settings
     2:  Edit A Specific Port Setting
     3:  Configure ISCSI Settings
     4:  Configure Firmware Settings
     5:  Configure Device Settings
     6:  Configure Basic Settings
     7:  Configure Advanced Settings
     8:  Configure IPv6 Settings
     9:  Configure IPv6 TCP Settings
    10:  Save changes and reset HBA (if necessary)
    11:  Refresh
```

- **Display Configured Port Settings**—Select this option to view configured port settings. For example:

```
---------------------------------------------------------------
*** Displaying ISCSI Settings inst=1 ***
Force_Negotiate_Main_iSCSI_Keys    :  off
iSCSI_Send_Markers                 :  off(*)
iSCSI_Header_Digests               :  off
iSCSI_Data_Digests                 :  off
iSCSI_Immediate_Data               :  on
iSCSI_Initial_R2T                  :  off
iSCSI_Data_Seq_In_Order            :  on(*)
iSCSI_Data_PDU_In_Order            :  on(*)
iSCSI_CHAP_Auth                    :  off(*)
iSCSI_Bidi_CHAP_Auth               :  off(*)
iSCSI_Snack                        :  off
iSCSI_Discovery_Logout             :  on
iSCSI_Strict_Login                 :  off
iSCSI_Error_Recovery_Level         :  0(*)
iSCSI_Alias                        :
.
.
.
Values noted with (*) are read only.
---------------------------------------------------------------
```

- **Edit A Specific Port Setting**—This option is currently not supported.

- **Configure ISCSI Settings**—Select this option to configure iSCSI settings. For more information about these settings, refer to Table 6-3. For example:

```
Force_Negotiate_Main_iSCSI_Keys [off] :
iSCSI_Header_Digests [off] :
iSCSI_Data_Digests [off] :
iSCSI_Immediate_Data [on] :
iSCSI_Initial_R2T [off] :
iSCSI_Snack [off] :
iSCSI_Discovery_Logout [on] :
iSCSI_Strict_Login [off] :
iSCSI_Alias [] :
```

- **Configure Firmware Settings**—Select this option to configure firmware settings. For example:

```
FW_ZIO_Enable_Mode [off] :
AFW_Device_Timeouts [on] :
AFW_Delayed_Ack [off] :
AFW_AutoConnect [on] :
```

- **Configure Device Settings**—Select this option to configure device settings. For more information about these settings, refer to Table 6-3. For example:

```
Large_Frames [off] :
ExeThrottle [0] :
FirstBurstLen [256] :
KeepAliveTO [30] :
MaxBurstLen [512] :
MaxOutstandingR2T [1] :
IPv4TOS [0] :
IPv4TTL [64] :
```

- **Configure Basic Settings**—Select this option to configure basic settings. For more information about these settings, refer to Table 6-3. For example:

```
iSCSI_Discovery_Logout [on] :
iSCSI_Strict_Login [off] :
TCP_DHCP [off] :
TCP_Nagle [off] :
iSCSI_Alias [] :
IP_Address [192.168.1.45] :
IP_Subnet_Mask [255.255.255.0] :
IP_Gateway [0.0.0.0] :
Task_Management_Timeout [10] :
ENABLE_IPV4 [on] :
ENABLE_IPV6 [off] :
LOC_LINK_AUTO [off] :
ROUTABLE_AUTO [off] :
LDROUTER_AUTO [off] :
IPv6_Addr_Local_link [fe80::] :
ENABLE_4022IPV4 [on] :
```

■ **Configure Advanced Settings**—Select this option to configure advanced settings. For more information about these settings, refer to Table 6-3. For example:

```
FW_ZIO_Enable_Mode [off] :
AFW_Device_Timeouts [on] :
AFW_Delayed_Ack [off] :
AFW_AutoConnect [on] :
ExeThrottle [0] :
FirstBurstLen [256] :
IP_ARP_Redirect [off] :
VLAN_Enable [off] :
VLAN_User_Priority [0] :
VLAN_ID [0] :
IPv4_TOS_ENABLE [off] :
Force_Negotiate_Main_iSCSI_Keys [off] :
iSCSI_Header_Digests [off] :
iSCSI_Data_Digests [off] :
iSCSI_Immediate_Data [on] :
iSCSI_Initial_R2T [off] :
KeepAliveTO [30] :
MaxBurstLen [512] :
MaxOutstandingR2T [1] :
TCP_Time_Stamp [on] :
TCP_Window_Scale [0] :
iSCSI_Name [iqn.2000-04.com.qlogic:isp8214.000E1E0495EE.5] :
ZIO [0] :
IPv4TOS [0] :
IPv4TTL [64] :
IPv6_TCP_Time_Stamp [on] :
IPv6_TCP_Window_Scale [0] :
IPv6_VLAN_ID [0] :
IPv6_VLAN_User_Priority [0] :
IPv6_VLAN_Enable [off] :
IPv6_Traffic_Class [0] :
IPv6_Hop_Limit [64] (router may override) :
IPv6_ND_Reachable_Timer [30000] (router may override) :
IPv6_ND_Retransmit_Timer [1000] (router may override) :
IPv6_ND_Stale_Timeout [600000] :
IPv6_DAD_Count [1] :
IPv6_MCast_Listnr_Disco_Enable [off] :
P3P_TCP_Max_Window_Size [0] :
AFW_Serlz_Task_Mngmt [off] :
Large_Frames [off] :
```

■ **Configure IPV6 Settings**—Select this option to configure IPV6 settings. For example:

```
IPv6_Addr_Local_link [fe80::] :
IPv6_Addr_Routable0 [::] :
IPv6_Addr_Routable1 [::] :
Default_IPv6_Router [::] :
IPv6_Port [3260] :
IPv6_Gratuitious_Neighbor_Ad_Enable [off] :
IPv6_Redirect_Enable [off] :
```

■ **Configure IPV6 TCP Settings**—Select this option to configure IPV6 TCP settings. For example:

```
IPv6_Addr_Local_link [fe80::] :
IPv6_Addr_Routable0 [::] :
IPv6_Addr_Routable1 [::] :
Default_IPv6_Router [::] :
IPv6_Port [3260] :
IPv6_Gratuitious_Neighbor_Ad_Enable [off] :
IPv6_Redirect_Enable [off] :
```

■ **Save changes and reset HBA**—Select this option to save changes and reset the adapter.

■ **Refresh**—Select this option to refresh the adapter data.

Legacy 4010 Restore Default Port Settings Select this option to restore QLogic 4010 iSCSI adapter default port settings.

Save changes and reset HBA Select this option to save changes and reset the adapter.

Port Restore Factory Defaults

2. CNA iSCSI Configuration ▸ 2. Port Configuration ▸ <port selection> ▸ 3. Port Restore Factory Defaults

From the Port Link Configuration menu, select the **Port Restore Factory Defaults** option to restore port factory defaults. A `Yes` response restores factory default for all port parameters; a `No` response provides the opportunity to restore defaults for selected parameters.

BIOS/UEFI Settings Menu

2. CNA iSCSI Configuration ▸ 2. Port Configuration ▸ <port selection> ▸ 4. BIOS/UEFI Settings Menu

From the Port Link Configuration menu, select the **BIOS/UEFI Settings Menu** option to open the BIOS/UEFI Settings Menu with options to view BIOS/UEFI information, set the BIOS/UEFI mode, set primary and secondary boot target information, clear primary and secondary boot information, set an alternative client ID, save changes, and reset the adapter. For example:

```
BIOS/UEFI Settings Menu

=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=========================================================
    1:  Display BIOS/UEFI Information
    2:  Set BIOS/UEFI Mode
    3:  Set Primary Boot Target Information
    4:  Set Secondary Boot Target Information
    5:  Clear Primary Boot Target Information
    6:  Clear Secondary Boot Target Information
    7:  Set Alternatve Client ID
    8:  Save changes
    9:  Save changes and reset HBA (if necessary)
```

Display BIOS/UEFI Information Select this option to view the BIOS/UEFI information.

Set BIOS/UEFI Mode Select this option to set the BIOS/UEFI mode.

Set Primary Boot Target Information Select this option to set the primary boot target parameters. For example:

```
     Please Enter Selection: 3
Target ID: 2  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 2
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk0
    Alias:
    State: Session Active
Target ID: 3  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk1
    Alias:
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk2
    Alias:
    State: Session Active
Target ID: 6  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 6
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk4
    Alias:
    State: Session Active
Enter a Target ID:2
Enter a LUN Number[0,(default 0)]:
```

Set Secondary Boot Target Information Select this option to set the secondary boot target parameters. For example:

```
      Please Enter Selection: 4
Target ID: 2  hba_no: 1   IP: 192.168.30.85   Port: 3260 TGT Instance #: 2
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk0
    Alias:
    State: Session Active
Target ID: 3  hba_no: 1   IP: 192.168.30.85   Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk1
    Alias:
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.30.85   Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk2
    Alias:
    State: Session Active
Target ID: 6  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 6
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk4
    Alias:
    State: Session Active
Enter a Target ID:3
Enter a LUN Number[0,(default 0)]:
```

Clear Primary Boot Target Information Select this option to clear the primary boot target information.

Clear Secondary Boot Target Information Select this option to clear the secondary boot target information.

Set Alternative Client ID Select this option to set the alternative client ID.

Save changes Select this option to save changes.

Save changes and reset HBA Select this option to save changes and reset the adapter.

Refresh

2. CNA iSCSI Configuration ▸ 2. Port Configuration ▸ <port selection> ▸ 5. Refresh

Select the **Refresh** option to refresh the adapter data.

Port IP Settings

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 3. Port IP Settings

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **Port IP Settings** option. Select a port from the port menu to open the Port IP Settings menu with options to view and configure IP settings. For example:

```
Converged Network Adapter (CNA) iSCSI Configuration

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2


   Port IP Settings

==========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
==========================================================
    1:  Display Network Settings
    2:  Configure IP Settings
    3:  Save changes and reset HBA (if necessary)
    4:  Refresh
```

Display Network Settings

2. CNA iSCSI Configuration ▸ 3. Port IP Settings ▸ <port selection> ▸ 1. Display Network Settings

Select the **Display Network Settings** option to view the IPV4 or IPV6 address, gateway, and subnet mask. For example:

```
------------------------------------------------------------------
User Defined IP Address.
IPv4 Address            : 192.168.1.45
Gateway                 : 0.0.0.0
Subnet Mask             : 255.255.255.0

IPv6 Protocol is currently disabled.
iSNS                    : Disabled.
------------------------------------------------------------------
```

Configure IP Settings

2. CNA iSCSI Configuration ▸ 3. Port IP Settings ▸ <port selection> ▸ 2. Configure IP Settings

Select the **Configure IP Settings** option to configure the IPV4 or IPV6 address, gateway, and subnet mask. For example:

```
Enable IPv4 [on] :
DHCP to obtain IPv4 Network Information: [off] :
IP_Address [192.168.1.45] :
IP_Subnet_Mask [255.255.255.0] :
IP_Gateway [0.0.0.0] :
Enable IPv6 [off] :
```

Save changes and reset HBA

2. CNA iSCSI Configuration ▸ 3. Port IP Settings ▸ <port selection> ▸ 3. Save changes and reset HBA

Select the **Save changes and reset HBA** option to save changes and reset the adapter.

Refresh

2. CNA iSCSI Configuration ▸ 3. Port IP Settings ▸ <port selection> ▸ 4. Refresh

Select the **Refresh** option to refresh the adapter data.

Target Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 4. Target Configuration

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **Target Configuration** option. Select a port from the port menu to open the Target Configuration menu with options to manage targets. For example:

```
Converged Network Adapter (CNA) iSCSI Configuration

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

  Target Configuration

========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
CNA Model    : QLE8242
iSCSI Name   : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version   : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address : 192.168.1.45
========================================================
    1:  List Targets
    2:  Display Target Information
    3:  Bind Target
    4:  Delete Target
    5:  Configure Target Parameters
    6:  Add A Target
    7:  Disable a Target
    8:  Enable a Target
    9:  Configure Target Authentication Menu
   10:  Target Discovery Menu
   11:  List LUN information
   12:  Save Target/CHAP Changes
   13:  Refresh
```

List Targets

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 1. List Targets

From the Target Configuration menu, select the **List Targets** option to view a list of target devices. For example:

```
-------------------------------------------------------------------
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT
Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260 TGT
Instance #: 4
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
    Alias:0607.a2
    State: Session Active
-------------------------------------------------------------------
```

Display Target Information

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 2. Display Target Information

Select the **Display Target Information** option to view target device information. For example:

```
Enter a Target ID:3
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
TGT_iSCSI_Name                    :  iqn.1992-04.com.emc:cx.apm00103600607.b2
TGT_Target_ID                     :  3(*)
TGTO_Active                       :  off(*)
TGTO_Access_Granted               :  off(*)
TGTO_Target_Entry                 :  on(*)
TGTO_Initiator_Entry              :  off(*)
TGT_RetryCount                    :  0(*)
TGT_RetryDelay                    :  0(*)
TGT_DevType                       :  0(*)
TGT_ExeThrottle                   :  0
TGT_FirstBurstLen                 :  128
          TGTIPO_Fragmentation            :  on(*)
          .
          .
          .
```

Bind Target

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 3. Bind Target

Select the **Bind Target** option to bind a target device.

Delete Target

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 4. Delete Target

Select the **Delete Target** option to delete a target device. For example:

```
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT
Instance #: 3
     ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
     Alias: 0607.b2
     State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260 TGT
Instance #: 4
     ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
     Alias:0607.a2
     State: Session Active
Enter a Target ID or "ALL":
```

Configure Target Parameters

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 5. Configure Target Parameters

Select the **Configure Target Parameters** option to configure target device parameters.

```
Enter a Target ID:3
TGT_iSCSI_Name [] :iqn.1992-04.com.emc:cx.apm00103600607.b2
TGT_ExeThrottle [0] :
TGT_FirstBurstLen [256] :
TGTISCSIO_Force_Neg_Main_Keys [off] :
TGTISCSIO_Header_Digests [off] :
TGTISCSIO_Data_Digests [off] :
TGTISCSIO_Immediate_Data [on] :
TGTISCSIO_Initial_R2T [off] :
TGTISCSIO_CHAP_Authentication [off] :
TGTISCSIO_Bidi_CHAP_Authentication [on] :
TGTISCSIO_Snack [off] :
TGTISCSIO_Discovery_Logout [on] :
TGTISCSIO_Strict_Login [off] :
TGT_KeepAliveTimeout [30] :
TGT_DefaultTimeout [2] :
TGT_MaxBurstLen [512] :
TGT_MaxOutstandingR2T [1] :
TGT_Port [3260] :
TGTTCPO_Nagle [off] :
TGTTCPO_Timestamp [on] :
TGT_TaskManagementTimeout [10] :
TGT_InitiatorSessID [0x000e1e0495ea] :
TGT_TargetIPAddress [0.0.0.0] :
TGT_Window_Scale_Enable [on] :
TGT_Rx_Window_Scale [0] :
TGT_Type_of_Service [0] :
TGT_4022_Deleyed_ACK [off] :
```

Add A Target

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 6. Add A Target

Select the **Add A Target** option to add a target device. For example:

```
IPv6 Target? [off]:
TGT_iSCSI_Name [] :iqn.1992-04.com.emc:cx.apm00103600607.b2
TGT_Port [3260] :
TGT_TargetIPAddress [0.0.0.0] :192.168.1.11
```

Disable a Target

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 7. Disable a Target

Select the **Disable A Target** option to disable a target device. For example:

```
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
    Alias:0607.a2
    State: Session Active
Enter a Target ID:3
Target disable complete.
```

Enable a Target

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 8. Enable a Target

Select the **Enable A Target** option to enable a target device. For example:

```
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: No Connection
Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
    Alias:0607.a2
    State: Session Active
Enter a Target ID:3
Target enable complete.
```

Configure Target Authentication Menu

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 9. Configure Target Authentication Menu

Select the **Confirm Target Authentication Menu** option to open the Configure Target Authentication Menu with options to display the CHAP table, manage CHAP entries, save changes, and refresh adapter data. For example:

```
Configure Target Authentication Menu

=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=========================================================
    1:  Display CHAP Table
    2:  Display Targets Using CHAP Entries
    3:  Assign a CHAP Entry to a Target
    4:  Add a CHAP entry
    5:  Add a Default BIDI CHAP
    6:  Edit a CHAP entry
    7:  Delete a CHAP entry
    8:  Save changes and reset HBA (if necessary)
    9:  Refresh
```

Display CHAP Table Select this option to view the CHAP table. For example:

```
-------------------------------------------------------------------
CHAP TABLE
Entry: 1
    Name: chap_target1
    Secret: q1w2e3r4t5y6
Entry: 2
    Name: chap_target2
    Secret: a1s2d3f4g5h6
Entry: 3
    Name: chap_target3
    Secret: z1x2c3v4b5n6
-------------------------------------------------------------------
```

Display Targets Using CHAP Entries Select this option to view targets that are configured for CHAP. For example:

```
--------------------------------------------------------------------
Targets configured for CHAP:
Target ID: 3 IP: 192.168.1.11 Port: 3260
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    Name: chap_target3
    Secret: z1x2c3v4b5n6
--------------------------------------------------------------------
```

Assign a CHAP Entry to a Target Select this option to assign a CHAP entry to a target device. For example:

```
Target ID: 3  hba_no: 1   IP: 192.168.1.11     Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.1.10     Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
    Alias:0607.a2
    State: Session Active
Enter a Target ID: 3
CHAP TABLE
Entry: 1
    Name: chap_target1
    Secret: q1w2e3r4t5y6
Entry: 2
    Name: chap_target2
    Secret: a1s2d3f4g5h6
Entry: 3
    Name: chap_target3
    Secret: z1x2c3v4b5n6
CHAP Entry Number (0 for no CHAP) : 3
Do you want to have bidi authentication? [y/n]: y
```

Add a CHAP entry Select this option to add a CHAP entry. For example:

```
CHAPName [] :chap_target1
CHAPSecret [] :q1w2e3r4t5y6
Set CHAP as Bidi entry [off] :
```

Add a Default BIDI CHAP Select this option to add a bidirectional secret to a CHAP entry. For example:

```
CHAPSecret [] :abcdefghijklmnop
```

Edit a CHAP entry Select this option to edit a CHAP entry.

Delete a CHAP entry Select this option to delete a CHAP entry. For example:

```
CHAP TABLE
Entry: 1
    Name: qlogic
    Secret: qle82xx55
Entry: 2
    Name: abcd
    Secret: 1234567890asdfghjk
    This is a BIDI Chap Entry
CHAP Entry Number : 2
```

Save changes and reset HBA Select this option to save changes and reset the adapter.

Refresh Select this option to refresh the adapter data.

Target Discovery Menu

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 10. Target Discovery Menu

Select the **Target Discovery Menu** option to open the Target Discovery Menu with options to display targets, add a send target, mark a send target for rediscovery, remove targets, log in to a target and make it persistent, duplicate targets, view and configure iSNS settings, save changes, and refresh the adapter data. For example:

```
    Target Discovery Menu

=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=========================================================
    1:  Display Send Targets
    2:  Display Discovered Targets
    3:  Add a Send Target
    4:  Mark Send Target for re-discovery
    5:  Remove a Send Target
    6:  Login and persist a discovered target
    7:  Duplicate a Persistent Target
    8:  Duplicate a Discovered Target
    9:  Remove Discovered Target
   10:  Display iSNS Settings
   11:  Configure iSNS
   12:  Save changes and reset HBA (if necessary)
   13:  Refresh
```

Display Send Targets Select this option to view the persistent send target list. For example:

```
-----------------------------------------------------------------

Persistent Send Target List
-----------------------------
1. hba_no: 1   IP: 192.168.30.85
-----------------------------------------------------------------
```

Display Discovered Targets Select this option to view discovered target devices. For example:

```
------------------------------------------------------------------
Persistent Target List
--------------------------------
1. Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260
     ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
     Alias: 0607.b2     ISID: 000e1e045242
     State: Session Active
2. Target ID: 4  hba_no: 1   IP: 192.168.1.10    Port: 3260
     ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.a2
     Alias: 0607.a2     ISID: 000e1e045242
     State: Session Active
------------------------------------------------------------------
```

Add a Send Target Select this option to add a send target. For example:

```
Do you want this new send target to be auto-login and persistent?y
IPv6 Target? [off]:
TGT_TargetIPAddress [0.0.0.0] :192.168.1.100
Does the send target require CHAP?y
CHAP TABLE
Entry: 1
    Name: chap_target1
    Secret: q1w2e3r4t5y6
Entry: 2
    Name: chap_target2
    Secret: a1s2d3f4g5h6
Entry: 3
    Name: chap_target3
    Secret: z1x2c3v4b5n6
CHAP Entry Number (0 for no CHAP) : 2
Do you want to have bidi authentication? [y/n]: y
```

Mark Send Target for re-discovery Select this option to mark a send target for rediscovery.

Remove a Send Target Select this option to remove a send target. For example:

```
Persistent Send Target List
-----------------------------
1. hba_no: 1   IP: 192.168.1.11
2. hba_no: 1   IP: 192.168.1.100
Enter the instance number or ALL:2
```

Login and persist a discovered target Select this option to log in and make a discovered target persistent. For example:

```
Enter the instance number or ALL:
```

Duplicate a Persistent Target Select this option to duplicate a persistent target.

Duplicate a Discovered Target Select this option to duplicate a discovered target. For example:

```
Enter the instance number or ALL:
```

Remove Discovered Target Select this option to remove a discovered target.

Display iSNS Settings Select this option to view iSNS settings. For example:

```
--------------------------------------------------------------------
iSNS                     : Disabled.
--------------------------------------------------------------------
Configure iSNS
Select this option to configure iSNS. For example:
Use iSNS[off]: on
Set IPv4 or IPv6 address:
1. IPv4 Address: 0.0.0.0
2. IPv6 Address: ::
Select 1 or 2 : 1
iSNS IPv4 Address [0.0.0.0]: 10.10.10.10
iSNS Port Number [3205]:
```

Save changes and reset HBA Select this option to save changes and reset the adapter.

Refresh Select this option to refresh the adapter data.

List LUN information

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 11. List LUN information

Select the **List LUN information** option to view LUN information for persistent and dynamic targets. For example:

```
Target ID: 3  hba_no: 1   IP: 192.168.1.11    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.1992-04.com.emc:cx.apm00103600607.b2
    Alias: 0607.b2
    State: Session Active
No dynamic targets to display.
```

Save Target/CHAP Changes

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 12. Save Target/CHAP Changes

Select the **Save Target/CHAP Changes** option to save target and CHAP changes.

Refresh

2. CNA iSCSI Configuration ▸ 4. Target Configuration ▸ <port selection> ▸ 13. Refresh

Select the **Refresh** option to refresh the adapter data.

Boot Devices Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **Boot Devices Configuration** option. Select a port from the port menu to open the BIOS/UEFI Settings menu with options to display BIOS/UEFI information, set the BIOS/UEFI mode, set primary and secondary boot target information, clear primary and secondary boot target information, set the alternative client ID, save changes, and reset the adapter. For example:

```
BIOS/UEFI Settings Menu

========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
========================================================
     1:  Display BIOS/UEFI Information
     2:  Set BIOS/UEFI Mode
     3:  Set Primary Boot Target Information
     4:  Set Secondary Boot Target Information
     5:  Clear Primary Boot Target Information
     6:  Clear Secondary Boot Target Information
     7:  Set Alternatve Client ID
     8:  Save changes
     9:  Save changes and reset HBA (if necessary)
```

Display BIOS/UEFI Information

2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 1. Display BIOS/UEFI Information

From the BIOS/UEFI Settings Menu, select the **Display BIOS/UEFI** Information option to view BIOS/UEFI information.

Set BIOS/UEFI Mode

2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 2. Set BIOS/UEFI Mode

From the BIOS/UEFI Settings Menu, select the **Set BIOS/UEFI Mode** option to set the BIOS/UEFI mode.

Set Primary Boot Target Information

2. CNA iSCSI Configuration ▶ 5. Boot Devices Configuration ▶ <port selection> ▶ 3. Set Primary Boot Target Information

From the BIOS/UEFI Settings Menu, select the **Set Primary Boot Target Information** option to set the primary boot target. For example:

```
Target ID: 2  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 2
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk0
    Alias:
    State: Session Active
Target ID: 3  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk1
    Alias:
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk2
    Alias:
    State: Session Active
Target ID: 6  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 6
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk4
    Alias:
    State: Session Active
Enter a Target ID:2
Enter a LUN Number[0,(default 0)]:
```

Set Secondary Boot Target Information

2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 4. Set Secondary Boot Target Information

From the BIOS/UEFI Settings Menu, select the **Set Secondary Boot Target Information** option to set the secondary boot target. For example:

```
Target ID: 2  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 2
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk0
    Alias:
    State: Session Active
Target ID: 3  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 3
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk1
    Alias:
    State: Session Active
Target ID: 4  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 4
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk2
    Alias:
    State: Session Active
Target ID: 6  hba_no: 1   IP: 192.168.30.85    Port: 3260 TGT Instance #: 6
    ISCSI Name: iqn.2010-03.com.apps4085:storage.disk4
    Alias:
    State: Session Active
Enter a Target ID:3
Enter a LUN Number[0,(default 0)]:
```

Clear Primary Boot Target Information

2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 5. Clear Primary Boot Target Information

From the BIOS/UEFI Settings Menu, select the **Clear Primary Boot Target Information** option to clear the primary boot target device.

Clear Secondary Boot Target Information

2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 6. Clear Secondary Boot Target Information

From the BIOS/UEFI Settings Menu, select the **Clear Secondary Boot Target Information** option to clear the secondary boot target device.

Set Alternative Client ID

2. CNA iSCSI Configuration ▸ 5. Boot Devices Configuration ▸ <port selection> ▸ 7. Set Alternative Client ID

From the BIOS/UEFI Settings Menu, select the **Set Alternative Client ID** option to set an alternative client ID.

Save changes

2. CNA iSCSI Configuration ▶ 5. Boot Devices Configuration ▶ <port selection> ▶ 8. Save changes

From the BIOS/UEFI Settings Menu, select the **Save changes** option to save changes.

Save changes and reset HBA (if necessary)

2. CNA iSCSI Configuration ▶ 5. Boot Devices Configuration ▶ <port selection> ▶ 9. Save changes and reset HBA

From the BIOS/UEFI Settings Menu, select the **Save changes and reset HBA** option to save changes and reset the adapter.

Export (Save) Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 6. Export (Save) Configuration

From the Converged Network Adapter (CNA) iSCSI Configuration menu, select the **Export (Save) Configuration** option. From the port menu, select a port to open the Export (Save) Configuration menu with options to save the host configuration, import the adapter configuration, save changes, reset the adapter, and refresh the adapter information. For example:

```
Converged Network Adapter (CNA) iSCSI Configuration

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

  Export (Save) Configuration

=========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
CNA Model    : QLE8242
iSCSI Name   : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version   : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=========================================================
    1:  Save Host Configuration
    2:  Import HBA Configuration
    3:  Save changes and reset HBA (if necessary)
    4:  Refresh
```

Save Host Configuration

6. Export (Save) Configuration ▸ <port selection> ▸ 1. Save Host Configuration

From the Export (Save) Configuration menu, select the **Save Host Configuration** option to save the host configuration. For example:

```
What is the filename you would like to save this Host to?
hostconfig
```

Import HBA Configuration

6. Export (Save) Configuration ▸ <port selection> ▸ 2. Import HBA Configuration

From the Export (Save) Configuration menu, select the **Import HBA Configuration** option to import a host configuration. For example:

```
What is the filename you would like to get the HBA configuration
from? hostconfig
```

Save changes and reset HBA (if necessary)

6. Export (Save) Configuration ▸ <port selection> ▸ 3. Save changes and reset HBA

From the Export (Save) Configuration menu, select the **Save changes and reset HBA** option to save changes and reset the adapter.

Refresh

6. Export (Save) Configuration ▸ <port selection> ▸ 4. Refresh

From the Export (Save) Configuration menu, select the **Refresh** option to refresh the adapter data.

CNA NIC Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration

From the Converged Network Adapter (CNA) Protocol Type Selection menu, select the **CNA NIC Configuration** option to open the Converged Network Adapter (CNA) NIC Configuration menu with options to configure adapter aliases, port settings, VLANs, and teams. An option to export a configuration is also available. For example:

```
Converged Network Adapter (CNA) NIC Configuration

1:  Adapter Alias
2:  NIC Port Setting Configuration
3:  VLAN Configuration
4:  Team Configuration
5:  Export (Save) Configuration
```

Adapter Alias

2. Adapter Configuration ▸ **1. CNA Configuration** ▸ **3. CNA NIC Configuration** ▸ **1. Adapter Alias**

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **Adapter Alias** option. From the port menu, select a port for which to define an adapter alias. For example:

```
Converged Network Adapter (CNA) NIC Configuration

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2
CNA_Alias [None]: Port 2
Successfully saved CNA Alias
```

NIC Port Setting Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **NIC Port Setting Configuration** option. Select a port from the port menu to open the Port Settings Menu with options to display configured port settings, configure port settings, change the port alias, change the MAC alias, and save port configuration. For example:

```
    Port Settings Menu

==========================================================
CNA           : 1 Port 1
SN            : AFE1028C03899
CNA Model     : QLE8242
CNA Desc.     : QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
MPI Fw Version: 4.07.31
Physical MAC  : 00-0E-1E-04-95-E8
LAA MAC       : 00-0E-1E-04-95-E8
IPv4 Address  : 192.168.10.55
IPv6 Address  : fe80::8177:b777:e679:daf0
Link          : Up
==========================================================
    1:   Display Configured Port Settings
    2:   Configure Port Settings
    3:   Change Port Alias Name
    4:   Change MAC Alias Name
    5:   Save Port Configuration
```

Display Configured Port Settings

3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 1. Display Configured Port Settings

Select the **Display Configured Port Settings** option to view configured port settings. For example:

```
IPv4_Checksum_Offload_Enable          : RxTx
IPv4_TCP_Checksum_Offload_Enable      : RxTx
IPv6_TCP_Checksum_Offload_Enable      : RxTx
IPv4_UDP_Checksum_Offload_Enable      : RxTx
IPv6_UDP_Checksum_Offload_Enable      : RxTx
IPv4_Large_Send_Offload_v1_Enable     : on
IPv4_Large_Send_Offload_v2_Enable     : on
IPv6_Large_Send_Offload_v2_Enable     : on
Receive_Side_Scaling_Enable           : on
Jumbo_Frames_MTU_9000_Enable          : off
LOCAL_Administered_Address_MAC         : 00:0e:1e:04:95:ec
Port_Alias                            : None
Port_Wake_On_LAN_Option               : Disabled
Port_PXE_Enable                       : off
Chimney_Mode                          : CPU
Large_Receive_Offload                 : on
Priority_Tagging                      : Rx Tx Enabled
Flow_Control                          : Rx Tx Enabled
Vlan_Tagging                          : on
Receive_Side_Scaling_Ring             : 2
Health_Monitoring                     : on
Max_Jumbo_Buffers                     : 4096
Receive_Buffer_Count                  : 16384
Transmit_Buffer_Count                 : 1024
TCP_Connection_Offload_IPv4           : off
Completion_Queue_Size                 : 16384
Interrupt_Moderation                  : off
VLAN_ID                               : 0
```

Configure Port Settings

3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 2. Configure Port Settings

Select the **Configure Port Settings** option to configure port settings. For example:

```
IPv4_Checksum_Offload_Enable (off, Rx, Tx, RxTx)[RxTx]:
IPv4_TCP_Checksum_Offload_Enable (off, Rx, Tx, RxTx)[RxTx]:
IPv6_TCP_Checksum_Offload_Enable (off, Rx, Tx, RxTx)[RxTx]:
IPv4_UDP_Checksum_Offload_Enable (off, Rx, Tx, RxTx)[RxTx]:
IPv6_UDP_Checksum_Offload_Enable [RxTx]:
IPv4_Large_Send_Offload_v1_Enable (on, off)[on]:
IPv4_Large_Send_Offload_v2_Enable (on, off)[on]:
IPv6_Large_Send_Offload_v2_Enable (on, off)[on]:
Receive_Side_Scaling_Enable (on, off)[on]:
Jumbo_Frames_MTU_9000_Enable (on, off)[off]:
LOCAL_Administered_Address_MAC [00:0e:1e:04:95:ec]:
WOL available options:
 0 = Disabled,
 1 = Wake on Magic Frame,
Port_Wake_On_LAN_Option [Disabled]:
Port_PXE_Enable (on, off)[off]:
VLAN_ID (1..4094) [0]:
Large_Receive_Offload (on, off)[on]:
Priority_Tagging (off, Rx, Tx, RxTx)[Rx Tx Enabled]:
Flow_Control (off, Rx, Tx, RxTx)[Rx Tx Enabled]:
Vlan_Tagging (on, off)[on]:
Receive_Side_Scaling_Ring (1 .. 4)[2]:
Health_Monitoring (on, off)[on]:
Max_Jumbo_Buffers (1024, 2048, 4096, 8192)[4096]:
Receive_Buffer_Size (1024, 2048, 4096, 8192, 16384, 32768)[16384]:
Transmit_Buffer_Size (1024, 2048, 4096)[1024]:
Completion_Queue_Size (1024, 2048, 4096, 8192, 16384,
32768)[16384]:
Interrupt_Moderation (on, off)[off]:
```

Change Port Alias Name

3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 3. Change Port Alias Name

Select the **Change Port Alias Name** option to change the port alias. For example:

```
Port_Alias [None]: Alias2
Successfully saved Port Alias
```

Change MAC Alias Name

3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 4. Change MAC Alias Name

Select the **Change MAC Alias Name** option to change the port MAC alias. For example:

```
Physical MAC Address       : 00:0e:1e:04:95:ec
Enter Port_Physical_MAC_Alias [None]: alias_mac
Successfully saved MAC Alias
Active/LAA MAC Address      : 00:0e:1e:04:95:ec
Enter Port_LAA_MAC_Alias [None]: alias_laa
Successfully saved MAC Alias
```

Save Port Configuration

3. CNA NIC Configuration ▸ 2. NIC Port Setting Configuration ▸ <port selection> ▸ 5. Save Port Configuration

Select the **Save Port Configuration** option to save the port configuration. For example:

```
Only save parameters that were modified? (yes, no) [yes]: y
About to save configured values ... Please wait ...
```

VLAN Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 3. VLAN Configuration

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **VLAN Configuration** option to open the Configure VLAN Menu with options to view the list of VLANs, view VLAN information, add a VLAN to a port or team, configure VLAN parameters, remove a VLAN from a port or team, and refresh adapter data. For example:

```
Configure VLANs Menu

1:  Display VLAN List
2:  Display VLAN Information
3:  Add VLAN to Port or Team
4:  Configure VLAN Parameters
5:  Remove VLAN from Port or Team
6:  Refresh
```

Display VLAN List

3. CNA NIC Configuration ▶ 3. VLAN Configuration ▶ 1. Display VLAN List

From the Configure VLANs Menu, select the **Display VLAN List** option to view the VLAN list. For example:

```
VLAN List:
CNA:  1 CNA Port:  2  VLAN ID:   300 MAC: 00:0e:1e:04:95:ec
Description: [NETSCLI-VLAN-300][VLan Team]:QLogic Teaming Virtual
Adapter #2

CNA:  1 CNA Port:  2  VLAN ID: 0(untag) MAC: 00:0e:1e:04:95:ec
Description: [Default Vlan][VLan Team]:QLogic Teaming Virtual
Adapter
```

Display VLAN Information

3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 2. Display VLAN Information

From the Configure VLANs Menu, select the **Display VLAN Information** option to view the VLAN information. For example:

```
VLAN(s) Information:
Updating VLANs info ...
Done ...
Available VLAN ID(s):
300, 0
Select VLAN ID: (or ALL) : 0

***** VLAN: 0 ([Default Vlan][VLan Team]:QLogic Teaming Virtual Adapter) *****

Driver Name      : QLogic Teaming Virtual Adapter
Driver Version   : 4.2.15.1125
Driver Date      : 11-25-2010
VLAN Enabled     : Enabled
VLAN ID          : 0
MAC Address      : 00:0e:1e:04:95:ec
MTU              : 1514
IPv4 Address     : 169.254.96.35
Subnet Mask      :
IPv6 Address     : fe80::7813:c633:a75:6023
Link Status      : Down
Updating parameters ... Plese wait ...

Configurable Properties:
========================
IFP_Jumbo_Packet_Size            : 1514
IFP_LSO_IPv4_V1                  : Enabled
IFP_LSO_IPv4_V2                  : Enabled
IFP_LSO_IPv6_V2                  : Enabled
IFP_Checksum_Offload_IPv4        : RX and TX Enabled
IFP_UDP_Checksum_Offload_IPv4    : RX and TX Enabled
IFP_TCP_Checksum_Offload_IPv4    : RX and TX Enabled
IFP_UDP_Checksum_Offload_IPv6    : RX and TX Enabled
IFP_TCP_Checksum_Offload_IPv6    : RX and TX Enabled
IFP_Large_RECV_Offload           : Enabled
IFP_RSS                          : Enabled
User_Assigned_Name               :
```

Add VLAN to Port or Team

3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 3. Add VLAN to Port or Team

From the Configure VLANs Menu, select the **Add VLAN to Port or Team** option to add a VLAN. For example:

```
VLAN List:
ListIndex:  1 CNA:  1 CNA Port:  2  VLAN ID:  None MAC: 00:0e:1e:04:95:ec
Description: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter #2
ListIndex:  2 CNA:  1 CNA Port:  1  VLAN ID:  None MAC: 00:0e:1e:04:95:e8
Description: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter

Select one or more ListIndices from the list (1,2): 1
Enter one or more VLAN ID(s) (1..4094) : 300
About to set VLAN ID(s): for ListIndex: 1
Successfully set VLAN ID(s).
Refreshing CNA data ...

Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Reset to 1. CNA (Physical MAC=00:0e:1e:04:95:ec)
Done.
```

Configure VLAN Parameters

3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 4. Configure VLAN Parameters

From the Configure VLANs Menu, select the **Configure VLAN Parameters** option to configure VLAN parameters. For example:

```
VLAN(s) Information:
Updating VLANs info ...
Done ...
Available VLAN ID(s):
300, 0
Select VLAN ID : 0
Updating parameters ... Plese wait ...
IFP_Jumbo_Packet_Size (590 .. 9614)[1514]:
IFP_LSO_IPv4_V1 (0-Disabled 1-Enabled )[Enabled]:
IFP_LSO_IPv4_V2 (0-Disabled 1-Enabled )[Enabled]:
IFP_LSO_IPv6_V2 (0-Disabled 1-Enabled )[Enabled]:
IFP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and TX
Enabled )[RX and TX Enabled]:
IFP_UDP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_TCP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_TCP_Checksum_Offload_IPv6 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_UDP_Checksum_Offload_IPv6 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_Large_RECV_Offload (0-Disabled 1-Enabled )[Enabled]:
IFP_RSS (0-Disabled 1-Enabled )[Enabled]:
User_Assigned_Name []:

Save configured values? (yes, no) [yes]:
```

Remove VLAN from Port or Team

3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 5. Remove VLAN from Port or Team

From the Configure VLANs Menu, select the **Remove VLAN from Port or Team** option to remove a VLAN. For example:

```
VLAN List:
ListIndex: 1 CNA: 1 CNA Port:  2  VLAN ID: 300,0(untag) MAC:
00:0e:1e:04:95:ec Description: QLogic Dual Port
10 Gigabit Ethernet CNA, PCIe 2.0 Adapter #2

Select ListIndex from the list (1 or ALL):
```

Refresh

3. CNA NIC Configuration ▸ 3. VLAN Configuration ▸ 6. Refresh

From the Configure VLANs Menu, select the **Refresh** option to refresh the adapter information. For example:

```
Refreshing CNA data ...

Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Reset to 1. CNA (Physical MAC=00:0e:1e:04:95:ec)
Done.
```

Team Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 4. Team Configuration

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **Team Configuration** option to open the Configure Teams Menu with options to view the teams list, view team information, configure a new team, configure team parameters, delete a team, add members to a team, delete members, set and unset the primary team member, save the VLAN and teaming configuration, restore the VLAN and teaming configuration, and refresh the adapter data. For example:

```
Configure Teams Menu

 1:  Display Teams List
 2:  Display Team Information
 3:  Configure New Team
 4:  Configure Team Parameters
 5:  Delete Team
 6:  Add Member(s) to Team
 7:  Delete Member(s) from Team
 8:  Set Primary Team Member
 9:  Unset Primary Team Member
10:  Save VLAN & Teaming Configuration
11:  Restore VLAN & Teaming Configuration
12:  Refresh
```

Display Teams List

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 1. Display Teams List

From the Configure Teams Menu, select the **Display Teams List** option to view the teams list. For example:

```
Team:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3 VLAN ID: None Team Type: FailOver
```

```
Team Members:
```

```
CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Adapter"
```

Display Team Information

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 2. Display Team Information

From the Configure Teams Menu, select the **Display Team Information** option to view team information. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtu

Select Team Index (or ALL) : 1

***** Team: [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3 *****

Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3
Team Type        : Fail Over
Driver Name      : QLogic Teaming Virtual Adapter
Driver Version   : 4.2.15.1125
Driver Date      : 11-25-2010
VLAN Enabled     : Disabled
VLAN ID          : None
MAC Address      : 00:0e:1e:04:95:e8
MTU              : 1514
IPv4 Address     : 169.254.247.129
Subnet Mask      : 255.255.0.0
IPv6 Address     : fe80::a8af:6f72:3a1e:f781
Link Status      : Up
Primary Member   : QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
Updating parameters ... Plese wait ...

Configurable Properties:
========================
IFP_Jumbo_Packet_Size             : 1514
IFP_LSO_IPv4_V1                   : Enabled
IFP_LSO_IPv4_V2                   : Enabled
IFP_LSO_IPv6_V2                   : Enabled
IFP_Checksum_Offload_IPv4         : RX and TX Enabled
IFP_UDP_Checksum_Offload_IPv4     : RX and TX Enabled
IFP_TCP_Checksum_Offload_IPv4     : RX and TX Enabled
IFP_UDP_Checksum_Offload_IPv6     : RX and TX Enabled
IFP_TCP_Checksum_Offload_IPv6     : RX and TX Enabled
IFP_Large_RECV_Offload            : Enabled
IFP_RSS                           : Enabled
User_Assigned_Name                : Team 2
VT_MODE                           : Fail Over
Failback_Mode                     : Best available
Failback_Delay                    : 3
```

Configure New Team

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 3. Configure New Team

From the Configure Teams Menu, select the **Configure New Team** option to configure a new team. For example:

```
Available Team Types:
    1=Failsafe Team
    2=Switch Independent Load Balancing
    3=802.3ad Static Team
    4=802.3ad Dynamic Team - Active  LACP
    5=802.3ad Dynamic Team - Passive LACP

Select Team Type [1]: 1
 2. CNA: 1 CNA Port: 1 CNA Model: QLE8242
    Mac Phys. Address: 00:0e:1e:04:95:e8 Loc. Mac: 00:0e:1e:04:95:e8
    Description: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
    User assigned name:
    CNA Serial Number: AFE1028C03899 Active FW Ver. : 4.07.31 Adapter Alias:
Port 2
    Port Alias: None
    Link Status: Up
    CNA Port: yes
    IPv4   Address: 192.168.10.55
    IPv6 Addresses: fe80::8177:b777:e679:daf0
Select one or more CNA Port Indices (2 or ALL) : 2
Do you want ot set primary? (yes, no) [yes]:
Member selected as Primary: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0
Adapter
Add Non-QLogic Ports as members? (yes, no) [no]:
Updating parameters ... Plese wait ...
User_Assigned_Name []: Team 2
Configure Team Parameters? (yes, no) [no]:

Attempting to create a new team:

Team Description:
Team Type: Fail Over
Selected ports : 2

CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Adapter"
              QLogic D
About to create the team. Please wait ...
Successfully created new team.
Refreshing CNA data ...

Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Reset to 1. CNA (Physical MAC=00:0e:1e:04:95:ec)
Done.
```

Configure Team Parameters

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 4. Configure Team Parameters

From the Configure Teams Menu, select the **Configure Team Parameters** option to configure team parameters. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index : 1
Updating parameters ... Plese wait ...
VT_MODE 1=Fail Over; 2=Load Balanced; 3=Static; 4=Dynamic Team-Active;
5=Dynamic Team-Passive[Fail Over]:
IFP_Jumbo_Packet_Size (590 .. 9614)[1514]:
IFP_LSO_IPv4_V1 (0-Disabled 1-Enabled )[Enabled]:
IFP_LSO_IPv4_V2 (0-Disabled 1-Enabled )[Enabled]:
IFP_LSO_IPv6_V2 (0-Disabled 1-Enabled )[Enabled]:
IFP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and TX
Enabled )[RX and TX Enabled]:
IFP_UDP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_TCP_Checksum_Offload_IPv4 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_TCP_Checksum_Offload_IPv6 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_UDP_Checksum_Offload_IPv6 (0-Disabled 1-TX Enabled 2-RX Enabled 3-RX and
TX Enabled )[RX and TX Enabled]:
IFP_Large_RECV_Offload (0-Disabled 1-Enabled )[Enabled]:
IFP_RSS (0-Disabled 1-Enabled )[Enabled]:
User_Assigned_Name [Team 2]:
Failback_Mode 1=No failover; 2=Failover to preffered port; 3=Best available
[Best available]:
Failback_Delay (in milliseconds)[3]:

Save configured values? (yes, no) [yes]:
Saving modified extended values ... Please wait ... About to save team config.
Please wait ...
Successfully saved extended parameters.
Successfully saved parameters.
```

Delete Team

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 5. Delete Team

From the Configure Teams Menu, select the **Delete Team** option to delete a team. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index (or ALL) : 1
About to delete Team 1 Team Description: [Default Vlan][Team 2]:QLogic Teaming
Virtual Adapter #3. Please wait
...
Successfully deleted Team: 1, Team Description: [Default Vlan][Team 2]:QLogic
Teaming Virtual Adapter #3.
Refreshing CNA data ...

Loading: 1. CNA ...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ...
Reset to 1. CNA (Physical MAC=00:0e:1e:04:95:ec)
Done.
```

Add Member(s) to Team

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 6. Add Member(s) to Team

From the Configure Teams Menu, select the **Add Member(s) to Team** option to add members to a team. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index : 1
Consider Non-QLogic Ports as members? (yes, no) [no]: y
Non-QLogic Ports:
----------------
 1. Description: Broadcom NetXtreme Gigabit Ethernet #2
    Mac: 00:23:7d:5f:30:2e
    Link Status: Up
 2. Description: Broadcom NetXtreme Gigabit Ethernet
    Mac: 00:23:7d:5f:30:2f
    Link Status: Down
Select additional Port Indices (1,2 or ALL) : all
```

Delete Member(s) from Team

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 7. Delete Member(s) from Team

From the Configure Teams Menu, select the **Delete Member(s) from Team** option to delete members from a team. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index : 1
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Ada
pter"
Non-QLogic Port    MAC: 00:23:7d:5f:30:2f Description: "Broadcom NetXtreme
Gigabit Ethernet"

Team Members:
 1. Description: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
    Mac: 00:0e:1e:04:95:e8
    Link Status: Down
 2. Description: Broadcom NetXtreme Gigabit Ethernet
    Mac: 00:23:7d:5f:30:2f
    Link Status: Down
Select Port Indices to be removed from the team (1,2) :
```

Set Primary Team Member

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 8. Set Primary Team Member

From the Configure Teams Menu, select the **Set Primary Team Member** option to set the primary team member. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index : 1
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Ada
pter"

Current selection:
Team    : [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3
Primary : QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter

Team Members valiable for selection:
 2. Description: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter
Member selected as Primary: QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0
Adapter
Saving team: [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3
About to save team config. Please wait ...
Successfully saved extended parameters.
```

Unset Primary Team Member

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 9. Unset Primary Team Member

From the Configure Teams Menu, select the **Unset Primary Team Member** option to unset the primary team member. For example:

```
Team Index:  1 Team Description: [Default Vlan][Team 2]:QLogic Teaming Virtual
Adapter #3

Select Team Index : 1
Team Members:
CNA: 1 CNA Port: 1  MAC: 00:0e:1e:04:95:e8 Description: "QLogic Dual Port 10
Gigabit Ethernet CNA, PCIe 2.0 Adapter"

Current selection:
Team    : [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3
Primary : QLogic Dual Port 10 Gigabit Ethernet CNA, PCIe 2.0 Adapter

Clear primary? (yes, no) [yes]: y
Saving team: [Default Vlan][Team 2]:QLogic Teaming Virtual Adapter #3
About to save team config. Please wait ...
Successfully saved extended parameters.
```

Save VLAN & Teaming Configuration

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 10. Save VLAN & Teaming Configuration

From the Configure Teams Menu, select the **Save VLAN & Teaming Configuration** option to save the VLAN and teaming configuration. For example:

```
      Please Enter Selection: 10
Enter file name (or ENTER for vtstate-user.xml) :
```

Restore VLAN & Teaming Configuration

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 11. Restore VLAN & Teaming Configuration

From the Configure Teams Menu, select the **Restore VLAN & Teaming Configuration** option to restore the VLAN and teaming configuration. For example:

```
Enter file name (or ENTER for vtstate-user.xml) :
Proceed to restore VLAN/Teaming? (yes, no) [yes]: y
Do you want to remove existing teams before restoring from the file? (yes, no)
[yes]:
About to remove teams(s).
*** No Teams available ***
Successfully removed team(s) or no teams(s) were present.
Refreshing interfaces ... Please wait ...
Updating IP properties for all ports ... Please wait ...
```

Refresh

3. CNA NIC Configuration ▸ 4. Team Configuration ▸ 12. Refresh

From the Configure Teams Menu, select the **Refresh** option to refresh the adapter data.

Export (Save) Configuration

2. Adapter Configuration ▸ 1. CNA Configuration ▸ 3. CNA NIC Configuration ▸ 5. Export (Save) Configuration

From the Converged Network Adapter (CNA) NIC Configuration menu, select the **Export (Save) Configuration** option to open the Save/Restore VLAN/Teams Menu with options to save and restore the VLAN and teaming configuration. For example:

```
Save/Restore VLAN/Teams Menu

1:  Save VLAN & Teaming Configuration
2:  Restore VLAN & Teaming Configuration
```

Save VLAN & Teaming Configuration

3. CNA NIC Configuration ▸ 5. Export (Save) Configuration ▸ 1. Save VLAN & Teaming Configuration

From the Save/Restore VLAN/Teams Menu, select the **Save VLAN & Teaming Configuration** option to save the VLAN and teaming configuration. For example:

```
Enter file name (or ENTER for vtstate-user.cfg) :
Attempting to save TEAMs and VLANs Configuration.
Successfully saved TEAMs/VLANs
```

Restore VLAN & Teaming Configuration

3. CNA NIC Configuration ▸ 5. Export (Save) Configuration ▸ 2. Restore VLAN & Teaming Configuration

From the Save/Restore VLAN/Teams Menu, select the **Restore VLAN & Teaming Configuration** option to restore the VLAN and teaming configuration. For example:

```
Enter file name (or ENTER for vtstate-user.cfg) :
Accessing file: C:\Program Files\QLogic
Corporation\QConvergeConsoleCLI\vtstate-user.cfg

Number of Teams: 0
----------------

Number of Ports: 0
----------------

Number of VLANS: 0
----------------

Proceed to restore VLAN/Teaming? (yes, no) [yes]: y
Attempting to restore TEAMs and VLANs if configured prior to
vtdriver update.
Refreshing interfaces ... Please wait ...
Updating IP properties for all ports ... Please wait ...
```

Adapter Updates

3. Adapter Updates ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Update** option, and then select the adapter type (**1: Converged Network Adapter**). The CNA Adapter Update menu presents options updating Flash memory, updating parameters, and updating drivers. For example:

```
Adapter Type Selection

1:   Converged Network Adapter
2:   Fibre Channel Adapter

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 1

CNA Adapter Update

1:   Flash Update
2:   Parameters Update
3:   Drivers Update
```

Flash Update

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 1. Flash Update

From the CNA Adapter Update menu, select the **Flash Update** option to update flash memory. From the adapter menu, select the adapter for which to update flash memory, and then type the name of the file that contains the Flash image. For example:

```
Flash Update

 1: CNA Model: QLE8242 SN: AFE1028C03899
        Port  2 [Protocol(s): NIC FCoE iSCSI]
        Port  1 [Protocol(s): NIC FCoE iSCSI]

      (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
      Please Enter Selection: 1
Enter file name containing image:image_filename
```

Parameters Update

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 2. Parameters Update

From the CNA Adapter Update menu, select the **Parameters Update** option to update adapter parameters. From the port menu, select a port for which to update parameters, and then type a file name. For example:

```
Parameters Update

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2
Enter a file name or Hit <RETURN> to abort: parameter_filename
```

Drivers Update

3. Adapter Updates ▸ 1. Converged Network Adapter ▸ 3. Drivers Update

From the CNA Adapter Update menu, select the **Drivers Update** option to update drivers. From the port menu, select a port for which to update drivers, and then type a file name. For example:

```
Drivers Update

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2
Enter a file name or Hit <RETURN> to abort:driver_file
```

Adapter Diagnostics

4. Adapter Diagnostics ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Diagnostics** option, and then select the adapter model (**CNA Model**). The Converged Network Adapter (CNA) Diagnostics menu presents options to test registers, test hardware, test Flash memory, test interrupts, test links, test ports, test read-write buffers, test LEDs, run the transceiver diagnostics monitoring interface (DMI), perform iSCSI adapter and port diagnostics, and view the iSCSI port logs. For example:

```
CNA Adapter Information

1: CNA Model: QLE8242 SN: AFE1028C03899
       Port  2 [Protocol(s): NIC FCoE iSCSI]
       Port  1 [Protocol(s): NIC FCoE iSCSI]

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter (CNA) Diagnostics

  1:  Register Test
  2:  Hardware Test
  3:  Flash Test
  4:  Interrupt Test
  5:  Link Test
  6:  Loopback Test
  7:  Read Write Buffer Test
  8:  Beacon/LED Test
  9:  Transceiver Diagnostics Monitoring Interface (DMI)
 10:  iSCSI Adapter Diagnostics
 11:  iSCSI Port Diagnostics
 12:  iSCSI Port Logs
```

Register Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 1. CNA Model ▸ 1. Register Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Register Test** option. From the port menu, select a port to test the register. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2
Register Test Starts ...

Test Status:              Passed  (Passed=1, Failed=0, ErrorCode=0)
Register Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Hardware Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 1. CNA Model ▸ 2. Hardware Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Hardware Test** option. From the port menu, select a port to test the hardware. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
      Please Enter Selection: 2
Hardware Test Starts ...

Test Status:                        Passed  (Passed=1, Failed=0, ErrorCode=0)
Hardware Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Flash Test

4. Adapter Diagnostics ▶ 1. Converged Network Adapter ▶ 1. CNA Model ▶ 3. Flash Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Flash Test** option. From the port menu, select a port to test the Flash memory. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
      Please Enter Selection: 2
Flash Test Starts ...
Flash Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Interrupt Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 1. CNA Model ▸ 4. Interrupt Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Interrupt Test** option. From the port menu, select a port to test the interrupts. For example:

```
 Converged Network Adapter (CNA) Diagnostics

  CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2
Interrupt Test Starts ...

Test Status:                       Passed  (Passed=1, Failed=0, ErrorCode=0)
Interrupt Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Link Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 1. CNA Model ▸ 5. Link Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Link Test** option. From the port menu, select a port to test the links. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2
Link Test Starts ...

Test Status:                      Failed  (Passed=0, Failed=1, ErrorCode=1)
Link Test Results:
  Status=Failed
  Passed=0,  Failed=1, ErrorCode=1
```

Loopback Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 1. CNA Model ▸ 6. Loopback Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Loopback Test** option. From the port menu, select a port to open the Loopback Test menu with options to test NIC, FCoE, and iSCSI functions. A loopback plug must be installed in the port. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2
Loopback Test

1:  NIC
2:  FCoE
3:  iSCSI
```

NIC

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 1. CNA Model ▸ 6. Loopback Test ▸ <port selection> ▸ 1. NIC

This option is currently not supported.

FCoE

4. Adapter Diagnostics ▶ 1. Converged Network Adapter ▶ 1. CNA Model ▶ 6. Loopback Test ▶ <port selection> ▶ 2. FCoE

From the Loopback Test menu, select the **FCoE** option to open a loopback test submenu with options to display test parameters, reset test parameters, configure test parameters, and start the test. For example:

```
Loopback Test

=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    :
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=========================================================
    1:  Display Test Parameters
    2:  Reset Test Parameters
    3:  Configure Test Parameters
    4:  Start Diagnostics Test
```

Display Test Parameters

6. Loopback Test ▸ <port selection> ▸ 2. FCoE ▸ 1. Display Test Parameters

From the Loopback Test menu, select the **Display Test Parameters** option to view the loopback test parameters. For example:

```
--------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
--------------------------------------------------------------------------

-------------------
Diagnostics Settings
-------------------
Data Pattern            : Random
Data Size (Bytes)       : 8
Number of tests (1-65535): 10000
Test Increment(1-65535) : 1
Abort On Error          : Ignore
Test Continuous         : OFF
Loopback Type           : Special Echo FCoE Loopback (252) in size
--------------------------------------------------------------------------
```

Reset Test Parameters

6. Loopback Test ▸ <port selection> ▸ 2. FCoE ▸ 2. Reset Test Parameters

From the Loopback Test menu, select the **Reset Test Parameters** option to reset the loopback test parameters to their default values. Table 10-1 lists the default loopback test values.

Table 10-1. Default Loopback Test Parameter Values

Parameter	Default Value
Data Pattern	Random
Data Size (Bytes)	8
Number of tests	10,000
Test Increment	1
Abort On Error	Ignore
Test Continuous	OFF
Loopback Type	Special Echo FCoE Loopback (252) in size

Configure Test Parameters

6. Loopback Test ▸ <port selection> ▸ 2. FCoE ▸ 3. Configure Test Parameters

From the Loopback Test menu, select the **Configure Test Parameters** option to open a loopback test submenu with options to configure the data patterns, data size, number of tests, test increments, error handling, and loopback type. For details about these parameters, refer to Table 5-6.

For example:

```
Loopback Test

========================================================
CNA           : 1 Port: 2
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EF
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    :
WWPN          : 21-00-00-0E-1E-04-95-EF
WWNN          : 20-00-00-0E-1E-04-95-EF
Link          : SFP not installed
========================================================
    1:   Data Patterns
    2:   Data Size
    3:   Number Of Test(s)
    4:   Test Increment(s)
    5:   Abort On Error
    6:   Loopback Type
```

Start Diagnostics Test

6. Loopback Test ▸ <port selection> ▸ 2. FCoE ▸ 4. Start Diagnostics Test

From the Loopback Test menu, select the **Start Diagnostics Test** option to start the loopback test.

iSCSI

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 1. CNA Model ▸ 6. Loopback Test ▸ <port selection> ▸ 3. iSCSI

This option is currently not supported.

Read Write Buffer Test

4. Adapter Diagnostics ▶ 1. Converged Network Adapter ▶ 7. Read Write Buffer Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Read Write Buffer Test** option. From the port menu, select a port to open the Read Write Buffer Test menu with options to test FCoE and iSCSI functions. For example:

```
 Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

Read Write Buffer Test

1:  FCoE
2:  iSCSI
```

FCoE

4. Adapter Diagnostics ▶ 1. Converged Network Adapter ▶ 7. Read Write Buffer Test ▶ <port selection> ▶ 1. FCoE

From the Read Write Buffer Test menu, select the **FCoE** option to open a Read Write Buffer Test submenu with options to display test parameters, reset test parameters, configure test parameters, and start the test. For example:

```
      Read Write Buffer Test

   1:  Display Test Parameters
   2:  Reset Test Parameters
   3:  Configure Test Parameters
   4:  Start Diagnostics Test
```

Display Test Parameters

7. Read Write Buffer Test ▸ <port selection> ▸ 1. FCoE ▸ 1. Display Test Parameters

From the Read Write Buffer Test menu, select the **Display Test Parameters** option to view the read write buffer test parameters. For example:

```
-------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------

--------------------
Diagnostics Settings
--------------------
Data Pattern            : Random
Data Size (Bytes)       : 8
Number of tests (1-10000): 10000
Test Increment(1-10000) : 1
Abort On Error          : Ignore
Test Continuous         : OFF
-----------------------------------------------------------------------
```

Reset Test Parameters

7. Read Write Buffer Test ▸ <port selection> ▸ 1. FCoE ▸ 2. Reset Test Parameters

From the Read Write Buffer Test menu, select the **Reset Test Parameters** option to reset the read write buffer test parameters to their default values. Table 10-2 lists the default read write buffer test values.

Table 10-2. Default Read Write Buffer Test Parameter Values

Parameter	Default Value
Data Pattern	Random
Data Size (Bytes)	8
Number of tests	10,000
Test Increment	1
Abort On Error	Ignore
Test Continuous	OFF

Configure Test Parameters

7. Read Write Buffer Test ▸ <port selection> ▸ 1. FCoE ▸ 3. Configure Test Parameters

From the Read Write Buffer Test menu, select the **Configure Test Parameters** option to open a read write buffer test submenu with options to configure the data patterns, data size, number of tests, test increments, error handling, and loopback type. For details about these parameters, refer to Table 5-6. For example:

```
   Loopback Test
========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model    : QLE8242
CNA Desc.    : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version   :
WWPN         : 21-00-00-0E-1E-04-95-EB
WWNN         : 20-00-00-0E-1E-04-95-EB
Link         : Online
========================================================
    1:   Data Patterns
    2:   Data Size
    3:   Number Of Test(s)
    4:   Test Increment(s)
    5:   Abort On Error
    6:   Enable/Disable Device(s)
```

Start Diagnostics Test

7. Read Write Buffer Test ▸ <port selection> ▸ 1. FCoE ▸ 4. Start Diagnostics Test

From the Read Write Buffer Test menu, select the **Start Diagnostics Test** option to start the read write buffer test.

iSCSI

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 7. Read Write Buffer Test ▸ <port selection> ▸ 2. iSCSI

This option is currently not supported.

Beacon/LED Test

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 8. Beacon/LED Test

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Beacon/LED Test** option. From the port menu, select a port to run the test. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
    1.  Port  2 [Protocol(s): NIC iSCSI FCoE]
        MAC Address: 00:0E:1E:04:95:EC
        WWPN: 21-00-00-0E-1E-04-95-EF
        Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2.  Port  1 [Protocol(s): NIC iSCSI FCoE]
        MAC Address: 00:0E:1E:04:95:E8
        WWPN: 21-00-00-0E-1E-04-95-EB
        Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
      Please Enter Selection: 2
LED Test Starts ...

Test Status:                      Passed  (Passed=1, Failed=0, ErrorCode=0)
LED Test Results:
  Status=Passed
  Passed=1,  Failed=0, ErrorCode=0
```

Transceiver Diagnostics Monitoring Interface (DMI)

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 9. Transceiver Diagnostics Monitoring Interface (DMI)

From the Converged Network Adapter (CNA) Diagnostics menu, select the **Transceiver Diagnostics Monitoring Interface (DMI)** option. From the port menu, select a port to open the Transceiver Diagnostics Monitoring Interface (DMI) menu with options to view general and detailed DMI diagnostic information. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

Transceiver Diagnostics Monitoring Interface (DMI)

1:  General
2:  Details
```

General

9. Transceiver Diagnostics Monitoring Interface (DMI) ▸ <port selection> ▸ 1. General

From the Transceiver Diagnostics Monitoring Interface (DMI) menu, select the **General** option to view general DMI diagnostic information. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
Media Information
-------------------------------------------------------------------------------
            Vendor: FINISAR CORP.
              Type: 10G Base-SR
       Part Number: FTLX8571D3BCL-QL
             Speed: 10 Gbits/Sec
          Revision: A
     Serial Number: AH208K5
QLogic SFP Installed: Yes
-------------------------------------------------------------------------------
               Temperature    Voltage     Tx Bias    Tx Power    Rx Power
                   (C)          (V)         (mA)        (mW)        (mW)

               --------------  -------     -------    --------    --------
        Value      36.45         3.36        8.31       0.6040      0.6625
       Status      Normal       Normal      Normal      Normal      Normal
   High Alarm      78.00         3.70       11.78       0.8318      1.0000
 High Warning      73.00         3.60       10.80       0.6607      0.7943
  Low Warning      -8.00         3.00        5.00       0.3162      0.0158
    Low Alarm     -13.00         2.90        4.00       0.2512      0.0100
```

Details

9. Transceiver Diagnostics Monitoring Interface (DMI) ▸ <port selection> ▸ 2. Details

From the Transceiver Diagnostics Monitoring Interface (DMI) menu, select the **Details** option to view detailed DMI diagnostic information. For example:

```
-------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 11-00-20
-------------------------------------------------------------------------------
Optical Transceiver Digital Diagnostic Data:

Address A0
            Identifier: SFP
        Ext. Identifier: GBIC/SFP defined by serial ID only
             Connector: LC
         Ethernet Speed: 10 Gbits/Sec
             Compliance: 0x00 0x00 0x00
        FC Link Length:
    FC Transmitter Tech:
FC Transmission Media:
              FC Speed:
              Encoding: Reserved
           BR, Nominal: 0x67
    Length (9um) - km: 0x00
         Length (9um): 0x00
        Length (50um): 0x08
      Length (62.5um): 0x03
      Length (Copper): 0x00
           Vendor name: FINISAR CORP.
            Vendor OUI: 0x00 0x90 0x65
             Vendor PN: FTLX8571D3BCL-QL
            Vendor Rev: A
           Wave Length: 0x0352
               CC_BASE: 0xb2
                  .
                  .
                  .
```

iSCSI Adapter Diagnostics

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 10. iSCSI Adapter Diagnostics

From the Converged Network Adapter (CNA) Diagnostics menu, select the **iSCSI Adapter Diagnostics** option. From the port menu, select a port to open the iSCSI Adapter Diagnostics menu with options to retrieve firmware flash and NVRAM records to a file. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2

   iSCSI Adapter Diagnostics

==========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
==========================================================
    1:  Retrieve FW Flash & NVRAM Record

        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 1
What is the filename you would like to save this Host NVRAM to? nvram100
File successfully created.
```

iSCSI Port Diagnostics

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 11. iSCSI Port Diagnostics

From the Converged Network Adapter (CNA) Diagnostics menu, select the **iSCSI Port Diagnostics** option. From the port menu, select a port to open the iSCSI Port Diagnostics menu with options to ping the target device and test the read write buffer. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2

   iSCSI Port Diagnostics

=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
CNA Model     : QLE8242
iSCSI Name    : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version    : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address  : 192.168.1.45
=========================================================
    1:  Ping Target
    2:  Perform Read/Write Buffer Test
```

Ping Target

11. iSCSI Port Diagnostics ▸ <port selection> ▸ 1. Ping Target

From the iSCSI Port Diagnostics menu, select **Ping Target** option to ping a target device. Specify the target IP address, the number of ping attempts, and the packet size. For example:

```
Enter an IP Address:192.168.1.11
Enter the number of PING attempts to make:3
Enter the packet size in bytes for the PING [32]:
Ping to 192.168.1.11 successful (1 of 3).
Ping to 192.168.1.11 successful (2 of 3).
Ping to 192.168.1.11 successful (3 of 3).
```

Perform Read/Write Buffer Test

11. iSCSI Port Diagnostics ▸ <port selection> ▸ 2. Perform Read/Write Buffer Test

From the iSCSI Port Diagnostics menu, select the **Perform Read/Write Buffer Test** option to test the read write buffer. Specify the number of tests, the data pattern, and the error handling. For example:

```
The Read/Write Buffer Diagnostics require that the adapter have
no outstanding I/O operations.  Please make sure there is no active
I/O before starting the diagnostic.
Do you wish to proceed? y
Number of Read/Write tests to perform: 5
(1) 8 byte pattern of 0x55 (0101 0101)
(2) 8 byte pattern of 0x5A (0101 1010)
(3) 16 byte pattern of 0xAA (1010 1010)
(4) 16 byte pattern of 0xFF (1111 1111)
Data Pattern to use: 1
Stop on error[Y]?y
```

iSCSI Port Logs

4. Adapter Diagnostics ▸ 1. Converged Network Adapter ▸ 12. iSCSI Port Logs

From the Converged Network Adapter (CNA) Diagnostics menu, select the **iSCSI Port Logs** option. From the port menu, select a port to open the iSCSI Port Logs menu with options to view the ARP table, view the connection error log, export the connection error log, view the neighbor cache, view the default router list, view the local prefix list, and refresh the adapter information. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2
  iSCSI Port Logs


=========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
CNA Model    : QLE8242
iSCSI Name   : iqn.2000-04.com.qlogic:isp8214.000E1E0495EA.4
FW Version   : 4.7.31
iSCSI MacAddr : 00:0E:1E:04:95:EA
IPv4 Address : 192.168.1.45
=========================================================
    1:  Display ARP Table
    2:  Display Connection Error Log
    3:  Export Connection Error Log
    4:  Display Neighbor Cache (IPv6)
    5:  Display Destination Cache (IPv6)
    6:  Display Default Router List (IPv6)
    7:  Display Local Prefix List (IPv6)
    8:  Refresh
```

Display ARP Table

12. iSCSI Port Logs ▸ \<port selection\> ▸ 1. Display ARP Table

From the iSCSI Port Logs menu, select the **Display ARP Table** option to view the ARP table. For example:

```
ARP Table Entry number 0
------------------------------
        IPAddress = 192.168.1.11
        MAC Address = 00-60-16-32-3E-7E
```

Display Connection Error Log

12. iSCSI Port Logs ▸ \<port selection\> ▸ 2. Display Connection Error Log

From the iSCSI Port Logs menu, select the **Display Connection Error Log** option to view the connection error log. For example:

```
inst 0 Number of entries = 0x2 (2)
=======================
inst 0 Entry Index: 0
=======================
Delta Time (in seconds)  : 0.000
Timestamp (or seconds)   : Thu Feb 03, 2011 04:36:48 AM
Target ID                : 2
Original State           : Connection free (0x21)
Entry Type               : Close cause (0x1)
Error Type               : Unable to connect to target. (0x4)
Detail Code              : Invalid remote IP address. (0xb)
Number Consecutive Errors: 1
=======================
inst 0 Entry Index: 1
=======================
Delta Time (in seconds)  : 0.582
Timestamp (or seconds)   : Thu Feb 03, 2011 04:36:48 AM
Target ID                : 3
Original State           : Connection free (0x21)
Entry Type               : Close cause (0x1)
Error Type               : Unable to connect to target. (0x4)
Detail Code              : Invalid remote IP address. (0xb)
Number Consecutive Errors: 1
inst 0 Number of displayed entries (for all target IDs) = 0x2 (2)
inst 0 Elapsed 1329701 second(s) since last entry (15 days 9 hours 21 minutes
41 seconds) as of Fri Feb 18, 2011 01:58:29 PM
```

Export Connection Error Log

12. iSCSI Port Logs ▶ <port selection> ▶ 3. Export Connection Error Log

From the iSCSI Port Logs menu, select the **Export Connection Error Log** option to export the connection error log to a file. For example:

```
Enter the filename to save the connection error log to:log100
inst 0 Number of entries = 0x2 (2)
inst 0 Number of displayed entries (for all target IDs) = 0x2 (2)
inst 0 Elapsed 1331172 second(s) since last entry (15 days 9 hours
46 minutes 12 seconds) as of Fri Feb 18, 2011 02:04:52 PM
```

Display Neighbor Cache (IPv6)

12. iSCSI Port Logs ▶ <port selection> ▶ 4. Display Neighbor Cache (IPv6)

From the iSCSI Port Logs menu, select the **Display Neighbor Cache (IPV6)** option to view neighbor cache information.

Display Destination Cache (IPv6)

12. iSCSI Port Logs ▶ <port selection> ▶ 5. Display Destination Cache (IPv6)

From the iSCSI Port Logs menu, select the **Display Destination Cache (IPV6)** option to view destination cache information.

Display Default Router List (IPv6)

12. iSCSI Port Logs ▶ <port selection> ▶ 6. Display Default Router List (IPv6)

From the iSCSI Port Logs menu, select the **Display Default Router List (IPV6)** option to view the router list.

Display Local Prefix List (IPv6)

12. iSCSI Port Logs ▶ <port selection> ▶ 7. Display Local Prefix List (IPv6)

From the iSCSI Port Logs menu, select the **Display Local Prefix List (IPV6)** option to view the router list.

Refresh

12. iSCSI Port Logs ▶ <port selection> ▶ 8. Refresh

From the iSCSI Port Logs menu, select the **Refresh** option to refresh (reload) the adapters and adapter port indexes.

Adapter Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter

From the main menu, select the **Adapter Statistics** option, and then select the adapter type (**Converged Network Adapter**) to open the Converged Network Adapter (CNA) Statistics menu with options for viewing NIC port statistics, FCoE port statistics, FCoE port link status, and iSCSI port statistics. Options are also available to reset NIC and iSCSI statistics. For example:

```
Adapter Type Selection

1:  Converged Network Adapter

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 1

Converged Network Adapter (CNA) Statistics

1:  Display NIC Port Statistics
2:  Reset NIC Statistics
3:  Undo Reset NIC Statistics
4:  Display FCoE Port Statistics
5:  Display FCoE Port Link Status
6:  Display iSCSI Port Statistics
7:  Reset iSCSI Statistics
```

Display NIC Port Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 1. Display NIC Port Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Display NIC Port Statistics** option. From the port menu, select a port for which to view Ethernet port statistics. For example:

```
CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2
Ethernet Port Statistics:

txPkts                  : 0
txOctets                : 0
txMulticastPkts         : 0
txBroadcastPkts         : 0
txUnicastPkts           : 0
txControlPkts           : 0
txPausePkts             : 0
txPkts64Octets          : 0
txPkts65to127Octets     : 0
txPkts128to255Octets    : 0
txPkts256to511Octets    : 0
txPkts512to1023Octets   : 0
txPkts1024to1518Octets  : 0
txPkts1519toMaxOctets   : 0
txUndersizePkts         : 0
txOversizePkts          : 0
rxOctets                : 0
rxPkts                  : 0
rxBroadcastPkts         : 0
.
.
.
```

Reset NIC Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 2. Reset NIC Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Reset NIC Statistics** option. From the port menu, select a port for which to reset the Ethernet port statistics counters to zero. For example:

```
CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2
Ethernet Statistics for the current port are reset
```

Undo Reset NIC Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 3. Undo Reset NIC Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Undo Reset NIC Statistics** option. From the port menu, select a port for which to restore the Ethernet port statistics counters to their previous values. For example:

```
CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2
Statistics for the current port are reset - UNDONE
```

Display FCoE Port Statistics

5. Adapter Statistics ▶ 1. Converged Network Adapter ▶ 4. Display FCoE Port Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Display FCoE Port Statistics** option. From the port menu, select a port to open the HBA Statistics Menu with options to view adapter status logging parameters, to reset logging parameters, to configure status logging parameters, and to view status information. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
    1. Port  2 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:EC
       WWPN: 21-00-00-0E-1E-04-95-EF
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
    2. Port  1 [Protocol(s): NIC iSCSI FCoE]
       MAC Address: 00:0E:1E:04:95:E8
       WWPN: 21-00-00-0E-1E-04-95-EB
       Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

     (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
     Please Enter Selection: 2

   HBA Statistics Menu

=========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    :
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
=========================================================
    1:  Display Test Parameters
    2:  Reset Test Parameters
    3:  Configure Test Parameters
    4:  Display HBA Statistics
```

Display Test Parameters (-gs)

4. Display FCoE Port Statistics ▸ <port selection> ▸ 1. Display Test Parameters

From the HBA Statistics menu, select the **Display Test Parameters** option to view status logging parameters. For example:

```
---------------------------------------
HBA Port Statistics Settings
---------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): N/A
```

Reset Test Parameters

4. Display FCoE Port Statistics ▸ <port selection> ▸ 2. Reset Test Parameters

From the HBA Statistics menu, select the **Reset Test Parameters** option to reset the status logging parameters to their default values.

Configure Test Parameters (-gs)

4. Display FCoE Port Statistics ▸ <port selection> ▸ 3. Configure Test Parameters

From the HBA Statistics menu, select the **Configure Test Parameters** option to open the Configure Test Parameters Menu with options to specify the polling method, the polling rate, and the name of the log file. For details about these parameters, see Table 5-5. For example:

```
    Configure Test Parameters Menu

=========================================================
CNA         : 0 Port: 1
SN          : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model   : QLE8242
CNA Desc.   : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version  :
WWPN        : 21-00-00-0E-1E-04-95-EB
WWNN        : 20-00-00-0E-1E-04-95-EB
Link        : Online
=========================================================
    1:  Auto Poll
    2:  Set Rate
    3:  Set Log File
```

Display HBA Statistics (-gs)

4. Display FCoE Port Statistics ▸ **<port selection>** ▸ **4. Display HBA Statistics**

From the HBA Statistics menu, select the **Display HBA Statistics** option to view FCoE port statistics and save it to the log file. For example:

```
--------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 00-00-00
--------------------------------------------------------------------------
HBA Port Statistics
------------------------------------------
General keyboard shortcuts:
     R     - Reset all counters
     ENTER - Cancel the current task
------------------------------------------
HBA Port Errors Device Errors Reset I/O Count  IOPS  BPS        Time
--- ----------- ------------- ----- ---------- ----- ---------- -----------
  1         0             0     0          0     0          0 08:13:04 AM
  0         0             0     0          0     0          0 10:34:53 AM
```

Display FCoE Port Link Status

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 5. Display FCoE Port Link Status

From the Converged Network Adapter (CNA) Statistics menu, select the **Display FCoE Port Link Status** option. From the port menu, select a port to open the Link Statistics Menu with options to view link logging parameters, reset link logging parameters, configure link logging parameters, and to view link statistics. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03899
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:EC
      WWPN: 21-00-00-0E-1E-04-95-EF
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 SFP not installed
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:95:E8
      WWPN: 21-00-00-0E-1E-04-95-EB
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214.0 Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2

  Link Statistics Menu

=========================================================
CNA          : 0 Port: 1
SN           : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model    : QLE8242
CNA Desc.    : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version   :
WWPN         : 21-00-00-0E-1E-04-95-EB
WWNN         : 20-00-00-0E-1E-04-95-EB
Link         : Online
=========================================================
   1:  Display Test Parameters
   2:  Reset Test Parameters
   3:  Configure Test Parameters
   4:  Display Link Statistics
```

Display Test Parameters

5. Display FCoE Port Link Status ▸ <port selection> ▸ 1. Display Test Parameters

From the Link Statistics Menu, select the **Display Test Parameters** option to view link status logging parameters. For example:

```
----------------------------------------
Link Status Settings
----------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): N/A
```

Reset Test Parameters

5. Display FCoE Port Link Status ▸ <port selection> ▸ 2. Reset Test Parameters

From the Link Statistics Menu, select the **Reset Test Parameters** option to reset the link status logging parameters to their default values.

Configure Test Parameters (-ls)

5. Display FCoE Port Link Status ▸ <port selection> ▸ 3. Configure Test Parameters

From the Link Statistics Menu, select the **Configure Test Parameters** option to open the Link Statistics submenu with options to specify the polling method, the polling rate, and the name of the log file. For details about these parameters, see Table 5-8. For example:

```
    Configure Test Parameters Menu

==========================================================
CNA           : 0 Port: 1
SN            : AFE1028C03899
ENode MacAddr : 00:0E:1E:04:95:EB
CNA Model     : QLE8242
CNA Desc.     : QLE8242 QLogic Pci Express to 10GbE Dual Channel CNA (FCoE)
FW Version    :
WWPN          : 21-00-00-0E-1E-04-95-EB
WWNN          : 20-00-00-0E-1E-04-95-EB
Link          : Online
==========================================================
    1:  Auto Poll
    2:  Set Rate
    3:  Set Log File
```

Display Link Statistics (-ls)

5. Display FCoE Port Link Status ▸ <port selection> ▸ 4. Display Link Statistics

From the Link Statistics Menu, select the **Display Link Statistics** option to view link status information and save it to the log file.

```
----------------------------------------
Link Status Settings
----------------------------------------
AutoPoll (AP): 10
SetRate (SR): 5
LogToFile (LF): N/A
------------------------------------------------------------------------------
HBA Instance 0: QLE8242 Port 1 WWPN 21-00-00-0E-1E-04-95-EB PortID 00-00-00
------------------------------------------------------------------------------
Link Status
--------------------------------------------
General keyboard shortcuts:
     R     - Reset current
     C     - Refresh current
     T     - Refresh total
     ENTER - Cancel the current task
--------------------------------------------
Port Name                          Link         VirtLink  Symbol       Frame
                                   Failure      Failure   Error        Check
------------------------------  -----------  ---------  -----------  -----------
Port(21-00-00-0E-1E-04-95-EB)        0            0          0            0
```

Display iSCSI Port Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 6. Display iSCSI Port Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Display iSCSI Port Statistics** option. From the port menu, select a port to open the Link Statistics Menu with options to view link logging parameters, reset link logging parameters, configure link logging parameters, and to view link statistics. For example:

```
Converged Network Adapter (CNA) Diagnostics

CNA Model QLE8242 SN: AFE1028C03870
   1. Port  2 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:97:74
      WWPN: 21-00-00-0E-1E-04-97-77
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214. Link Down
   2. Port  1 [Protocol(s): NIC iSCSI FCoE]
      MAC Address: 00:0E:1E:04:97:70
      WWPN: 21-00-00-0E-1E-04-97-73
      Port iSCSI Name: iqn.2000-04.com.qlogic:isp8214. Online

    (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
    Please Enter Selection: 2
```

```
--------------------------------------------------------------------------------
IPTxPacketsCount           : 13986
IPTxBytesCount             : 830056
IPTxFragmentsCount         : 0
IPRxPacketsCount           : 13971
IPRxBytesCount             : 4175546
IPRxFragmentsCount         : 0
IPDatagramReassemblyCount  : 0
IPInvalidAddrErrorCount    : 0
IPRxPacketErrorCount       : 0
IPRxFragmentOverlapCount   : 0
IPRxFragmentOutOfOrderCount: 0
IPFragmentReassemblyTimeout: 0
IPv6TxPacketCount          : 0
IPv6TxByteCount            : 0
IPv6TxFragmentCount        : 0
IPv6RxPacketCount          : 0
IPv6RxByteCount            : 0
IPv6RxFragmentCount        : 0
IPv6DatagramReassembly     : 0
IPv6InvalidAddressError    : 0
IPv6ErrorPacketCount       : 0
IPv6FragRxOverlapCount     : 0
IPv6FragRxOutOfOrderCount  : 0
IPv6DatagramReassemblyTO   : 0
TCPTxSegmentsCount         : 13986
TCPTxBytesCount            : 550276
TCPRxSegmentsCount         : 13971
TCPRxBytesCount            : 3700532
TCPDuplicateACKRetrans     : 0
TCPRetransTimerExpiredCount: 48
TCPRxDuplicateACKCount     : 0
TCPRxPureACKCount          : 0
TCPTxDelayedACKCount       : 2526
TCPTxPureACKCount          : 2530
TCPRxSegmentErrorCount     : 0
TCPRxSegmentOutOfOrderCount: 0
TCPRxWindowProbeCount      : 0
TCPRxWindowUpdateCount     : 13979
TCPTxWindProbePersistCount : 0
ECCErrorCorrectionCount    : 0
iSCSITxPDUCount            : 11452
iSCSITxBytesCount          : 576
iSCSIRxPDUCount            : 12709
iSCSIRxBytesCount          : 3090095
iSCSICompleteIOsCount      : 6339
iSCSIUnexpectedIORxCount   : 0
iSCSIFormatErrorCount      : 0
iSCSIHeaderDigestCount     : 0
iSCSIDataDigestErrorCount  : 0
iSCSISeqErrorCount         : 0
--------------------------------------------------------------------------------
```

Reset iSCSI Statistics

5. Adapter Statistics ▸ 1. Converged Network Adapter ▸ 7. Display iSCSI Port Statistics

From the Converged Network Adapter (CNA) Statistics menu, select the **Reset iSCSI Statistics** option. From the port menu, select a port for which to reset the status logging parameters to their default values.

Refresh

6. Refresh

From the main menu, select the **Refresh** option to refresh (reload) the adapters and adapter port indices. For example:

```
Scanning for QLogic adapters, please wait...
Using config file: C:\Program Files\...\iscli.cfg
Using config file: C:\Program Files\...\netscli.cfg
Loading: 1. CNA ... adapters, please wait...
Loading: 1. CNA Port index : 1 ...
Loading: 1. CNA Port index : 2 ...
Refreshing interfaces ... Please wait ......
Scanning for QLogic adapters, please wait...

        Hit <Enter> to continue:
```

When you run QConvergeConsole CLI, the CLI collects all relevant information, including the number of available ports and the state of each one. Between the time you start QConvergeConsole CLI and the time you perform a specific action or request additional information, changes may have occurred to the port state, network state, or firmware parameters. To ensure that you are viewing the most current information, you should perform a **Refresh**. (In some cases, QConvergeConsole CLI automatically refreshes the information before or after specific commands.)

Help (-h)

7. Help

From the main menu, select the **Help** option to view the syntax and description for each noninteractive command line option. For more detailed information about each command, see the noninteractive chapter for the specific adapter type.

Exit

8. Exit

From the main menu, close the QConvergeConsole CLI session.

11 NIC Partitioning (NPAR) Interactive Commands

This chapter outlines the steps for setting up NIC partitioning (NPAR) using QConvergeConsole CLI in interactive mode. The displayed commands apply to both Linux and Windows operating systems.
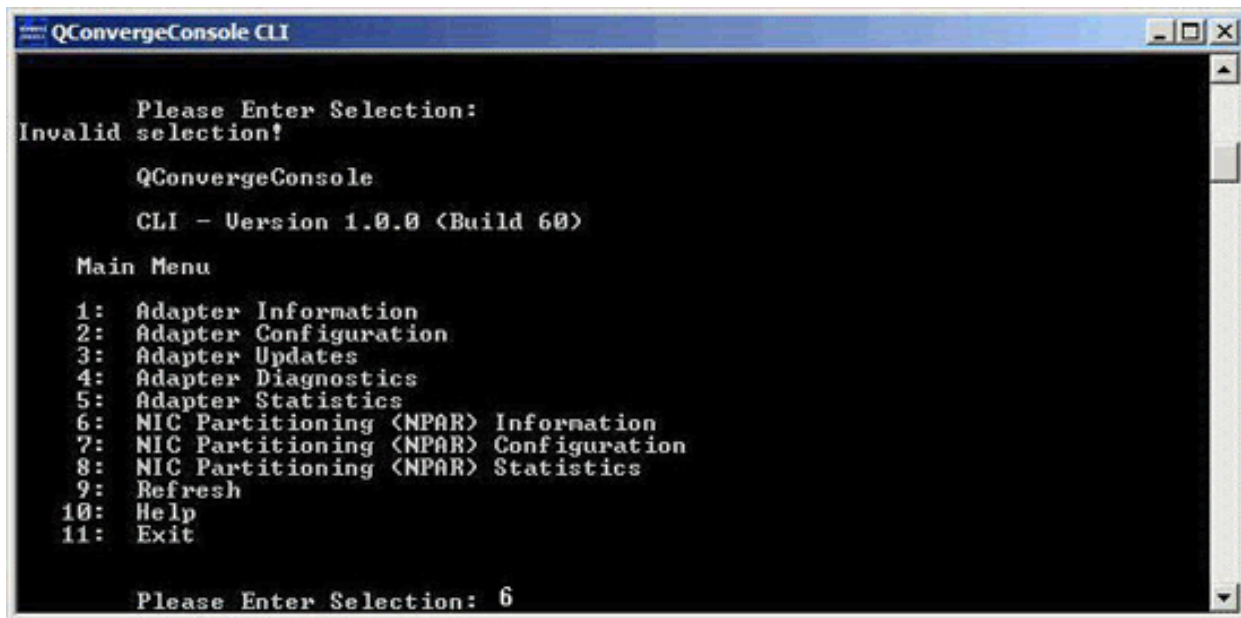
For an overview of NPAR, refer to Appendix A. NPAR is supported by the QLogic 3200 Series Intelligent Ethernet Adapters, and 8200 Series Converged Network Adapters

For information about non-interactive mode NPAR commands, refer to Chapter 7.

Setting Up NIC Partitions

To set up NIC partitions using the QCC CLI:

1. Start the QCC CLI interface and select option `6: NIC Partitioning <NPAR> Information` (Figure 11-1).
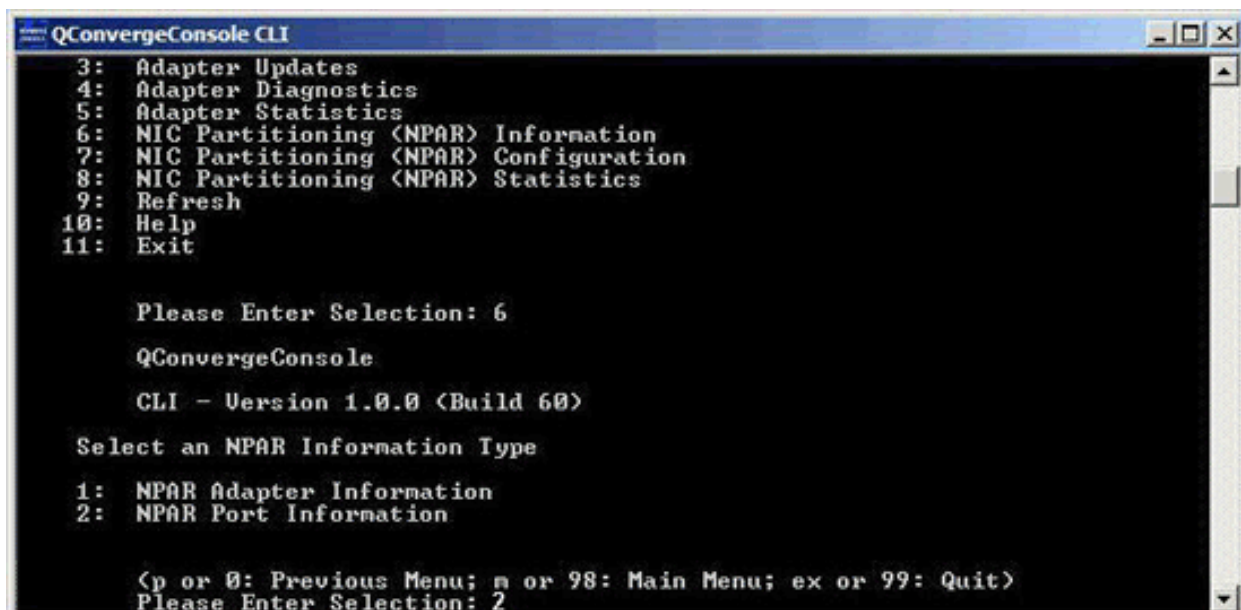
Figure 11-1. Selecting Option 6 to View NPAR Information Options

2. Enter option `2: NPAR Port Information` (Figure 11-2).
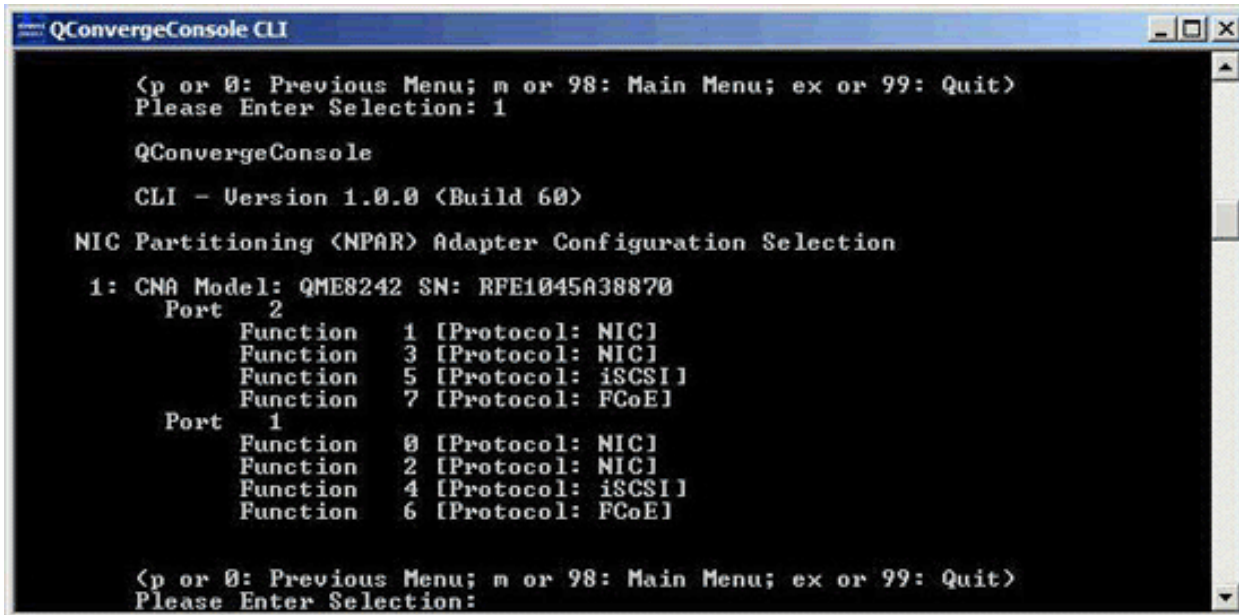
Figure 11-2. Selecting Option 2 to View NPAR Port Information

The NPAR Configuration Selection Page displays the current configuration (Figure 11-3).
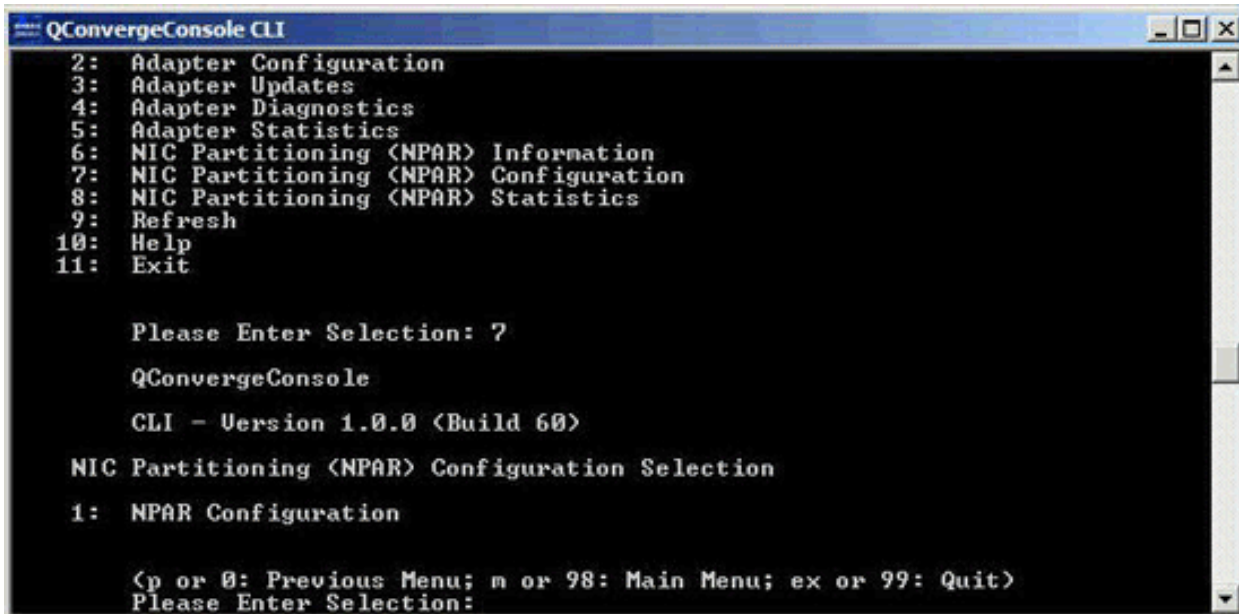
Figure 11-3. NPAR Configuration Selection Screen

3. Return to the main menu after viewing the NPAR information and select option 7: `NIC Partitioning <NPAR> Configuration` (Figure 11-4).
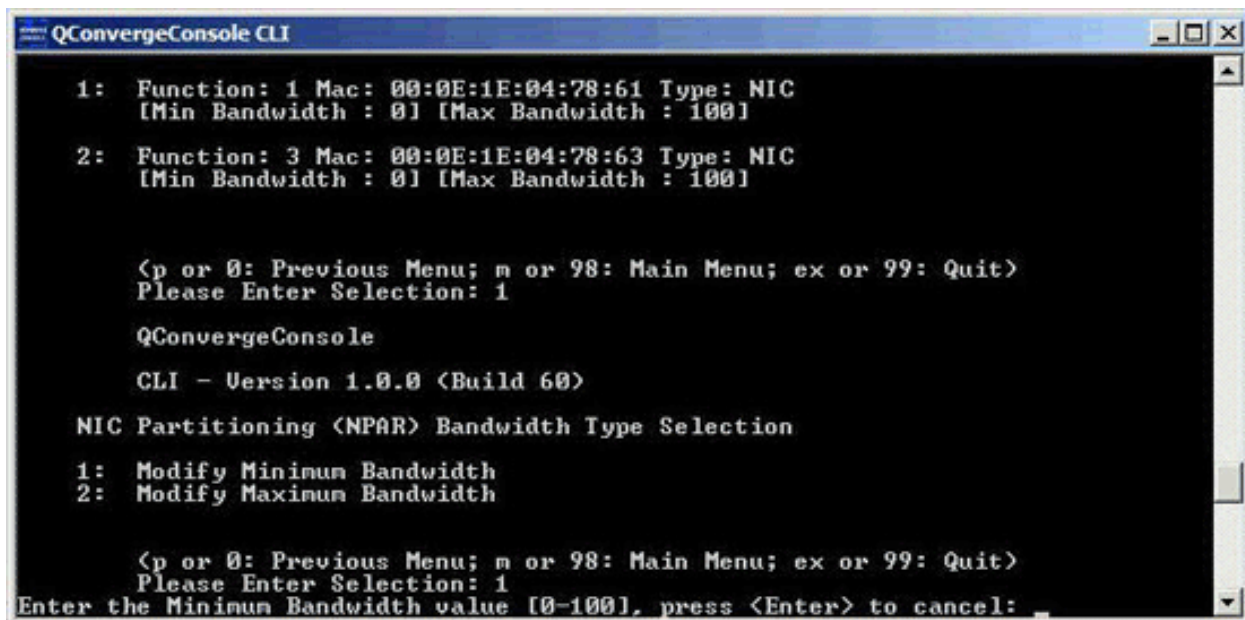
Figure 11-4. Selecting NPAR Configuration

4. Select option **1: NPAR Configuration** to display the NPAR Configuration menu, which provides the following options:

    1: Bandwidth Configuration

    2: Change PCI Function Personality

5. Configure the bandwidth settings to meet your system requirements.

6. For example, to change the bandwidth of the function 1 NIC partition:

    a. Select option **1: Bandwidth Configuration**

    b. Select option **1: Function:1**

    c. Select option **1: Modify Minimum Bandwidth** (Figure 11-5)

Figure 11-5. Selecting to Modify Minimum Bandwidth

    d. At the prompt, enter the percent value of bandwidth you want committed to the selected function.

    e. Enter the percent value of bandwidth you want to limit the selected function to.

f.   Specify whether you want your bandwidth settings to persist across reboots (Figure 11-6).

Figure 11-6. Setting Bandwidth Changes to Persist

7.   Return to the NIC Partitioning <NPAR> Configuration Selection screen.

8.   Change the personalities of each function to meet your system requirements. For example:

a.   Select option `2: Change PCI Function Personality`.

b.   Select the port number, `1` or `2`.

c.   Select the function number. The command line displays a list of options with choices that apply to the selected function number. This mode prevents you from assigning a function type that does not apply to a given function number.

d.   Set the personality type by selecting the option number that identifies the desired function type. Depending on the function number and current state, this could be `Disabled`, `NIC`, `FCoE`, or `iSCSI`.
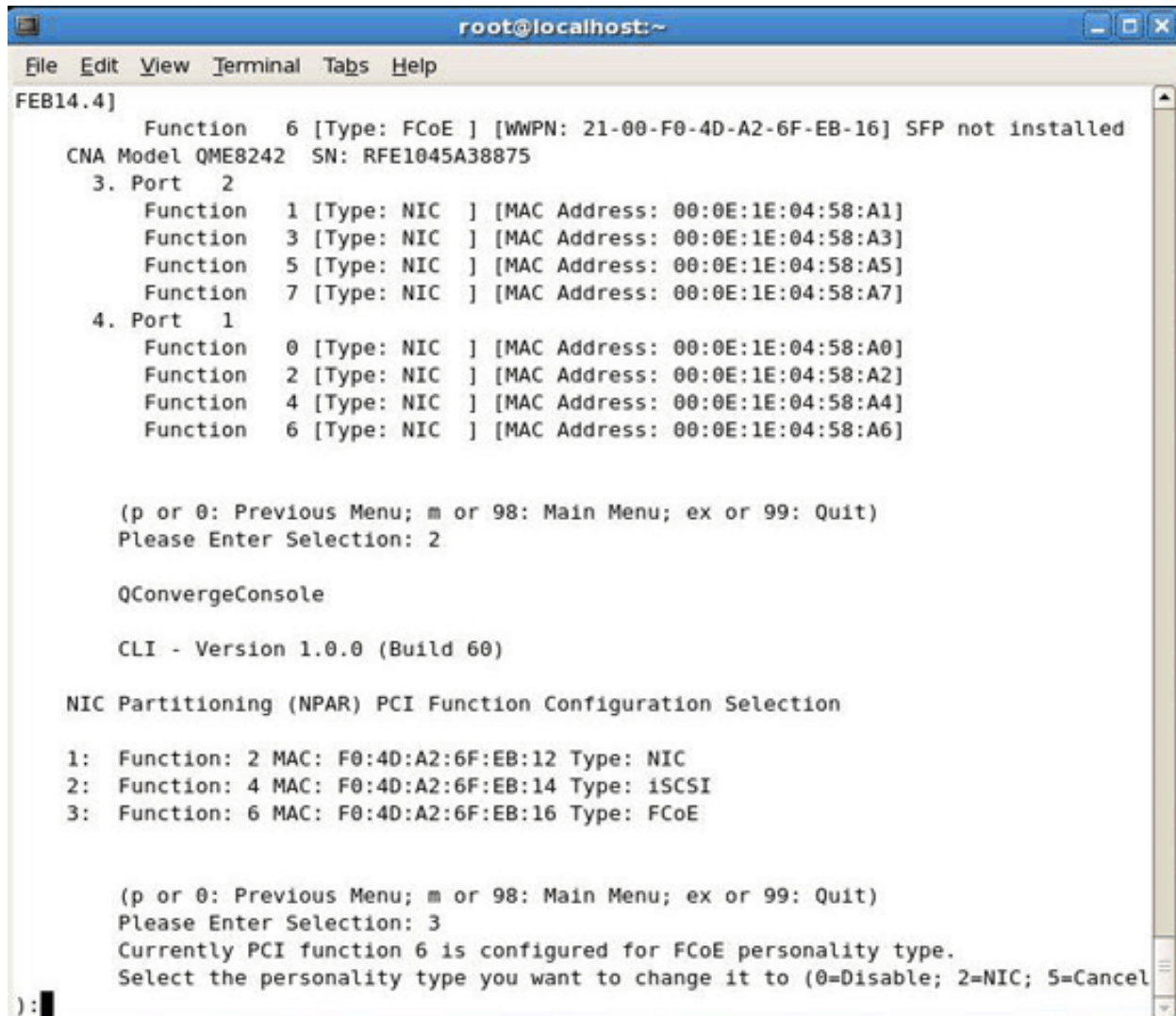
NOTE:

For a list of NPAR configuration options, see "NPAR Setup" on page A-8.

---

9. Figure 11-7 shows the CLI commands leading to the option for changing a function type on a Linux system.


```
                                    root@localhost:~
File  Edit  View  Terminal  Tabs  Help
FEB14.4]
        Function   6 [Type: FCoE ] [WWPN: 21-00-F0-4D-A2-6F-EB-16] SFP not installed
    CNA Model QME8242   SN: RFE1045A38875
      3. Port   2
        Function   1 [Type: NIC  ] [MAC Address: 00:0E:1E:04:58:A1]
        Function   3 [Type: NIC  ] [MAC Address: 00:0E:1E:04:58:A3]
        Function   5 [Type: NIC  ] [MAC Address: 00:0E:1E:04:58:A5]
        Function   7 [Type: NIC  ] [MAC Address: 00:0E:1E:04:58:A7]
      4. Port   1
        Function   0 [Type: NIC  ] [MAC Address: 00:0E:1E:04:58:A0]
        Function   2 [Type: NIC  ] [MAC Address: 00:0E:1E:04:58:A2]
        Function   4 [Type: NIC  ] [MAC Address: 00:0E:1E:04:58:A4]
        Function   6 [Type: NIC  ] [MAC Address: 00:0E:1E:04:58:A6]


        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 2

        QConvergeConsole

        CLI - Version 1.0.0 (Build 60)

    NIC Partitioning (NPAR) PCI Function Configuration Selection

    1:  Function: 2 MAC: F0:4D:A2:6F:EB:12 Type: NIC
    2:  Function: 4 MAC: F0:4D:A2:6F:EB:14 Type: iSCSI
    3:  Function: 6 MAC: F0:4D:A2:6F:EB:16 Type: FCoE


        (p or 0: Previous Menu; m or 98: Main Menu; ex or 99: Quit)
        Please Enter Selection: 3
        Currently PCI function 6 is configured for FCoE personality type.
        Select the personality type you want to change it to (0=Disable; 2=NIC; 5=Cancel
):
```

Figure 11-7. Selecting Function Type on Linux System

10. Return to the main menu and select option **8: NIC Partitioning <NPAR> Statistics** to view the Statistics. Navigate through the menu selections to view eSwitch statistics.

11. When finished setting up the NIC partitions, select option **11: Exit**.

If personality settings were modified, or if bandwidth settings were modified and the persist option was set, reboot the system to see the new settings take effect.

A NIC Partitioning (NPAR) Overview

This appendix provides the following information on NIC partitioning (NPAR):

- "What is NPAR?" on page A-2
- "NIC Partitioning Options" on page A-2
- "Personality Changes" on page A-5
- "Quality of Service" on page A-6
- "eSwitch" on page A-7
- "NPAR Setup" on page A-8

NOTE:

For information on NPAR noninteractive mode commands, see Chapter 7 NIC Partitioning (NPAR) Noninteractive Commands.

For information on NPAR interactive mode commands, see Chapter 11 NIC Partitioning (NPAR) Interactive Commands.

What is NPAR?

NIC Partitioning (NPAR) provides the ability to create multiple physical functions on the PCIe bus that share a single physical port. Each physical function is a PCI endpoint (PCIe) that can have a device driver attached to it.

The NPAR feature in QLogic adapters allows you to partition a single 10GbE NIC port into up to four individual partitions with user-configurable bandwidth and interface type (personality). The partitioning options are not limited to NIC as the name NPAR indicates; it extends to converged fabric partitioning by enabling you to assign iSCSI or FCoE protocols to certain partitions.

For example, each partition can be either native Ethernet NIC, or configured to support iSCSI or FCoE storage devices with different PCIe endpoint device class code (subject to restrictions listed in Table A-1. Both iSCSI and FCoE operate in full hardware offload mode.

The QLogic NPAR solution is OS and switch agnostic, which means NPAR does not require a proprietary switch to operate; however, the adapter does require the OS-specific QLogic adapter driver for each supported protocol (NIC, iSCSI, and FCoE). It also means NPAR bandwidth allocation can only regulate TX traffic but not RX traffic.

After you have configured the NIC partitions as desired on the adapter ports, you must reboot the server to make the personality changes take effect.

You can modify the minimum and maximum bandwidth for each NIC partition. The changes take effect immediately without rebooting the server. The minimum and maximum bandwidths are specified as percentages of the link bandwidth, where:

■ Minimum bandwidth is the minimum bandwidth guaranteed to a partition.

■ Maximum bandwidth is the maximum value that a partition is permitted to use.

QLogic Adapters that Support NPAR

The following adapters support NPAR:

■ 3200 Series Intelligent Ethernet Adapters

■ 8200 Series Converged Network Adapters

NIC Partitioning Options

The NPAR feature in QLogic adapters provides the ability to create multiple PCIe physical functions for each physical 10 GbE port on the adapter. Each PCIe function appears as an independent interface to the host operating system or hypervisor.

When the adapter is configured as an Ethernet-only adapter, it contains eight Ethernet functions.

By default, NPAR functionality is disabled on the adapters, having only two Ethernet functions enabled. Depending on the feature personality mapping supported on the adapter, you can enable additional Ethernet or storage functions.

The PCI function number assignment is as follows:

- Functions 0 and 1 are always NIC, function 0 for port 1 and function 1 for port 2; any of the other functions can be individually enabled or disabled.

- Functions 2 and 3 can only be NIC personalities.

- Functions 4 and 5 can be configured with either iSCSI or NIC personality.

- Functions 6 and 7 can be configured with either FCoE or NIC personality.

- You can configure at most one iSCSI and one FCoE personality for each physical port.

The adapter supports a maximum of 64 Layer-2 MAC address filters across all partitions, which limits the number of Virtual Network Adapters that can be created on a partitioned NIC. The NIC driver evenly distributes the number of filters across all NIC partitions.

For example, if the NIC adapter has four NIC partitions, two NIC partitions per physical port, then each NIC partition gets 16 filters (64/4 = 16). In this case, you should create no more than 16 Virtual Network Adapters on any NIC function that is configured to be used by HyperV Network Virtualization stack.

NOTE:

Similar requirements also apply to ESX environments.

The VLAN and Teaming solutions on partitioned NIC functions have the following restrictions:

- Fail-safe team cannot be created using NIC functions that belong to the same physical port. For example, you cannot choose PF2 as a backup for PF0 because both functions are partitions of the same physical port.

- 802.3ad link aggregation teams are not allowed on partitioned NIC

The following diagram (Figure A-1) shows the default NPAR function settings.
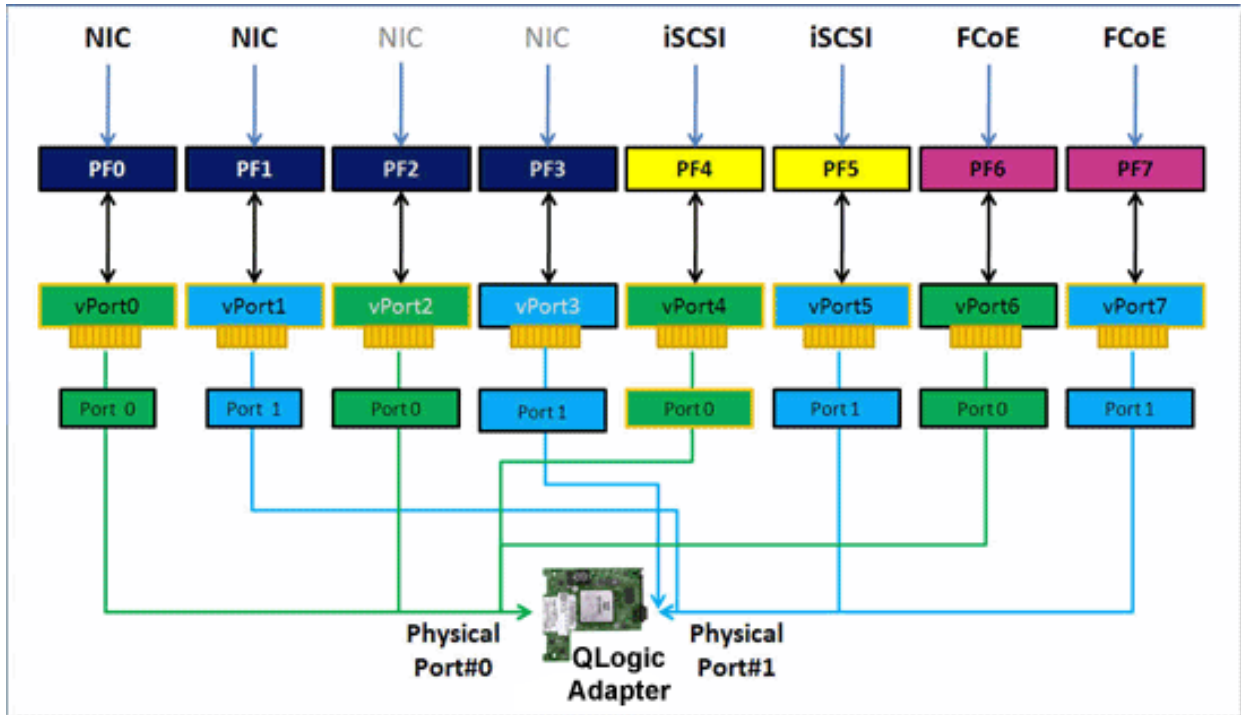
Figure A-1. NPAR Default Configuration—NIC, FCoE, iSCSI

The following diagram (Figure) shows the possible configurations.
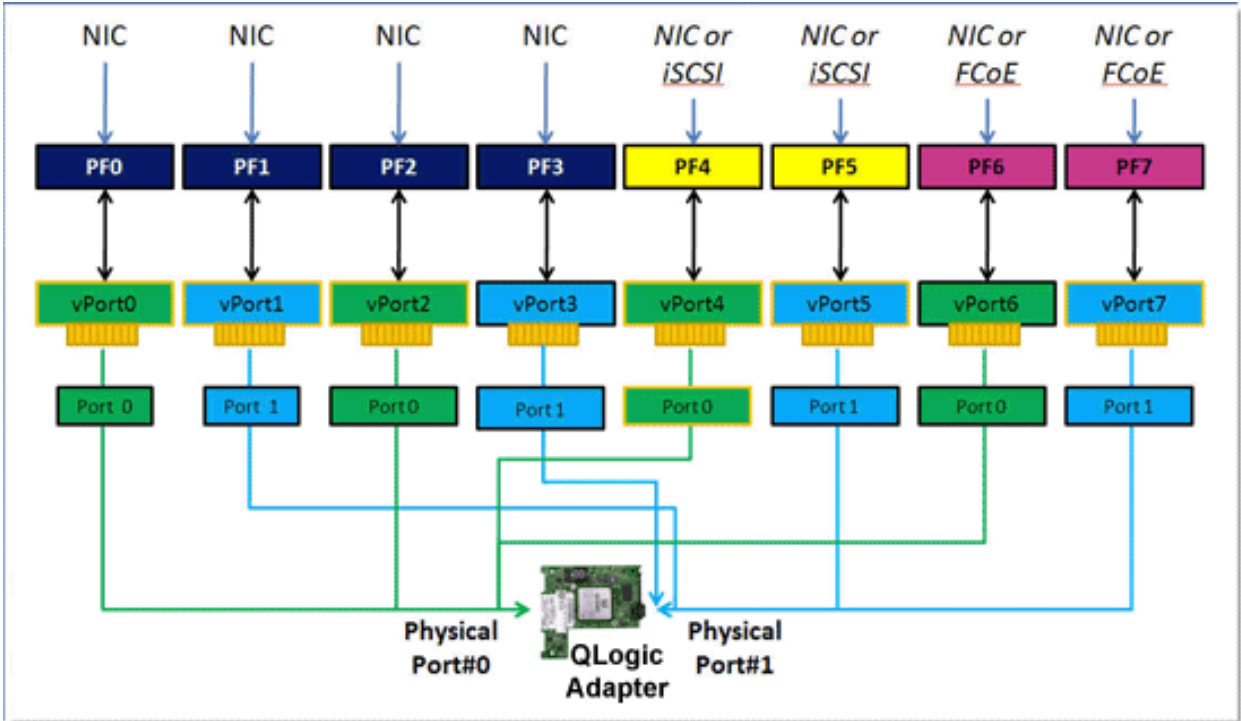

Figure A-2. NPAR Configuration Options — Personalities

Personality Changes

Based on your operating environment, you can use your preferred management tool to change or disable PCI functions on either physical port. Using this feature lets you divide each physical port into up to four partitions, configured to support one of the following PCI function types: NIC, FCoE, or iSCSI.

NOTE:

This document uses the terms personality and function type interchangeably.

Table A-1 shows the port identifications and the possible NPAR configurations.

Table A-1. Ports and NPAR Configuration

Function Number	Function Type	Physical Port Number	
		User Label[a]	System Number[b]
0	NIC	1	0
1	NIC	2	1
2	Disabled/NIC	1	0
3	Disabled/NIC	2	1
4	iSCSI/NIC/Disabled	1	0
5	iSCSI/NIC/Disabled	2	1
6	FCoE/NIC/Disabled	1	0
7	FCoE/NIC/Disabled	2	1

[a] The physical port number is displayed as Port 1 or Port 2 on the adapter's port's label.

[b] The physical port number is display as Phy Port 0 or Phy Port 1 on the NPAR configuration screens for most of the management tools, except where noted otherwise.

Quality of Service

Quality of Service (QoS) refers to the bandwidth allocation assigned to each partition used to send and receive data between the adapter port and connected devices.

Each physical port on a QLogic adapter can send and receive data at up to 10Gbps in both directions at the same time. When the physical port is partitioned into four partitions, the port bandwidth is divided between each port partition according to traffic demands.

You can set Quality of Service (QoS) for each port partition by setting minimum and maximum percentages of the physical port's bandwidth for each partition. This feature helps guarantee a transmission rate for each partition that requires a particular bandwidth to run critical applications using port partitions. The setting for a given QoS can resolve bottlenecks that exist when Virtual Machines (VMs) contend for port bandwidth.

Enhanced Transition Services (ETS) controls the actual bandwidth allocation at the network port. The bandwidth allocation under ETS is typically 50 percent for FCoE traffic and 50 percent for Non-FCoE traffic (NIC + iSCSI). This means that NPAR QoS allocations among the NIC partitions for a given port, allocate a percentage of the Non-FCoE portion of the bandwidth.

NPAR Quality of Service (QoS) allows NIC and iSCSI partitions to each allocate a minimum guaranteed portion of the available bandwidth. However, the user interface tools do not support setting the bandwidth limits for iSCSI partition. This means that the iSCSI partition may not get the desired bandwidth. For example, if the total minimum allocated bandwidth across the NIC partitions equals 100 percent, then the iSCSI partition will be limited to 1 percent of the NIC bandwidth portion in high-utilization conditions.

To ensure that iSCSI has more than one percent of bandwidth available in high-utilization conditions, set the total NPAR QoS Minimum Bandwidth settings so that they equal less than 100%.

For example:

- An NPAR enabled port has two NIC partitions, one iSCSI partition and one FCoE partition.

- ETS allocates 50 percent of the network bandwidth to FCoE traffic and 50 percent to non-FCoE traffic.

- The NPAR QoS Minimum Bandwidth setting for each NIC partition is 50 percent.

    - This means that each NIC partition is guaranteed 50 percent of 50 percent of 10Gb, or 2.5Gb each.

- If at any time the FCoE partition is using 5Gb of bandwidth and each NIC partition is using 2.5Gb, then the iSCSI partition is left with only 50Mb of bandwidth.

- If, however, the NIC partitions each allocated 45 percent of the non-FCoE traffic then the total allocated bandwidth would be 90 percent.

    - The remaining 10 percent (or 500 Mb) would then be effectively reserved for the iSCSi partition.

eSwitch

The adapters provide eSwitch (embedded switch) functionality. This provides a basic Layer-2 switch for Ethernet frames. Each physical port has one instance of an eSwitch, which supports all NIC partitions on that physical port.

The eSwitch operation is transparent and the administrator does not need to perform any specific configuration. The ability to view eSwitch statistics depends on your operating environment and management tool.

The QLogic drivers download the VM MAC addresses to the firmware. This enables the firmware and hardware to switch the packets destined for VMs on the host.

For traffic to flow from one eSwitch to another it must first pass through an external switch or have been forwarded by a VM that has a path through both eSwitches.

NPAR Setup

This section provides NPAR reference tables you can use when configuring NIC partitions using QConvergeConsole CLI.

Default Settings

Before configuring NIC partitions, the QLogic Adapter appears as a simple dual-port 10GbE adapter with NPAR settings shown in the following table.

Table A-2. Default Configuration

Function Number	Function Type	Physical Port Number	Minimum Bandwidth (%)	Maximum Bandwidth (%)	Default Function Type
0	NIC	0	0	100	Enabled as NIC
1	NIC	1	0	100	Enabled as NIC

Configuration Options

Depending on your system requirements and operating environment, you may set up the adapter port partitions to support different function types. The following table shows the available function types and configurable parameters.

Table A-3. Configuration Options

Function Number	Function Type	Physical Port Number	Minimum Bandwidth[a] (%)	Maximum Bandwidth[b] (%)	Default Function Type
0	NIC	0	0	100	NIC
1	NIC	1	0	100	NIC
2	Disabled/NIC	0	0	100	NIC
3	Disabled/NIC	1	0	100	NIC
4	iSCSI/NIC/Disabled	0	0	100	iSCSI
5	iSCSI/NIC/Disabled	1	0	100	iSCSI
6	FCoE/NIC/Disabled	0	0	100	FCoE
7	FCoE/NIC/Disabled	1	0	100	FCoE

[a] Minimum Bandwidth: Minimum guaranteed bandwidth, specified as a percentage of the link speed. The total across all partitions will add up to less than the maximum link bandwidth. The queue's rate will be allowed to exceed the specified value up to max-rate, if excess bandwidth is available on the physical port link.

[b] Maximum bandwidth: Maximum allowed bandwidth, specified as a percentage of the link speed. The queue's rate will not be allowed to exceed the specified value, even if excess bandwidth is available on the physical port link. The total across all partitions may not be greater than the maximum link bandwidth.

NPAR Configuration Parameters and Setup Tools

The following table identifies parameters that QConvergeConsole can configure.

Table A-4. NPAR Configuration Parameters and Setup Tools

Tool	Configurable NPAR Parameters		
	Function Type[a]	Minimum Bandwidth[b] (0-100%)	Maximum Bandwidth[b] (0-100%)
QLogic QConvergeConsole CLI for supported Windows and Linux operating systems	Yes	Yes[c]	Yes[c]
QLogic QConvergeConsole GUI for supported Windows and Linux operating systems	Yes	Yes[c]	Yes[c]

[a] Requires a system reboot to take effect. Refer to Table A-3 for the available function type options of each partition.

[b] For FCoE, DCBX/ETS negotiated bandwidth will overwrite manually configured bandwidth.

[c] This parameter is configurable only for NIC partitions, not for Storage (iSCSI/FCoE) partitions.

Glossary

adapter

The board that interfaces between the host system and the target devices. Adapter is synonymous with *host bus adapter (HBA)*, *host adapter*, and a*dapter board*.

adapter port

A port on the adapter board.

CLI

Command line interface. A program interface driven by entering commands and parameters.

Converged Network Adapter

QLogic Converged Network Adapters. support both data networking (TCP/IP) and storage networking (Fibre Channel) traffic on a single I/O adapter using two new technologies: Enhanced Ethernet and Fibre Channel over Ethernet (FCoE).

command line interface

See CLI.

device

A target, typically a disk drive. Hardware such as a disk drive, tape drive, printer, or keyboard that is installed in or connected to a system. In Fibre Channel, a *target* device.

driver

The software that interfaces between the file system and a physical data storage device or network media.

Enhanced Ethernet

Also called *data center Ethernet* or *converged enhanced Ethernet*. Refers to new enhancements to the existing Ethernet standard that eliminate Ethernet's inherently lossy nature and make 10Gb Ethernet a viable storage networking transport.

Ethernet

The most widely used LAN technology that transmits information between computer, typically at speeds of 10 and 100 million bits per second (Mbps).

Enhanced Transition Services

Enhanced Transition Services (ETS) controls the actual bandwidth allocation at the network port. The bandwidth allocation under ETS is typically 50 percent for FCoE traffic and 50 percent for Non-FCoE traffic (NIC + iSCSI). This means that NPAR QoS allocations among the NIC partitions for a given port, allocate a percentage of the Non-FCoE portion of the bandwidth.

eSwitch

The eSwitch (embedded switch) functionality provides a basic Layer-2 switch for Ethernet frames. Each physical port has one instance of an eSwitch, which supports all NIC partitions on that physical port.

ETS

See Enhanced Transition Services.

FC

See Fibre Channel.

FCoE

Fibre Channel over Ethernet. A new technology defined by the T11 standards body that allows traditional Fibre Channel storage networking traffic to travel over an Ethernet link by encapsulating Fibre Channel frames inside Layer 2 Ethernet frames. For more information, visit www.fcoe.com.

Fibre Channel

A high-speed serial interface technology that supports other higher layer protocols such as SCSI and IP.

Fibre Channel over Ethernet

See FCoE.

Internet Protocol

See IP.

Internet small computer system interface

See iSCSI.

IP

Internet Protocol. A method by which data are sent from one computer to another over the Internet. IP specifies the format of packets, also called *datagrams*, and the addressing scheme.

iSCSI

Internet small computer system interface. Protocol that encapsulates data into IP packets to send over Ethernet connections.

management workstation

PC workstation used to manage routers remotely by connecting to the routers using the QConvergeConsole CLI or CLI commands.

NIC

Network interface card. Computer card installed to enable a dedicated network connection.

NIC partitioning

The NIC partitioning feature in QLogic adapters allows you to partition a single 10GbE NIC port into up to four individual partitions with user-configurable bandwidth and interface type (personality). The partitioning options are not limited to NIC as the name NPAR indicates; it extends to converged fabric partitioning by enabling you to assign iSCSI or FCoE protocols to certain partitions.

NPAR

See NIC partitioning.

path

A path to a device is a combination of a adapter port instance and a target port as distinct from internal paths in the fabric network. A fabric network appears to the operating system as an opaque network between the adapter (initiator) and the target.

Because a path is a combination of an adapter and a target port, it is distinct from another path if it is accessed through a different adapter or it is accessing a different target port. Consequently, when switching from one path to another, the driver might be selecting a different adapter (initiator), a different target port, or both.

This is important to the driver when selecting the proper method of failover notification. It can make a difference to the target device, which might have to take different actions when receiving retries of the request from another initiator or on a different port.

port

Access points in a device where a link attaches. There are four types of ports, as follows:

- N_Port—a Fibre Channel port that supports point-to-point topology.
- NL_Port—a Fibre Channel port that supports loop topology.
- F_Port—a port in a fabric where an N_Port can attach.
- FL_Port—a port in a fabric where an NL_Port can attach.

port instance

The number of the port in the system. Each adapter may have one or multiple ports, identified with regard to the adapter as port 0, port 1 and so forth. To avoid confusion when dealing with a system containing numerous ports, each port is assigned a port instance number when the system boots up. So Port 0 on an adapter might have a port instance number of 8, for example, if it is the eighth port discovered by the system.

QoS

See Quality of Service.

Quality of Service

Quality of Service (QoS) refers to the bandwidth allocation assigned to each partition used to send and receive data between the adapter port and connected devices.

Each physical port on a QLogic adapter can send and receive data at up to 10Gbps in both directions at the same time. When the physical port is partitioned into four partitions, the port bandwidth is divided between each port partition according to traffic demands.

You can set Quality of Service (QoS) for each port partition by setting minimum and maximum percentages of the physical port's bandwidth for each partition. This feature helps guarantee a transmission rate for each partition that requires a particular bandwidth to run critical applications using port partitions. The setting for a given QoS can resolve bottlenecks that exist when Virtual Machines (VMs) contend for port bandwidth.

RAID

Redundant array of independent/inexpensive disks. RAID are fault-tolerant disks that look like either single or multiple volumes to the server.

RAM

Random-access memory. The most common computer memory that can be used by programs to perform necessary tasks while the computer is on; an integrated circuit memory chip. RAM allows information to be stored or accessed in any order (randomly), and all storage locations are equally accessible.

random-access memory

See RAM.

redundant array of independent/inexpensive disks

See RAID.

SAN

Storage area network. Multiple storage units (disk drives) and servers connected by networking topology.

SCSI

Small computer system interface. A high-speed interface used to connect devices, such as hard drives, CD drives, printers, and scanners, to a computer. The SCSI can connect many devices using a single controller. Each device is accessed by an individual identification number on the SCSI controller bus.

secure sockets layer

See SSL.

SSL

Secure sockets layer. A cryptographic protocol that provides communications security over the Internet.

storage area network

See SAN.

target

The storage-device endpoint of a SCSI session. Initiators request data from targets. Targets are typically disk-drives, tape-drives, or other media devices. Typically a SCSI peripheral device is the target but an adapter may, in some cases, be a target. A target can contain many LUNs.

A target is a device that responds to a requested by an initiator (the host system). Peripherals are targets, but for some commands (for example, a SCSI COPY command), the peripheral may act as an initiator.

TCP

Transmission control protocol. A set of rules to send data in packets over the Internet protocol.

QLOGIC