



User's Guide

Server Management Command Line Protocol

QLogic BCM57xx and BCM57xxx-Based Adapters

BC0054509-00 A

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Preface

Intended Audience

This guide is intended for system administrators who are responsible for configuring iSCSI functions in networks using QLogic BCM57xx and BCM57xxx-based adapters.

What Is in This Guide

This guide is organized as follows:

- [Chapter 1](#) summarizes the Server Management Command Line Protocol (SMCLP) and describes its relationship with the *PCI Firmware Specification*.
- [Chapter 2](#) defines the SMCLP parameters, their functions, syntax, and values according to the following categories:
 - ❑ [General iSCSI Parameters](#)
 - ❑ [iSCSI Initiator Parameters](#)
 - ❑ [iSCSI First Target Parameters](#)
 - ❑ [iSCSI Second Target Parameters](#)
 - ❑ [Secondary Device Information Parameters](#)
 - ❑ [Ethernet and MBA Parameters](#)
 - ❑ [NIC Partitioning Parameters](#)
 - ❑ [FCoE Boot Configuration Parameters](#)
 - ❑ [Device Configuration Parameter](#)

Related Materials

For information about downloading documentation from the QLogic Web site, see [“Downloading Updates” on page x](#).

Documentation Conventions

This guide uses the following documentation conventions:

- The QLogic BCM57xx and BCM57xxx-based adapters are collectively referred to as *adapters*, *devices*, or *cards*. In some cases, *devices* refers to a QLogic adapter function or adapter port.
- **NOTE** provides additional information.
- **CAUTION** without an alert symbol indicates the presence of a hazard that could cause damage to equipment or loss of data.
- 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.
- Command line interface (CLI) command syntax conventions include the following:
 - ❑ Plain text indicates items that you must type as shown. For example:
 - `gauccli -pr nic -ei`
 - ❑ `< >` (angle brackets) indicate a variable whose value you must specify. For example:
 - `<serial_number>`

NOTE

For CLI commands only, variable names are always indicated using angle brackets instead of *italics*.

- ❑ `[]` (square brackets) indicate an optional parameter. For example:
 - `[<file_name>]` means specify a file name, or omit it to select the default file name.
- ❑ `|` (vertical bar) indicates mutually exclusive options; select one option only. For example:
 - `on|off`
 - `1|2|3|4`
- ❑ `...` (ellipsis) indicates that the preceding item may be repeated. For example:
 - `x...` means *one* or more instances of `x`.
 - `[x...]` means *zero* or more instances of `x`.
- ❑ `()` (parentheses) and `{ }` (braces) are used to avoid logical ambiguity. For example:
 - `a|b c` is ambiguous
 - `{(a|b) c}` means `a` or `b`, followed by `c`
 - `{a|(b c)}` means either `a`, or `b c`

Technical Support

Customers should contact their authorized maintenance provider for technical support of their QLogic products. QLogic-direct customers may contact QLogic Technical Support; others will be redirected to their authorized maintenance provider. Visit the QLogic support Web site listed in [Contact Information](#) for the latest firmware and software updates.

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/Support/Pages/ServicePrograms.aspx>.

Downloading Updates

The QLogic Web site provides periodic updates to product firmware, software, and documentation.

To download firmware, software, and documentation:

1. Go to the QLogic Downloads and Documentation page:
<http://driverdownloads.qlogic.com>.
2. Type the QLogic model name in the search box.
3. In the search results list, locate and select the firmware, software, or documentation for your product.
4. View the product details Web page to ensure that you have the correct firmware, software, or documentation. For additional information, click **Read Me** and **Release Notes** under Support Files.
5. Click **Download Now**.
6. Save the file to your computer.
7. If you have downloaded firmware, software, drivers, or boot code, follow the installation instructions in the *Readme* file.

Instead of typing a model name in the search box, you can perform a guided search as follows:

1. Click the product type tab: **Adapters**, **Switches**, **Routers**, or **ASICs**.
2. Click the corresponding button to search by model or operating system.
3. Click an item in each selection column to define the search, and then click **Go**.
4. Locate the firmware, software, or document you need, and then click the item's name or icon to download or open the item.

Training

QLogic Global Training maintains a Web site at www.qlogictraining.com offering online and instructor-led training for all QLogic products. In addition, sales and technical professionals may obtain Associate and Specialist-level certifications to qualify for additional benefits from QLogic.

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 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. QLogic is constantly adding to the collection of information in the database to provide answers to your most urgent questions. Access the database from the QLogic Support Center: <http://support.qlogic.com>.

1 Introduction

This guide describes and defines the Distributed Management Task Force (DMTF) Server Management Command Line Protocol (SMCLP) specification v1.0.1a based parameter passing interface for the adapter software drivers and firmware, specifically iSCSI boot and multi-boot agent (MBA) drivers.

SMCLP Interface

The SMCLP is a text-based command/response protocol and scriptable command line syntax that is used for driver configuration, for instrumentation, and for gathering driver information. SMCLP may be used by a system BIOS in a system setup or configuration program, or by network management software applications.

The SMCLP syntax is case insensitive and is defined as follows:

<VERB> [<OPTIONS>] [<TARGET>] [<PROPERTIES>]

- VERB is a specific command such as `set` or `show`
- OPTIONS are verb switches or modifiers
- TARGET is the specified device
- PROPERTIES are the device features to/from which values are moved

For example:

```
set netport1 OEMHP_Vlan=100
```

The *DMTF SMCLP v1.0.1a Specification* can be found on the DMTF Website:

http://www.dmtf.org/standards/published_documents/DSP0214.pdf

PCI Interface

The DMTF SMCLP entry point is described and defined in the *PCI Firmware Specification Revision 3.0* and the accompanying *PCI Option ROM CLP Final ECN* documents. The expected input arguments for the SMCLP entry point are listed [Table 1-1](#):

Table 1-1. Input Arguments for SMCLP Entry Point

Argument Number	Register	Description
1	[AH]	Bus number
2	[AL]	Upper 5 bits are the device number
3	[AL]	Lower 3 bits are the function number
4	[ES:EDI]	Pointer to NULL-terminated SMCLP command line string buffer
5	[DS:ESI]	Pointer to SMCLP command response string buffer

The expected output arguments for the SMCLP entry point are listed in [Table 1-2](#).

Table 1-2. Output Arguments for SMCLP Entry Point

Argument Number	Register	Description
1	[AH]	If [AL]=2 (COMMAND_PROCESSING_FAILED), the contents of [AH] are derived from the SMCLP processing error value ^a . If [AL]=3 (COMMAND_EXECUTION_FAILED), the contents of [AH] are derived from the SMCLP CIM status code values ^b .
2	[AL]	SMCLP Command status ^c
3	[EAX]	Bit 31: OEM code flag 0=Execution code is an SMCLP probable cause value ^d 1=Execution code is an OEM-specific value
4	[EAX]	Bits 30–16: Execution code
5	[ES:EDI]	Pointer to null-terminated SMCLP command line string buffer

Table 1-2. Output Arguments for SMCLP Entry Point (Continued)

Argument Number	Register	Description
6	[DS:ESI]	Pointer to null-terminated SMCLP command response string buffer

^a See *DMTF SMCLP v1.0.1a Specification*, Table 6: Processing Error Values and Tags.

^b See *DMTF SMCLP v1.0.1a Specification*, Table 9: CIM Status Code Values and Descriptions.

^c See *DMTF SMCLP v1.0.1a Specification*, Table 4: Command Status Values and Tags.

^d See *DMTF SMCLP v1.0.1a Specification*, Table 11: Probable Cause Values and Descriptions.

The *PCI Firmware Specification Revision 3.0* can be found on the PCI SIG Website:

http://www.pcisig.com/members/downloads/specifications/conventional/pcifw_r3_0_updated.pdf

The *PCI Option ROM CLP Final ECN* document can be found on the PCI SIG Website:

http://www.pcisig.com/specifications/conventional/pci_firmware/PCIFW30_CLP_1_0_071906.pdf

2 iSCSI Parameters

General iSCSI Parameters

By default all parameters are initially set to their corresponding values stored in the NVRAM. Any updated parameter value overrides the default value.

Network Params DHCP

Enables or disables DHCP in the iSCSI boot host software to acquire IPv4 address information. This parameter should not be used with [“IP Autoconfiguration” on page 20](#) or [“IPv6 Router Advertisement” on page 21](#).

Syntax `set <target> OEM<vendor>_NetworkParamsDHCP = <ENABLED|DISABLED>`

Values **ENABLED**

Uses DHCP to acquire the IPv4 address information.

DISABLED

Uses static IP configuration to acquire the IPv4 address information.

Examples The following example enables DHCP to acquire IPv4 address information:

```
set netport1 OEMHP_NetworkParamsDHCP=ENABLED
```

iSCSI Params DHCP

Enables or disables DHCP in the iSCSI boot host software to acquire iSCSI target parameters.

Syntax `set <target> OEM<vendor>_iSCSIParamsDHCP=<ENABLED | DISABLED>`

Values **ENABLED**

Uses DHCP to acquire the iSCSI target parameters.

DISABLED

Use static IP configuration to acquire the iSCSI target parameters.

Examples The following example enables DHCP to acquire iSCSI target parameters.

```
set netport1 OEMHP_iSCSIParamsDHCP=ENABLED
```

CHAP Authentication

Enables or disables the challenge handshake authentication protocol (CHAP) when the iSCSI boot host software connects to the iSCSI target device. During the authentication process, if the target CHAP configuration is available to the initiator device, mutual CHAP occurs dynamically.

Syntax `set OEM<vendor>_ChapAuth=<ENABLED | DISABLED>`

Values **ENABLED**

Use CHAP to authenticate the iSCSI target device.

DISABLED

Do not use CHAP to authenticate connection to the iSCSI target device.

Examples The following example disables CHAP authentication.

```
set netport1 OEMHP_ChapAuth=DISABLED
```


Boot to iSCSI Target

Enables or disables the iSCSI boot host software to boot from the connected iSCSI target device. This parameter is useful when performing installations directly to an iSCSI target device.

Syntax `set <target> OEM<vendor>_BootToTarget=
<ENABLED|DISABLED|ONE TIME DISABLED>`

Values **ENABLED**

Enables the iSCSI host to boot from the iSCSI target image.

DISABLED

Disables the iSCSI host from booting from the iSCSI target image; control returns to the system BIOS so that the next boot device may be used.

ONE TIME DISABLED

Disables the iSCSI host from booting from the iSCSI target image on the first attempt, but then enables booting upon subsequent attempts.

Examples The following example enables the iSCSI host to boot from the iSCSI target device:

```
set netport1 OEMHP_BootToTarget=ENABLED
```

DHCP Vendor ID

Specifies the DHCP vendor ID. If <string> matches the Vendor Class ID field in the DHCP Offer packet, the iSCSI boot host software looks into the DHCP Option 43 fields for the required iSCSI boot extensions.

Syntax `set <target> OEM<vendor>_DhcpVendorId=<identifier>`

Values **<identifier>**

DHCP vendor ID string of 1–32 characters.

Examples The following example specifies “QLGCISAN” as the DHCP vendor ID.

```
set netport1 OEMHP_DhcpVendorId=QLGCISAN
```

Link Up Delay Time

Specifies the time in seconds that iSCSI boot host software waits after an Ethernet link is established before sending data over the network.

Syntax `set <target> OEM<vendor>_LinkUpDelay=<time>`

Values **<time>**
Delay time in seconds from 0–255.

Examples The following example specifies a link up delay time of 60 seconds.
`set netport1 OEMHP_LinkUpDelay=60`

Use TCP Timestamp

Enables or disables the TCP timestamp option.

Syntax `set <target> OEM<vendor>_UseTcpTimeStamp=<ENABLED | DISABLED>`

Values **ENABLED**
Enables the TCP timestamp option
DISABLED
Disables the TCP timestamp option

Examples The following example disables the TCP timestamp option:
`set netport1 OEMHP_UseTcpTimeStamp=DISABLED`

Target as First HDD

Enables or disables the iSCSI target drive as the first hard drive in the system.

Syntax `set <target> OEM<vendor>_TargetAsFirstHDD=<ENABLED | DISABLED>`

Values **ENABLED**
Defines the iSCSI target drive as the first hard drive in the system.
DISABLED
Allows the system to assign the iSCSI target drive number.

Examples The following example enables the iSCSI target drive as the first hard drive:
`set netport1 OEMHP_TargetAsFirstHDD=ENABLED`

LUN Busy Retry Count

Specifies the number of connection retries that the iSCSI boot initiator will attempt if the iSCSI target LUN is busy.

Syntax `set <target> OEM<vendor>_LunBusyRetries=<integer>`

Values **<integer>**
Values can be 0–60.

Examples The following example specifies 60 connection retries:
`set netport1 OEMHP_LunBusyRetries=60`

Windows HBA Boot Mode

Specifies the iSCSI boot initiator boot path (offload or non-offload).

Syntax `set <target> OEM<vendor>_WindowsHbaMode=<ENABLED|DISABLED>`

Values **ENABLED**
The iSCSI boot initiator boots with the iSCSI offload path.

DISABLED
The iSCSI boot initiator boots using the non-offload path (with MSFT iSCSI initiator and NDIS).

Examples The following example causes the iSCSI boot initiator to boot using the non-offload path:
`set netport1 OEMHP_WindowsHbaMode=DISABLED`

IP Version

Specifies the Internet protocol version that the iSCSI boot initiator uses (IPv4 or IPV6).

Syntax `set <target> OEM<vendor>_IpVersion=<ipv4|ipv6>`

Values **ipv4**

The iSCSI boot initiator uses IPv4.

|ipv6

The iSCSI boot initiator uses IPv6.

Examples The following example specifies IPv6 for use by the iSCSI boot initiator:

```
set netport1 OEMHP_IpVersion=ipv6
```

IP Autoconfiguration

Specifies the source from which the iSCSI boot host software acquire the IPv6 address information. This parameter should not be used with [“Network Params DHCP” on page 15](#).

Syntax `set <target> OEM<vendor>_IpAutoconfiguration=
<ENABLED|DISABLED>`

Values **ENABLED**

iSCSI boot software acquires IPv6 address information using Stateful/Stateless autoconfiguration.

DISABLED

iSCSI boot software acquires IPv6 address information using static IP configuration.

Examples The following example specifies Stateful/Stateless autoconfiguration to acquire the IPv6 address:

```
set netport1 OEMHP_IpAutoconfiguration=ENABLED
```

IPv6 Router Advertisement

Specifies the source from which the iSCSI boot host software acquire the IPv6 address information. This parameter should not be used with [“Network Params DHCP” on page 15](#).

Syntax `set <target> OEM<vendor>_RadvIPv6=<ENABLED | DISABLED>`

Values **ENABLED**

iSCSI boot software acquires IPv6 address information using Stateful/Stateless autoconfiguration.

DISABLED

iSCSI boot software acquires IPv6 address information using static IP configuration.

Examples The following example specifies Stateful/Stateless autoconfiguration to acquire the IPv6 address:

```
set netport1 OEMHP_RadvIPv6=ENABLED
```

CHAP Authentication Method

Specifies the use of CHAP authentication when the iSCSI boot host software connects to the iSCSI target device.

Syntax `set OEM<vendor>_authenticationMethod=<None | CHAP | MutualCHAP>`

Values **None**

Do not use CHAP to authenticate connection to the iSCSI target device.

CHAP

Use CHAP to authenticate the iSCSI target device.

MutualCHAP

Use CHAP to authenticate both the host and the iSCSI target device.

Examples The following example specifies CHAP authentication:

```
set netport1 OEMHP_authenticationMethod=CHAP
```

iSCSI Initiator Parameters

By default all parameters are initially set to their corresponding values stored in the NVRAM. Any updated parameter value overrides the default value.

IP Address

Specifies the static IP address (IPv4 or IPv6) for the iSCSI initiator device.

Syntax `set <target> OEM<vendor>_InitiatorIP=<ipv4|ipv6 Address>`

Values **<ipv4 | ipv6 Address>**
Specifies an IPv4 (xx.xx.xx.xx) or an IPv6 address (xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx).

Examples The following example specifies an IPv4 address:

```
set netport1 OEMHP_InitiatorIP=60.2.1.80
```

The following example specifies an IPv6 address:

```
set netport1 OEMHP_InitiatorIP=  
fe80:2100:18ff:fe04:24bc:85a3:8a2e:7334
```

Subnet Mask

Specifies the static IPv4 subnet mask for the iSCSI initiator device. This parameter should not be used in with [“Subnet Mask” on page 22](#) or [“IPv6 NetMask” on page 25](#).

Syntax `set <target> OEM<vendor>_InitiatorNetmask=<subnet mask>`

Values **<subnet mask>**
IPv4 subnet mask (xx.xx.xx.xx).

Examples The following example specifies the IPv4 subnet mask 255.255.0.0:

```
set netport1 OEMHP_InitiatorNetmask=255.255.0.0
```

Default Gateway

Specifies the static IP gateway address (IPv4 or IPv6) for the iSCSI initiator device.

Syntax `set <target> OEM<vendor>_InitiatorRoute=<ipv4|ipv6 address>`

Values **<ipv4 | ipv6 Address>**
ipv4 (xx.xx.xx.xx) or an IPv6 address (xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx)

Examples The following example specifies the IPv4 address 60.2.1.254:

```
set netport1 OEMHP_InitiatorRoute=60.2.1.254
```

Primary DNS

Specifies the static primary DNS IP address for the iSCSI initiator device.

Syntax `set <target> OEM<vendor>_PrimaryDNS=<ipv4|ipv6 address>`

Values **<ipv4 | ipv6 Address>**
IPv4 (xx.xx.xx.xx) or an IPv6 address (xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx)

Examples The following example specifies the static primary DNS IP address 60.2.1.20:

```
set netport1 OEMHP_PrimaryDNS=60.2.1.20
```

Secondary DNS

Specifies the static secondary DNS IP address for the iSCSI initiator device.

Syntax `set <target> OEM<vendor>_SecondaryDNS=<ipv4|ipv6 Address>`

Values **<ipv4 | ipv6 Address>**
IPv4 (xx.xx.xx.xx) or an IPv6 address (xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx).

Examples The following example specifies the secondary DNS IP address 60.2.1.20:

```
set netport1 OEMHP_SecondaryDNS=60.2.1.20
```

iSCSI Name

Specifies the name for the iSCSI initiator device.

Syntax `set <target> OEM<vendor>_InitiatorName=<string>`

Values **<string>**
String of up to 128 characters.

Examples The following example specifies the iSCSI name
 “iqn.1995-05.com.qlogic.iscsiboot” for the iSCSI initiator device:

```
set netport1  
OEMHP_InitiatorName=iqn.1995-05.com.qlogic.iscsiboot
```

CHAP ID

Specifies the CHAP identifier for the iSCSI initiator device when CHAP authentication is enabled.

Syntax `set <target> OEM<vendor>_UserName=<string>`

Values **<string>**
String of up to 128 bytes.

Examples This following example specifies “initiatorChapId” as the CHAP identifier:

```
set netport1 OEMHP_UserName=initiatorChapId
```

CHAP Secret

Specifies the CHAP secret for the iSCSI initiator device when CHAP authentication is enabled.

Syntax `set <target> OEM<vendor>_Secret=<string>`

Values **<string>**
String of 12–16 characters.

Examples The following example specifies “secret123456” as the CHAP secret:

```
set netport1 OEMHP_Secret=secret123456
```


Subnet Mask Prefix

Specifies the length of the static IPv6 subnet mask prefix for the iSCSI initiator device. This parameter should not be used with [“Subnet Mask” on page 22](#).

Syntax `set <target> OEM<vendor>_InitiatorNetmaskPrefix=<integer>`

Values **<integer>**
Integer from 0–128

Examples The following example specifies a static IPv6 subnet mask prefix length of 64:
`set netport1 OEMHP_InitiatorNetmaskPrefix=64`

IPv6 NetMask

Specifies the length of the static IPv6 subnet mask prefix for the iSCSI initiator device. This parameter should not be used with [“Subnet Mask” on page 22](#).

Syntax `set <target> OEM<vendor>_IPv6Netmask=<integer>`

Values **<integer>**
Integer from 0–128.

Examples The following example specifies a static IPv6 subnet mask prefix length of 64:
`set netport1 OEMHP_IPv6Netmask=64`

iSCSI First Target Parameters

By default all parameters are initially set to their corresponding values stored in the NVRAM. Any updated parameter value overrides the default value.

Target Mode

Enables or disables the use of first target information to attempt an iSCSI boot connection.

Syntax `set <target> OEM<vendor>_TargetMode=<ENABLED|DISABLED>`

Values **ENABLED**

Use first target information to attempt an iSCSI boot connection.

DISABLED

Do not use first target information to attempt an iSCSI boot connection.

Examples The following example disables the use of first target information to attempt an iSCSI boot connection:

```
set netport1 OEMHP_TargetMode=DISABLED
```

IP Address

Specifies the static IP address (IPv4 or IPv6) for the iSCSI target device.

Syntax `set <target> OEM<vendor>_TargetIp=<ipv4|ipv6 address>`

Values **<ipv4 | ipv6 address>**

IPv4 (xx.xx.xx.xx) or an IPv6 address (xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx)

Examples The following example specifies an IPv4 address of 60.2.1.60:

```
set netport1 OEMHP_TargetIp=60.2.1.60
```

TCP Port

Specifies the static TCP port number of the iSCSI first target device.

Syntax `set <target> OEM<vendor>_TargetPort=<integer>`

Values **<integer>**
Integer from 1–65535.

Examples The following example specifies the static TCP port number 3260:
`set netport1 OEMHP_TargetPort=3260`

Boot LUN

Specifies the static boot LUN for the iSCSI first target device.

Syntax `set <target> OEM<vendor>_TargetLun=<integer>`

Values **<integer>**
Integer from 0–255.

Examples The following example specifies the static boot LUN 0:
`set netport1 OEMHP_TargetLun=0`

iSCSI Name

Specifies the iSCSI name for the first target device.

Syntax `set <target> OEM<vendor>_TargetName1=<string>`

Values **<string>**
String of up to 128 characters.

Examples The following example specifies the iSCSI first target name “iqn.target1”:
`set netport1 OEMHP_TargetName1=iqn.target1`

CHAP ID

Specifies the CHAP identifier for iSCSI first target device.

Syntax `set <target> OEM<vendor>_TargetUserName=<string>`

Values **<string>**
String of up to 128 characters.

Examples The following example specifies the CHAP identifier “Target1ChapId”:

```
set netport1 OEMHP_TargetUserName=Target1ChapId
```

CHAP Secret

Specifies the CHAP secret for the iSCSI first target device. If available, mutual CHAP authentication is used; otherwise, one-way CHAP authentication is used.

Syntax `set <target> OEM<vendor>_TargetSecret=<string>`

Values **<string>**
String of 12–16 characters.

Examples The following example specifies the CHAP secret “target1secret”:

```
set netport1 OEMHP_TargetSecret=target1secret
```

Target Name

Specifies the iSCSI name for the iSCSI first and second target devices. Both target devices will have the same iSCSI name.

Syntax `set <target> OEM<vendor>_TargetName=<string>`

Values **<string>**
String of up to 128 characters.

Examples The following example specifies the name “iqn.target12” for the first and second target devices:

```
set netport1 OEMHP_TargetName=iqn.target12
```

LUN

Specifies the static boot LUN for the iSCSI first and second target devices. Both target devices will have the same static boot LUN.

Syntax `set <target> OEM<vendor>_Lun=<integer>`

Values **<integer>**
Decimal or hexadecimal value from 0–255. Hexadecimal values must begin with “0x”.

Examples The following example specifies 0 as the status boot LUN for the iSCSI first and second target devices:

```
set netport1 OEMHP_Lun=0
```

CHAP Mutual Username

Specifies the CHAP identifier for the iSCSI first and second target devices. Both target devices will have the same CHAP identifier.

Syntax `set <target> OEM<vendor>_MutualUsername=<string>`

Values **<string>**
String of up to 128 characters.

Examples The following example specifies the CHAP identifier “TargetChapId” for the iSCSI first and second target devices:

```
set netport1 OEMHP_MutualUsername=TargetChapId
```

CHAP Mutual Secret

Specifies the CHAP secret for the iSCSI first and second target devices. Both target devices will have the same CHAP secret.

Syntax `set <target> OEM<vendor>_mutualSecret=<string>`

Values **<string>**
String of 12–16 characters.

Examples The following example specifies the CHAP mutual secret “targetsecret” for the iSCSI first and second target devices:

```
set netport1 OEMHP_mutualSecret=targetsecret
```

iSCSI Second Target Parameters

By default all parameters are initially set to their corresponding values stored in the NVRAM. Any updated parameter value will take precedence over the default value.

Target Mode

Enables or disables the use of second target information to attempt an iSCSI boot connection.

Syntax `set <target> OEM<vendor>_TargetMode2=<ENABLED|DISABLED>`

Values **ENABLED**

Enables the use of the second target information to attempt an iSCSI boot connection.

DISABLED

Disables the use of the second target information to attempt an iSCSI boot connection.

Examples The following example disables the use of second target information to attempt an iSCSI boot connection:

```
set netport1 OEMHP_TargetMode2=DISABLED
```

IP Address

Specifies the static IP address (IPv4 or IPv6) for the iSCSI second target device.

Syntax `set <target> OEM<vendor>_TargetIp2=<ipv4|ipv6 address>`

Values **<ipv4 | ipv6 address>**

IPv4 address (xx.xx.xx.xx) or an IPv6 address (xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx).

Examples The following example specifies the IPv4 address 60.2.1.60:

```
set netport1 OEMHP_TargetIp2=60.2.1.60
```

TCP Port

Specifies the static TCP port number for the iSCSI second target device.

Syntax `set <target> OEM<vendor>_TargetPort2=<integer>`

Values **<integer>**
Integer from 1–65535.

Examples The following example specifies TCP port number 3260:
`set netport1 OEMHP_TargetPort2=3260`

Boot LUN

Specifies the static boot LUN for the iSCSI second target device.

Syntax `set <target> OEM<vendor>_TargetLun2=<integer>`

Values **<integer>**
Integer from 0–255.

Examples The following example specifies static boot LUN 0:
`set netport1 OEMHP_TargetLun2=0`

iSCSI Name

Specifies the iSCSI name for the iSCSI second target device.

Syntax `set <target> OEM<vendor>_TargetName2=<string>`

Values **<string>**
String of up to 128 characters.

Examples The following example specifies the iSCSI name “iqn.target2”:
`set netport1 OEMHP_TargetName2=iqn.target2`

CHAP ID

Specifies the CHAP identifier for iSCSI second target device.

Syntax `set <target> OEM<vendor>_TargetUserName2=<string>`

Values **<string>**
String of up to 128 characters.

Examples The following example specifies the CHAP identifier “Target2ChapId”:
`set netport1 OEMHP_TargetUserName2=Target2ChapId`

CHAP Secret

Specifies the CHAP secret for the iSCSI second target device. If available, mutual CHAP authentication is used; otherwise, one-way CHAP authentication is used.

Syntax `set <target> OEM<vendor>_TargetSecret2=<string>`

Values **<string>**
String of 12–16 characters.

Examples The following example specifies the CHAP secret “target2secret”:
`set netport1 OEMHP_TargetSecret2=target2secret`

Secondary Device Information Parameters

All parameters are initially set to their corresponding values stored in the NVRAM. Any updated parameter value takes precedence over the default value.

Secondary Target Portal

Enables or disables the iSCSI boot driver to use a secondary target portal. This parameter enables an iSCSI target device to have two portals with different IP addresses and TCP port numbers.

Syntax `set <target>
OEM<vendor>_UseSecTargetPortal=<ENABLED | DISABLED>`

Values **ENABLED**
Enables a secondary target portal.

DISABLED
Maintains a single target portal.

Examples The following example disables the use of the secondary target portal.

```
set netport1 OEMHP_UseSecTargetPortal=DISABLED
```

Secondary Target Name

Enables or disables the iSCSI boot driver to use of the name of secondary target portal. This parameter enables the iSCSI target device to have two different iSCSI names.

Syntax `set <target> OEM<vendor>_UseSecTargetName=<ENABLED | DISABLED>`

Values **ENABLED**
Enables the use of a secondary target portal name.

DISABLED
Maintains a single iSCSI name.

Examples The following example disables naming for the secondary target portal:

```
set netport1 OEMHP_UseSecTargetName=DISABLED
```

Secondary Device MAC Address

Specifies the MAC address for secondary target device.

Syntax `set <target> OEM<vendor>_SecondaryDevice=<mac address>`

Values **<mac address>**
12-digit hexadecimal MAC address.

Examples The following example specifies the MAC address 001018040102:

```
set netport1 OEMHP_SecondaryDevice=001018040102
```

Ethernet and MBA Parameters

All parameters are initially set to their corresponding values stored in the NVRAM. Any updated parameter value takes precedence over the default value.

Permanent Address

Specifies the Ethernet MAC address for the boot instance (standard CLP string).

Syntax `set <target> OEM<vendor>_PermanentAddress=<mac address>`

Values **<mac address>**
12-digit hexadecimal MAC address. A zero MAC address sets the MAC address to the factory default.

Examples The following example specifies the MAC address 001018123456:

```
set netport1 OEMHP_PermanentAddress=001018123456
```

Boot Protocol

Syntax `set <target>
OEM<vendor>_BootProtocol=<PXE | BOOTP | RPL | ISCSI | None>`

Values Specifies the boot protocol type:

PXE

Pre eXecution Environment

BOOTP

Bootstrap protocol

RPL

Remote program load

ISCSI

Internet small computer system interface

None

Specifies no boot protocol.

Examples The following example specifies the iSCSI boot protocol:

```
set netport1 OEMHP_BootProtocol=ISCSI
```

Banner Timeout

Specifies the time (in seconds) that the MBA Configuration Menu banner appears.

Syntax `set <target> OEM<vendor>_BannerTimeout=<integer>`

Values **<integer>**
Number of seconds.

Examples The following example specifies a banner timeout of five seconds:

```
set netport1 OEMHP_BannerTimeout=5
```

VLAN

Specifies the VLAN ID tag.

Syntax `set <target> OEM<vendor>_Vlan=<integer>`

Values **<integer>**
Integer from 0–4095. A nonzero value enables VLAN support.

Examples The following example specifies a VLAN ID tag of 100:

```
set netport1 OEMHP_Vlan=100
```

Boot Enable

Enables or disables the device as a bootable device.

Syntax `set <target> OEM<vendor>_BootEnable=<ENABLED|DISABLED>`

Values **ENABLED**
Enables the device as a bootable device.

DISABLED
Disables the device as a bootable device.

Examples The following example enables netport1 as a bootable device.

```
set netport1 OEMHP_BootEnable=ENABLED
```

The following example disables netport2 as a bootable device:

```
set netport2 OEMHP_BootEnable=DISABLED
```

The following example enables netport2 as a bootable device.

```
set netport2 OEMHP_BootEnable=ENABLED
```

iSCSI MAC Address

Specifies the iSCSI MAC address.

Syntax `set <target> OEM<vendor>_iScsiAddress=<mac address>`

Values **<mac address>**
12-digit hexadecimal MAC address.

Examples The following example specifies the MAC address for device netport1:

```
set netport1 OEMHP_iScsiAddress=001018123457
```

The following example specifies the MAC address for device netport2:

```
set netport2 OEMHP_PermanentAddress=0010181234567
```

Link Tuning Parameters

Specifies the transmission pre-emphasis matrix coefficients and receiving equalizer matrix coefficients. This parameter is applies only to 10G devices.

Syntax `set <target> OEM<vendor>_LinkTuningParameters=
<TxLane0:TxLane1:TxLane2:TxLane3:RxLane0:RxLane1:RxLane2:
RxLane3>`

Values **TxLane0:TxLane1:TxLane2:TxLane3:RxLane0:RxLane1:RxLane2:RxLane3**
Eight 16-bit hexadecimal values delimited by colons (:).

Examples The following example specifies transmission and receiving coefficients:

```
set netport1  
OEMHP_LinkTuningParameters=1111:990:990:990:15:15:15:15
```

FCoE FIP MAC Address

Specifies the FCoE FIP MAC address.

Syntax `set <target> OEM<vendor>_FCoEFipMACAddress=<mac address>`

Values **<mac address>**
12-digit hexadecimal FCoE FIP MAC address.

Examples The following example specifies the FCoE FIP MAC address 001018123457:

```
set netport1 OEMHP_FCoEFipMACAddress=001018123457
```

FCoE World Wide Port Name

Specifies the FCoE world wide port name.

Syntax `set <target> OEM<vendor>_FCoEWWPN=<wwpn>`

Values **<wwpn>**
16-digit hexadecimal WWPN.

Examples The following example specifies FCoE WWPN 2000001018123457:
`set netport1 OEMHP_FCoEWWPN=2000001018123457`

FCoE World Wide Node Name

Specifies the FCoE world wide node name.

Syntax `set <target> OEM<vendor>_FCoEWWNN=<wwnn>`

Values **<wwnn>**
16-digit hexadecimal WWNN.

Examples The following example specifies FCoE WWNN 1000001018123457:
`set netport1 OEMHP_FCoEWWNN=1000001018123457`

NIC Partitioning Parameters

NIC Partitioning Flow Control

Specifies the NIC partition flow control mode.

Syntax `set <target>`
 `OEM<vendor>_NparFlowControl=<Auto | Tx | Rx | Tx/Rx | None>`

Values **Auto**
 Automatic flow control

Tx
 Transmitting flow control

Rx
 Receiving flow control

Tx/Rx
 Transmitting and receiving flow control

None
 No flow control

Examples The following example specifies the auto NPAR flow control mode:

```
set netport1 OEMHP_NparFlowControl=Auto
```

NIC Partitioning Physical Function Parameters

Specifies the NIC partitioning physical function parameters.

Syntax

```
set <target> OEM<vendor>_NparPF(n)=
<ETHERNET|FCOE|ISCSI>;<bandwidth weight>;
<maximum bandwidth>;<network mac address>;
<iscsi mac address>;<fcoe fip mac address>;<fcoe wwpn>;
<fcoe wwnn>"
```

Values

Parameter values are interpreted by their position in the NparPF(n) parameter string. Each parameter is delimited by semicolons (;). To skip a parameter, substitute an empty string (;). When skipping remaining parameters to the end, you can omit the semicolons also.

(n)

Physical function number (0–7)

<ETHERNET|FCOE|ISCSI>

Physical Function offloaded protocols. For each physical function, only One protocol is allowed to offload. For each port, total maximum two iSCSI protocols or one FCoE protocol are allowed to offload. Here, Ethernet is not counted as an offloaded protocol.

<bandwidth weight>

Percentage of physical port bandwidth allowed for this physical function (0–100). The total bandwidth weight of all physical functions must be 100 or 0. All zeros are default values, which means that all physical functions have the same weight and are, therefore, equivalent to all 25s values.

<maximum bandwidth>

Percentage of physical bandwidth (0–100). The sum of the maximum bandwidths for a physical port can exceed the physical port bandwidth. Therefore, the actual partition bandwidth is determined by the least of bandwidth weight, maximum bandwidth, and physical port bandwidth.

<network mac address>

Network MAC address for this physical function (12-digit hexadecimal address).

<iscsi mac address>

iSCSI MAC address for this physical function, (12-digit hexadecimal address).

<fcoe fip mac address>

FCoE MAC address for this physical function (12-digit hexadecimal address).

<fcoe wwpn>

FCoE world wide port name (16-digit hexadecimal name)

<fcoe wwnn>

FCoE world wide node name (16-digit hexadecimal name)

Examples The following example sets the physical function 2 with the Ethernet attribute and iSCSI offloaded.

```
set netport1 OEMHP_NparPF2="Ethernet|iSCSI"
```

The following example sets values for physical function 2: bandwidth weight = 0, maximum bandwidth = 30, network MAC address = 001018123456, and FCoE WWNN = 2000001018123456.

```
set netport1  
OEMHP_NparPF2=";0;30;001018123456;;;2000001018123456"
```

FCoE Boot Configuration Parameters

FCoE Boot To Target Parameter

Enables or disables the FCoE boot-to-target option.

Syntax `set <target> OEM<vendor>_FCoEBootToTarget=<ENABLED | DISABLED>`

Values **ENABLED**

Enables the FCoE boot-to-target option.

DISABLED

Disables the FCoE boot-to-target option.

Examples The following example enables the FCoE boot-to-target option.

```
set netport1 OEMHP_FCoEBootToTarget=Enabled
```

FCoE Boot Target as First HDD

Enables or disables the FCoE boot target as first HDD.

Syntax `set <target>
OEM<vendor>_FCoEBootTargetAsFirstHDD=<ENABLED | DISABLED>`

Values **ENABLED**

Enables the FCoE boot target as first HDD.

DISABLED

Disables the FCoE boot target as first HDD.

Examples The following example enables the FCoE boot target as first HDD:

```
set netport1 OEMHP_FCoEBootTargetAsFirstHDD=ENABLED
```

FCoE Boot Link up Delay Time

Specifies the FCoE boot linkup delay time in seconds.

Syntax `set <target> OEM<vendor>_FCoEBootLinkUpDelayTime=<integer>`

Values **<integer>**

Integer from 0–255 (seconds).

Examples The following example specifies a delay time of four seconds:

```
set netport1 OEMHP_FCoEBootLinkUpDelayTime=4
```

FCoE Boot LUN Busy Retry Count

Specifies the number of FCoE boot LUN busy retries.

Syntax `set <target> OEM<vendor>_FCoEBootLUNBusyRetryCount=
 <counts in 2s intervals>`

Values **<counts in 2s intervals>**
Integer from 0–60 defining the number of retry counts.

Examples The following example specifies three retries:
`set netport1 OEMHP_FCoEBootLUNBusyRetryCount=3`

FCoE Boot Fabric Discovery Retry Count

Specifies the number of FCoE boot fabric discovery retries.

Syntax `set <target> OEM<vendor>_FCoEBootFabricDiscoveryRetry=
 <integer>`

Values **<integer>**
Integer from 0–8.

Examples The following example specifies four retries:
`set netport1 OEMHP_FCoEBootFabricDiscoveryRetry=4`

FCoE Boot HBA Boot Mode

Enables or disables the FCoE boot HBA boot mode.

Syntax `set <target>
 OEM<vendor>_FCoEBootHbaBootMode=<ENABLED | DISABLED>`

Values **ENABLED**
Enables the FCoE boot HBA boot mode.

DISABLED
Disables the FCoE boot HBA boot mode.

Examples The following example enables the FCoE boot HBA boot mode:
`set netport1 OEMHP_FCoEBootHbaBootMode=Enabled`

FCoE Boot Target Information

Specifies the FCoE target information.

Syntax

```
set <target> OEM<vendor>_FCoEBootTarget(n)=  
"<ENABLED|DISABLED>;<wwpn>;<bootlun#>"
```

Values

The parameters are interpreted by their position in the FCoEBootTarget parameter string. Each parameter is delimited by semicolons (;). To skip a parameter, substitute an empty string (;;). When skipping remaining parameters to the end, you can omit the semicolons also.

(n)

Target device index number (1–8).

ENABLED | DISABLED

Enables or disables the FCoE boot target.

wwpn

FCoE boot target WWPN (16-digit hexadecimal).

bootlun#

LUN number for the FCoE boot target (0–255).

Examples

The following example enables the FCoE boot target, specifies WWPN=2000001018123456, and specifies bootlun#=2.

```
set netport1  
OEMHP_FCoEBootTarget2="ENABLED;2000001018123456;2"
```

Device Configuration Parameter

MultiFunction Mode

Specifies the device virtualization mode. After specifying this parameter for one port, the Exit command applies the same value to all ports on the device.

Syntax `set <target>`
 `OEM<vendor>_MultifunctionMode="<MF | SF | SPIO4 | NPAR | NPAR-SD>"`

Values **MF**

SF

SPIO4

NPAR

NPAR-SD

Examples The following example specifies the NPAR mode:

```
set netport1 OEMHP_MultifunctionMode=NPAR
```



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