OneCommand™ Manager Command Line Interface

Version 5.0

User Manual

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Introduction

The OneCommand™ Manager application Command Line Interface (CLI) is a comprehensive management utility for Emulex host bus adapters (HBAs) and converged network adapters (CNAs) that provides support for commonly used commands without requiring installation of the OneCommand Manager application Graphical User Interface (GUI). The OneCommand Manager application CLI is a separate application with core driver kits that do not include the OneCommand Manager application GUI. The OneCommand Manager CLI console application name is hbacmd and can be installed on Windows, Solaris, Linux and versions of VMware ESX Server that include a Console Operating System (COS). A single operation is performed by entering'hbacmd' followed by the command at the command line. For syntax information and details on using the OneCommand Manager application CLI, see "Using the CLI Client" on page 12.

Platforms that are supported with the OneCommand Manager application CLI are detailed in Table 1.

Table 1. OneCommand Manager Application Command Line Interface Supported Platforms

Driver	Architecture	Operating System
Storport Miniport Driver	Intel x86, x64, and IA64 **Note:** Intel IA64 supported for Fibre Channel adapters only.	Windows Server 2003 Service Pack 2 or later Windows Server 2008 Windows Server 2008 R2
LPFC 7.4.x Driver	Intel x86, EM64T and AMD64	VMware ESX Server 3.5
LPFC 8.2.0.x.x vmw Driver	Intel EM64T and AMD64	VMware ESX Server 4.0
LPFC 8.2.0.33.3p Open Source Driver for Red Hat (RHEL) 5.3 and later, SUSE Linux Enterprise Server (SLES) 10-SP2 and later	Intel x86, EM64T, AMD64, PPC64 and IA 64	RHEL 5.3 and later, and SUSE Linux Enterprise Server 10-SP2 and later
LPFC 8.2.8.x Open Source Driver for SUSE Linux Enterprise Server 11 GM	Intel x86, EM64T, AMD64, PPC64 and IA 64	SUSE Linux Enterprise Server 11 GM
Solaris SFS 2.50 Driver	Intel x86, EM64T, AMD64 and Sun SPARC	Solaris 10 and Solaris 11

Note: OneConnect adapters are not supported for IA64, PPC64, and Solaris platforms.

Installing the OneCommand Manager Application CLI

In Windows

To install the OneCommand Manager application CLI, run the installation .exe file for a core Windows driver kit that does not include the OneCommand Manager application GUI:

- elxocmcore-windows-<*kit version*>.exe

<*kit version*> represents the complete version. For example: elxocmcore-windows-5.0.2.14-1.exe

In a new VMware ESX Server

To install the OneCommand Manager application CLI on a new system, install the specific driver for your VMware version.

Prerequisites

- The LPFC driver must be loaded.

Note: In-band management (FC based management) is not supported on VMware ESX Server 3.5. Use out-of band management (TCP/IP based management) to remotely manage adapters on ESX server sytems.

For VMware ESX Server 3.5, the firewall on the ESX Server must be opened to manage systems remotely using TCP/IP-based management. To enable TCP port #23333, run the following commands:

```
esxcfg-firewall --openPort 23333,tcp,in,OneCommand
esxcfg-firewall --openPort 23333,tcp,out,OneCommand
```

To verify that the correct port is open, run the following command:

```
esxcfg-firewall -q
```

The TCP port number can be changed. If it is not changed, the default is 23333.

Refer to the VMware Server Configuration Guide for more details on how to configure the ESX firewall.

Procedures

To install the OneCommand Manager application CLI:

1. Log in as ‘root’.
2. Copy the elxocmcore-esxNN-<*kit version*>.<architecture>.rpm file to a directory on the install machine.
3. CD to the directory to which you copied the rpm file.
4. Install the rpm file. Type:

   `rpm -U elxocmcore-esxNN-<kit version>.<architecture>.rpm`

Where NN is 35 and <architecture> is i386 for an ESX 3.5 system or NN is 40 and <architecture> is x86_64 for an ESX 4.0 system. The OneCommand Manager application CLI is located in /usr/sbin/hbanyware.

In a VMware ESX Server with an Existing HBAnyware CLI Kit Installed

To install the OneCommand Manager application CLI on a VMware system with an existing HBAnyware CLI installed:

1. Install the rpm file by entering the following command all on one line:

   `# rpm -U elxocmcore-esxNN-<kit version>.<architecture>.rpm`

   Where NN is 35 and <architecture> is i386 for an ESX 3.5 system or NN is 40 and <architecture> is x86_64 for an ESX 4.0 system.

Uninstalling Older HBAnyware Kits on VMware

To uninstall an older HBAnyware Kit on VMware:

1. Log in as 'root'.
2. Type: `rpm -qa | grep elx` and locate either of the following rpm files:

   `elxvmwarecorekit-<kit version>`

   Or

   `elxocmcore-esxNN-<kit version>`

   Where NN is 35 for an ESX 3.5 system or 40 for an ESX 4.0 system.
3. Type:

   `rpm -e elxvmwarecorekit-<kit version>`

   Or

   `rpm -e elxocmcore-esxNN-<kit version>`

   Where NN is 35 for an ESX 3.5 system or 40 for an ESX 4.0 system.

In a New Linux System

Prerequisites

For existing systems the following must be installed before installing the OneCommand Manager application CLI:

On LP21000 series adapters and OneConnect FCoE adapters

- Linux driver version 8.2.0.33.3p or later (For RHEL5 and SLES10 operating systems.)
- Linux driver version 8.2.8.x (For SLES11 operating systems.)

On OneConnect iSCSI adapters

- be2iscsi driver

On OneConnect NIC adapters

- be2net driver

  The be2net driver must also be installed if the adapter personality is iSCSI-NIC or FCoE-NIC.

Use the latest or matching driver from the Emulex Web site.

For new systems, the specific driver rpm file for your Linux version must be installed.

Note: On RHEL 5.3 and RHEL 5.4, the OneCommand Core rpm file requires Libnl. This library is not installed by default, but can be obtained from the OS distribution media.

- For i386 RHEL 5.3 and RHEL 5.4, use the 32bit libnl library.
- For x86_64 RHEL 5.3 and RHEL 5.4, use the 64bit libnl library.
- For ia64 RHEL 5.3 and RHEL 5.4, use the 64bit libnl library.
- For PPC RHEL 5.3 and RHEL 5.4, use the 32bit libnl library.

Procedures

To install the OneCommand Manager application CLI:

1. Copy the applications kit tar file to a directory on the installation machine.
2. Change (use cd command) to the directory to which you copied the tar file.
3. Untar the file.

   `tar zxvf elxocmcore-<supported_os>-<app_ver>-<rel>.tgz`

4. Change (use cd command) to the core kit directory created in step 3.

   `cd elxocmcore-<supported_os>-<app_ver>-<rel>`

5. Run the install.sh script.

   `./install.sh`

   Note: The core kit consists of 2 rpm files for each supported architecture and each supported version of Linux:
   1. elxocmlibhbaapi-*.rpm
   2. elxocmcore-*.rpm

In a Linux System with an Existing HBAnyware CLI Kit Installed

Note: On RHEL 5.4 installations, the elxocmlibhbaapi-*.rpm conflicts with the Red Hat 5.4 libhbaapi-devel rpm. Therefore, the core kit install.sh script installs the elxocmlibhbaapi only if the Red Hat libhbaapi-devel rpm is NOT installed. Currently there is no conflict on SLES 10 and 11 platforms and the elxocmlibhbaapi and elxocmcore rpms are always installed.

Note: The OneCommand Manager application core kit cannot be installed if a previous version of HBAnyware is installed.

You have two options when installing the OneCommand Manager application CLI on a Linux system:

- Upgrade - preserve existing settings
- Clean install - overwrite existing settings

To upgrade:

1. You must install the current core kit as detailed in *"In a New Linux System" on page 3.*

   The rpm file handles the configuration file upgrade.

The install script executes an rpm upgrade (rpm -U *.rpm) to upgrade the installed version of the core kit to the current version.

Note: There is no upgrade path from an HBAnyware 4.x or 3.x core kit to a OneCommand Manager application 5.0 core kit. You must un-install previous versions of the HBAnyware utility before installing a OneCommand Manager application core kit. For information on uninstalling older versions of HBAnyware, see “Uninstalling Older HBAnyware Kits on Linux” on page 5.

To perform a clean install:

1. Uninstall the existing OneCommand Manager application CLI using the uninstall script included in the tar file or in /usr/sbin/hbanyware/scripts directory.

   Note: If an HBAnyware CLI or enterprise kit is installed, follow the procedure for “Uninstalling Older HBAnyware Kits on Linux” on page 5.

   Note: Your configuration files are backed up by rpm with a .rpmsave extension.

2. Install the specific rpm file for your driver for Linux version. For information on installing the rpm file, see “In a New Linux System” on page 3.

Uninstalling Older HBAnyware Kits on Linux

Uninstalling an older HBAnyware core kit:

1. Run the following command to remove the core kit.

   ```
   rpm -e elxlinuxcorekit
   ```

Uninstalling an older HBAnyware enterprise kit:

1. Run the uninstall script located in /usr/sbin/hbanyware/scripts to remove the enterprise kit.

   Or

   Run the uninstall script located in the tar file to remove the enterprise kit.

   If the HBAnyware Security Configurator is installed, it must be uninstalled before uninstalling the HBAnyware utility. You must run the uninstall script that shipped with the version of HBAnyware Security Configurator that you want to remove. Proceed to step 2. If the Security Configurator is not installed, proceed to step 3.

2. If the HBAnyware Security Configurator is installed, follow these steps:
   a. Log on as ‘root’.
   b. Change to the directory to which you copied the tar file.
   c. Extract the tar file using the tar -xvf command.
   d. Change to the newly created directory.
   e. Run the uninstall script with the ssc parameter specified. Type:

      ```
      ./uninstall ssc
      ```

3. Uninstall the HBAnyware utility and the Application Helper Module:
    a. Log on as ‘root’.
    b. Change to the directory to which you copied the tar file.
    c. Extract the tar file using the tar -xvf command.
    d. Change to the newly created directory.
    e. Uninstall any previously installed versions. Type:
    `./uninstall`

In Solaris SFS

Prerequisites

- The Solaris SFS 2.50 driver must be installed.

Procedures

To install the OneCommand Manager application CLI:

1. Copy the OneCommand Manager application core kit to a temporary directory on the system.
2. Untar the core kit. Type:
    `tar xvf elxocmcore-<kit version>.tar`
3. Change to the newly created elxocmcore-<*kit version*> directory:
    `cd ./elxocmcore-<kit version>/`
4. Run the install script and follow the instructions.
    `./install`
    If the HBAnyware utility, the OneCommand Manager application core kit, the OneCommand Manager application enterprise kit, or the Solaris SFS driver utilities are already present on the system, the install script attempts to first remove them.

Uninstalling the OneCommand Manager Application CLI

In VMware ESX Server

To uninstall the OneCommand Manager application CLI on VMware:

1. Log in as ‘root’.
2. Depending on the ESX server system type: `rpm -e elxocmcore-esx35`
    Or
    `rpm -e elxocmcore-esx40`

Note: In VMware ESX 4.0, the OneCommand Manager Application CLI RPM replaces the Emulex CIM provider that ships on the ESX 4.0 DVD and is installed as part of the initial system configuration process. If the RPM is removed from a system with ESX 4.0 Update 1, the "--nodeps" option must be passed to the command line:

```
rpm -e --nodeps elxocmcore-esx40
```

To complete the removal of the OneCommand Manager Application CLI RPM, install the Emulex CIM provider RPM that is included on the ESX 4.0 DVD. The correct file for a system with ESX 4.0 is:

```
rpm -ihv emulex.rpm
```

The correct file for a system with ESX 4.0 Update 1 is:

```
rpm -ihv emulex-cim-provider-400.2.0.27.1-164009.rpm
```

In Linux

To uninstall the OneCommand Manager application CLI on Linux:

1. Run the uninstall script uninstall_ocmanager.sh located in /usr/sbin/hbanyware/scripts.

   Or

   Run the uninstall script uninstall.sh located in the installation tar file.

Upgrading from the OneCommand Manager Application CLI to the Full-Featured OneCommand Manager Application Enterprise Kit

Note: An upgrade can be performed only if the version of the OneCommand Manager application enterprise kit is the same or later than the OneCommand Manager application CLI version. You cannot upgrade a OneCommand Manager application CLI with a previous version of the OneCommand Manager application enterprise kit.

In Windows

To upgrade from the OneCommand Manager application CLI to the full-featured OneCommand Manager application enterprise kit:

1. From the desktop, run the elxocm-windows-<*kit version*>.exe file that contains the full application kit.

   Running this executable file removes the OneCommand Manager application CLI and installs a full-featured version of the OneCommand Manager application that includes the CLI and the GUI.

In Linux

To upgrade from the OneCommand Manager application CLI to the full-featured OneCommand Manager application enterprise kit:

1. Run the install.sh script of the OneCommand Manager application enterprise kit.

   The install script executes an rpm upgrade (rpm -U *.rpm) to upgrade the installed core kit to an enterprise kit.

In Solaris SFS

To upgrade from the OneCommand Manager application CLI to the full-featured OneCommand Manager application enterprise kit:

1. Download the OneCommand Manager application enterprise kit to a temporary directory on your system.
2. Untar the OneCommand Manager application enterprise kit tar file:

   `tar xvf elxocm-<kit version>.tar`
3. Change to the newly created elxocm-<*kit version*> directory:

   `cd ./elxocm-<kit version>/`
4. Run the install script and follow the instructions.

   `./install`

In VMware ESX Server

The full-featured OneCommand Manager application enterprise kit is not supported for VMware ESX Server.

Using the OneCommand Manager Application Command-Line Interface

The Command Line Interface (CLI) Client component of the OneCommand Manager application provides access to the capabilities of the Remote Management library from a console command prompt. This component is intended for use in scripted operations from within shell scripts or batch files. The CLI Client is a console application named hbacmd. Each time you run this application from the command line, a single operation is performed.

The first parameter of this command is the requested operation. When the specified operation is completed, the command prompt is displayed. Most operations retrieve information about an entity on the storage area network (SAN) and show that information on the console.

Most of the CLI Client commands require one or more additional parameters that specify the nature of the command. For FC ports the World Wide Port Name (WWPN) of the adapter must be specified.

For example, run the following command to display the port attributes for the adapter with the specified WWPN:

```
hbacmd portattrib 10:00:00:00:c9:20:20:20
```

For iSCSI and NIC ports the MAC address must be specified.

For example, run the following command to set the target properties for the CNA port with the specified MAC address:

```
hbacmd SetTargetProperties 00-11-22-33-44-55 iscsitarget 1
```

The command sets the Extended timeout value to 1.

The OneCommand Manager application CLI can be run in TCP/IP mode by making the first argument h=<*host*>. For example:

```
hbacmd h=cp-hp5670 listhbas
hbacmd h=138.239.91.121 listhbas
```

Note: In-band management (FC based management) is not supported on VMware ESX Server 3.5. Use out-of band management (TCP/IP based management) to remotely manage adapters on ESX server sytems.

For VMware ESX Server 3.5, the firewall on the ESX Server must be opened to manage systems remotely using TCP/IP-based management. To enable TCP port #23333, run the following commands:

```
esxcfg-firewall --openPort 23333,tcp,in,OneCommand
esxcfg-firewall --openPort 23333,tcp,out,OneCommand
```

To verify that the correct port is open, run the following command:

```
esxcfg-firewall -q
```

The TCP port number can be changed. If it is not changed, the default is 23333.

Refer to the VMware Server Configuration Guide for more details on how to configure the ESX firewall.

The OneCommand Manager application CLI can manage Emulex adapters in systems configured to support the Common Information Model (CIM), such as systems with VMware ESX 3i installed.

Use the following syntax for issuing CIM-based commands:

```
A> hbacmd <h=ip [: port]> <m=CIM> [u=userid] [p=password]
[n=namespace] <cmd>
B> hbacmd <h=ip [: port]> <m=CIM> <cmd>
```

Before issuing the syntax B, do one of the following:

- Add the host IP with CIM credentials using the AddHost command.

For example:

```
hbacmd <m=CIM> [u=userid] [p=password] [n=namespace] AddHost <ip>
```

Or

- Set the default CIM credentials using the SetCimCred command.

```
hbacmd SetCimCred <userid> <password> <namespace> <port>
```

Note: If the command is specified with the discovery method "m=CIM" and the CIM credentials (userid, password, or namespace) are not specified, then the default value for the missing CIM credential is obtained in the following order: (a) The information entered using the addhost command is looked up. (b) If no values exist then the information entered using the setcimcred command is used. (c) If no values exist then the following credentials userid = root, password = root, namespace = elxhbacmpi/cimv2 and portnumber = 5988 are used.

Note: The OneCommand Manager application CLI running on VMware ESX 3.5 and VMware ESX 4.0 COS does not support management of adapters using the CIM interface.

For example, run the following command to display a list of adapters managed for a specified host using CIM interface:

In Windows:

```
C:\Program Files\Emulex\Util\HBAnyware>hbacmd h=10.192.113.128 m=cim
u=root p=root n=elxhbacmpi/cimv2 listhba
```

In Linux:

```
/usr/sbin/hbanyware/hbacmd h=10.192.113.128 m=cim u=root p=root
n=elxhbacmpi/cimv2 listhba
```

In Solaris:

```
# /opt/HBAnyware/hbacmd h=10.192.113.128 m=cim u=root p=root
n=elxhbacmpi/cimv2 listhba
```

The output displayed is similar to the following:

```
Manageable HBA List

Port WWN   : 10:00:00:00:c9:6b:62:2b
Node WWN   : 20:00:00:00:c9:6b:62:2b
Fabric Name: 00:00:00:00:00:00:00:00
Flags      : 00000000
Host Name  : eng.ma.emulex.com
Mfg        : Emulex Corporation
Serial No. : BG73539764
Port Number: n/a
Mode       : Initiator
Discovery  : CIM

Port WWN   : 10:00:00:00:c9:6b:62:59
Node WWN   : 20:00:00:00:c9:6b:62:59
Fabric Name: 00:00:00:00:00:00:00:00
Flags      : 00000000
Host Name  : eng.ma.emulex.com
Mfg        : Emulex Corporation
Serial No. : BG73539764
Port Number: n/a
Mode       : Initiator
Discovery  : CIM

C:\Program Files\Emulex\Util\HBAnyware>hbacmd h=10.192.113.128 m=cim u=root
p=root n=elxhbacmpi/cimv2 portattrib 10:00:00:00:c9:6b:62:2b

Port Attributes for 10:00:00:00:c9:6b:62:2b

Node WWN            : 20 00 00 00 c9 6b 62 2b
Port WWN            : 10 00 00 00 c9 6b 62 2b
Port Symname        :
Port FCID           : 0000
Port Type           : Fabric
Port State          : Unknown
Port Service Type   : 12
Port Supported FC4  : 00 00 01 20 00 00 00 01
                      00 00 00 00 00 00 00 00
                      00 00 00 00 00 00 00 00
                      00 00 00 00 00 00 00 00
Port Active FC4     : 00 00 01 00 00 00 00 01
                      00 00 00 00 00 00 00 00
                      00 00 00 00 00 00 00 00
                      00 00 00 00 00 00 00 00
Port Supported Speed: 1 2 4 GBit/sec.
Port Speed          : 4 GBit/sec.
Max Frame Size      : 2048
OS Device Name      :
Num Discovered Ports: 0
Fabric Name         : 00 00 00 00 00 00 00 00
```

- If the parameter 'm=CIM' is specified, then the OneCommand Manager application CLI uses the CIM interface to talk to the CIM server running on the ESX server to get the management information.
- If the parameter 'm=CIM' is not specified, then the OneCommand Manager application CLI uses the RM interface to talk to the RM server to get the management information.

Using the CLI Client

Syntax Rules

The syntax rules for hbacmd are as follows:

- All CLI Client commands and their arguments are not case sensitive.
- The requested operation must contain at least three characters, or as many as needed to distinguish it from any other operation.
- Whenever a WWPN is specified, individual fields are separated by colons (:) or spaces ( ). When using space separators, the entire WWPN must be enclosed in quotes (").
- When a MAC address is specified the fields are separated by a dash (-).

The CLI Client Command Reference

CLI Client commands are supported for Windows, Solaris SFS and Linux. Only CLI Client commands that are dynamic are supported for VMware ESX Server.

Note: The PersistentBinding, SetPersistentBinding, RemovePersistentBinding, RemoveAllPersistentBinding, BindingCapabilities, BindingSupport and SetBindingSupport commands are not supported for Linux or Solaris.

Note: The BindingCapabilities, BindingSupport, GetLunList, GetLunMaskbyHBA, GetLunMaskbyTarget, PersistentBinding, RescanLuns, RemoveAllPersistentBinding, RemovePersistentBinding, SetBindingSupport, SetLunMask and SetPersistentBinding commands are not supported for VMware ESX.

Note: The following hbacmd commands are supported using the CIM interface: HbaAttributes, PortAttributes, PortStatistics, ServerAttributes, GetDriverParam, GetDriverParamsGlobal, SetDriverParam, Download, AddHost, RemoveHost, Listhba, SetCimCred, and GetCimCred.
The following additional commands are supported to manage the adapters on the ESX4i platform with SMI-S v2.x.x provider: ChangeWWN, GetWWNCap, ReadWWN, RestoreWWN, CEE Download, GetCEEParams, SetCEEParam, GetXcvrData, LoadList, Reset and GetVPD.
All other hbacmd commands return an error message “This command is currently not available via the CIM interface”. Within this supported command list, there are some entries that are not available in the SMI-S provider v1.2.1 and v2.x.x. For those entries, hbacmd shows “Not Available”. For details on parameters not supported for specific commands, see Table 2 on page 13.
If you are running older adapter firmware or managing a remote host running HBAnyware version 4.x, the PG 1 and PG 2 settings and all bandwidth settings are disabled and the Enable Host Ethernet Priority Flow Control (PFC) Linkage is disabled.

Note: The following hbacmd commands are supported for managing target mode ports: ListHBAs, Download, Reset, GetVPD, GetXcvrData, HbaAttributes, PortAttributes, ServerAttributes, GetPortStatistics, GetDriverParams, GetDriverParamsGlobal, SetDriverParam, SetDriverParamDefaults, SaveConfig, DriverConfig, ExportSanInfo, GetCEEParams, SetCEEParam, CEEDownload, SetPGBW, GetPGInfo, SetCEEPGBW, GetFIPParams, SetFIPParam, GetFCFInfo, DeleteDumpFiles, GetDumpDirectory,GetRetentionCount,SetRetentionCount,and SetPortEnabled. All other hbacmd commands return the error message: "`Not Supported for Target Mode Adapters`".

Parameters Not Supported by CIM Interface

Note: X indicates the attribute is not available on the particular OS. Blank table cells indicate that the attribute is available.

Table 2. Parameters Not Available

Command	Attribute	Not Available on ESX 3i U2 & U3 via CIM Provider v 1.2.1.x	Not Available on ESX 4 via CIM Provider v 2.0.22.1 or later	Not Available on ESX 3i U4 via CIM Provider v 2.0.9.x
listhbas	Port WWN			
	Node WWN			
	Fabric Name	X		
	Flags	X		
	Host Name			
	Mfg			
	Serial No.			
	Port Number			
	Mode			
	Discovery			
hbaattributes	Host Name			
	Manufacturer			
	Serial Number			
	Model			
	Model Desc			
	Node WWN			
	Node Symname			
	HW Version			

Table 2. Parameters Not Available (Continued)

Command	Attribute	Not Available on ESX 3i U2 & U3 via CIM Provider v 1.2.1.x	Not Available on ESX 4 via CIM Provider v 2.0.22.1 or later	Not Available on ESX 3i U4 via CIM Provider v 2.0.9.x
	Opt ROM Version	X	X	X
	FW Version			
	Vendor Spec ID	X		
	Number of Ports			
	Driver Name			
	Device ID	X		
	HBA Type			
	Operational FW	X	X	X
	SLI1 FW	X		
	SLI2 FW	X		
	SLI3 FW	X		
	IEEE Address	X		
	Boot Code	X		
	Driver Version			
	Kernel Version	X		
	HBA Temperature			
portattributes	Node WWN			
	Port WWN			
	Port Symname			
	Port FCID	X		
	Port Type			
	Port State			
	Port Service Type			
	Port Supported FC4			
	Port Active FC4			
	Port Supported Speed			
	Port Speed			

Table 2. Parameters Not Available (Continued)

Command	Attribute	Not Available on ESX 3i U2 & U3 via CIM Provider v 1.2.1.x	Not Available on ESX 4 via CIM Provider v 2.0.22.1 or later	Not Available on ESX 3i U4 via CIM Provider v 2.0.9.x
	Max Frame Size			
	OS Device Name	X		
	Num Discovered Ports	X		
	Fabric Name	X		
serverattributes	Host Name			
	FW Resource Path	X	X	X
	DP Resource Path	X	X	X
	HBAnyware Server Version			
	Host OS Version	X		
portstatistics	Exchange Count	X		
	Responder Exchange Count	X		
	Tx Seq Count	X		
	Rx Seq Count	X		
	Tx Frame Count			
	Rx Frame Count			
	Tx Word Count			
	Rx Word Count			
	Tx KB Count			
	Rx KB Count			
	LIP Count			
	NOS Count			
	Error Frame Count			
	Dumped Frame Count			

Table 2. Parameters Not Available (Continued)

Command	Attribute	Not Available on ESX 3i U2 & U3 via CIM Provider v 1.2.1.x	Not Available on ESX 4 via CIM Provider v 2.0.22.1 or later	Not Available on ESX 3i U4 via CIM Provider v 2.0.9.x
	Link Failure Count			
	Loss of Sync Count			
	Loss of Signal Count			
	Prim Seq Prot Err Count			
	Invalid Tx Word Count			
	Invalid Rx Frame CRC Cnt			
	Link Transition Count	X		
	Active RPI Count	X		
	Active XRI Count	X		
	Rx Port Busy Count			
	Rx Fabric Busy Count			
	Primary Sequence Timeout	X		
	Elastic Buffer Overrun	X		
	Arbitration Timeout	X		
GetVPD		X		
GetxcvrData		X		
LoadList		X		
SetDriverParam[a]				
WWN Management		X		

a. Temporary driver parameters are supported in ESX 3i U2, U3, and U4.
Driver Parameters that are set temporarily and globally (using the "G" and "T" flags) must be read using the "GetDriverParams" hbacmd command to view the current value of the parameter. The "GetDriverParamsGlobal" hbacmd command shows only permanent driver parameter values. If temporary, global values have been set for one or more driver parameters, the "SaveConfig" hbacmd command must be run with the "N" flag to force the driver parameter values for the specified adapter to be saved. Inaccurate values may be saved if the "G" flag is used for this command.

Note: For the LoadList command, the attribute Program ID is displayed as “Not Available”, on ESX 3i U4 via CIM Provider v 2.0.9.x.

Read-Only Mode

The OneCommand Manager application CLI does not allow the execution of certain commands when the OneCommand Manager application is configured for read-only mode. An error message is displayed if such a command is attempted: `Error: Read-only management mode is currently set on this host. The requested command is not permitted in this mode.`

Help Commands

These “help” commands list the various levels of help for the hbacmd console application.

Help

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd Help

Description: Shows a list of all help commands for the OneCommand Manager application CLI Client.

Parameters: None

Help Boot

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd Help Boot

Description: Shows a list of all help commands for the boot commands.

Parameters: None

Help BootParams

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd Help BootParams <Parameter Name>

Description: Shows a summary of parameter settings for the adapter and the boot device. Several parameters have detailed help available.

Parameters:

Parameter Name (optional) - Specify one of the following boot parameters: AutoScan, BootTargetScan, DevicePathSelection, LinkSpeed, PlogiRetryTimer, or BootParams Topology.

Help GetBootParams

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd Help GetBootParams

Description: Shows help for the GetBootParams command.

Parameters:

WWPN - World Wide Port Name of the object adapter.

Type - None

Help SetBootParam

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd Help SetBootParam

Description: Shows help for the SetBootParam command.

Parameters: None

Attributes Commands

HBAAttributes

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd HBAAttributes <WWPN | MAC>

Description: Shows a list of all adapter attributes.

Parameters:

WWPN - World Wide Port Name of the adapter whose attributes you want to view.

MAC - MAC address of the NIC or iSCSI port of the adapter whose attributes you want to view.

PortAttributes

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd PortAttributes <WWPN | MAC>

Description: Shows a list of all port attributes for the adapter.

Parameters:

WWPN - World Wide Port Name of the port whose port attributes you want to view.

MAC - MAC address of the NIC or iSCSI port whose port attributes you want to view.

PortStatistics

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd PortStatistics <WWPN>

Description: Shows all port statistics for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose port statistics you want to view.

ServerAttributes

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd ServerAttributes <WWPN | MAC>

Description: Shows a list of server attributes for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose server attributes you want to view.

MAC - MAC address of the NIC or iSCSI port of the adapter whose server attributes you want to view.

SetPortEnabled

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetPortEnabled <WWPN | MAC> <PortEnable>

Description: Enable or disable the FC or CNA port specified by the WWPN or MAC address.

Parameters:

WWPN - World Wide Port Name of the adapter whose port you want to enable or disable.

MAC - MAC address of the NIC or iSCSI port you want to enable or disable.

PortEnable - PortEnable "0" for Disable or "1" for Enable.

Note: Ensure that all I/O on the port is stopped before disabling the port.

Note: When the SetPortEnabled command is used to disable an FC port, the adapter must be reset to activate the new setting. Only OneConnect adapters do not require a reset when the adapter port is enabled or disabled.

Authentication Commands

AuthConfigList

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd AuthConfigList <WWPN>

Description: Returns the list of WWPNs that have an authentication connection configuration with the specified adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose configuration data you want to retrieve.

DeleteAuthConfig

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd DeleteAuthConfig <WWPN1> <WWPN2> <PasswordType> <Password>

Description: Deletes the authentication configuration on the adapter.

Parameters:

WWPN1 - World Wide Port Name of the adapter whose authentication configuration you want to delete.

WWPN2 - Must be "ff:ff:ff:ff:ff:ff:ff:ff" for switch or actual WWPN for target.

PasswordType - 1 = ASCII, 2 = Hex (binary), 3 = Password not yet defined.

Password - Current password value.

GetAuthConfig

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd GetAuthConfig <WWPN1> <WWPN2>

Description: Retrieves the authentication configuration for the adapter.

Parameters:

WWPN1 - World Wide Port Name of the adapter whose configuration data you want to retrieve.

WWPN2 - Must be "ff:ff:ff:ff:ff:ff:ff:ff" for switch or actual WWPN for target.

GetAuthStatus

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd GetAuthStatus <WWPN1> <WWPN2>

Description: Returns the current status for the authentication connection specified by WWPN 1 and 2 (adapter and the switch). Includes the current authentication state (connected, failed, ...). Currently authenticated connections specify the hash algorithm and DH group used in the DHCHAP associated with this connection. Failed status includes the failure reason.

Parameters:

WWPN1 - World Wide Port Name of the adapter whose status you want to check.

WWPN2 - Must be "ff:ff:ff:ff:ff:ff:ff:ff" for switch or actual WWPN for target.

InitiateAuth

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd InitiateAuth <WWPN1> <WWPN2>

Description: Initiates the authentication configuration on the adapter.

Parameters:

WWPN1 - World Wide Port Name of the adapter whose authentication configuration you want to initiate.

WWPN2 - Must be "ff:ff:ff:ff:ff:ff:ff:ff" for switch or actual WWPN for target.

SetAuthConfig

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd SetAuthConfig <WWPN1> <WWPN2> <PasswordType> <Password> <Parameter> <Value>

Description: Sets the authentication configuration for the adapter.

Parameters:

WWPN1 - World Wide Port Name of the adapter whose authentication configuration you want to set.

WWPN2 - Must be "ff:ff:ff:ff:ff:ff:ff:ff" for switch or actual WWPN for target.

PasswordType - 1 = ASCII, 2 = Hex (binary), 3 = Password not yet defined.

Password - Current password value.

Parameter - Parameters include Mode, Timeout, Bi-directional, Hash-priority, DH-priority, Re-authentication, and Re-authentication-interval.

Value - Parameter-specific value: Mode = <disabled, enabled, passive>, Timeout = time in seconds, Bi-directional = <disabled, enabled>, Hash-priority = <md5, sha1> (md5 = first md5, then sha1; sha1 = first sha1, then md5), DH-priority = <1,2,3,4,5>, any combination up to 5 digits, Re-authentication = <disabled, enabled>, Re-authentication-interval = < 0, 10 - 3600>.

SetPassword

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd SetPassword <WWPN1> <WWPN2> <Flag> <Cpt> <Cpw> <Npt> <Npw>

Description: Sets the password for the adapter.

Parameters:

WWPN1 - World Wide Port Name of the adapter for which you want to set a password.

WWPN2 - Must be "ff:ff:ff:ff:ff:ff:ff:ff" for switch or actual WWPN for target.

Flag - 1 = Local (password used by adapter when adapter authenticates to the switch), 2 = Remote (password used by adapter when switch authenticates to the adapter).

Cpt - Current password type is 1 = ASCII or 2 = Hex (binary), 3 = Password not yet defined.

Cpw - Current password value

Npt - New password type is 1 = ASCII or 2 = Hex (binary).

Npw - New password value.

Boot Commands

<…> = Required, […] = Optional

EnableBootCode

Note: Not supported for OneConnect adapters. The boot code is always enabled on OneConnect adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd EnableBootCode <WWPN | MAC> <Flag>

Description: Enables or disables the boot code on the FC adapter or PXE BIOS of the NIC on the CNA adapter. If the boot code is disabled on the FC adapter, the adapter will not boot from the SAN, regardless of the value for the EnableBootFromSan boot param. If the boot code is enabled on the FC adapter, the adapter will boot from the SAN if the EnableBootFromSan parameter is also enabled. If the PXE BIOS is disabled on the CNA adapter's NIC, it will prevent booting from the NIC. If the PXE BIOS is enabled on the CNA adapter's NIC, it will allow booting from the NIC.

Parameters:

WWPN - World Wide Port Name of object adapters.

MAC - MAC address of the NIC port of the CNA adapter.

Flag - E = Enable the boot code, D = Disable the boot code.

GetBootParams

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd GetBootParams <WWPN> <Type>

Description: Shows the boot parameters. If any arguments are missing or invalid, a suitable error is reported. If all arguments are ok, the data is displayed in tabular form.

Parameters:

WWPN - World Wide Port Name of object adapter.

Type - X86, EFI, OB

SetBootParam

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetBootParam <WWPN> <Type> <Param> <Value1> [BootDev <Value2>]

Description: Performs a high-level read-modify-write operation.

- For Adapter Params, the BootDev keyword and value must be omitted; otherwise, an error is reported.
- For Boot Device Params (OpenBoot) the BootDev keyword and value must be omitted; otherwise, an error is reported.
- For Boot Device Params (X86 and EFI) the BootDev keyword and value are required.

Parameters:

WWPN - World Wide Port Name of object adapter.

Type - X86, EFI, OB.

Param - Parameter Name.

Value1 - Parameter Value.

Value2 - Boot Device Entry Number: {0 - 7}.

CEE Commands

Note: Converged Enhanced Ethernet (CEE) commands are for CEE management of LP21000 series and OneConnect adapters only.

Note: CEE commands are not supported for NIC only adapters.

CEEDownload

Note: Supported for LP21000 series adapters only. Not supported for OneConnect adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd CEEDownload <WWPN> <Filename>

Description: Updates the CEE firmware on the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter.

Filename - Name of the file to download.

GetCEEParams

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd GetCEEParams <WWPN | MAC>

Description: Shows the Internal Host PFC flag value and DCBX mode (i.e. CEE version). For CNAs (both iSCSI and FCoE) Priorities, Priority Groups, and the corresponding bandwidths are shown. The LLDP state is also displayed.

Parameters:

WWPN - World Wide Port Name of the FCoE adapter port.

MAC - MAC address of the NIC or iSCSI port.

SetCEEParam

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetCEEParam <WWPN | MAC> <Param> <Value>

Description: Set or clear the Internal Host PFC flag. SetCEEParam configures one of the CEE parameters. The values must be set according to the following rules:

1. For FCoEPriority and iSCSIPriority the valid range is 0 to 7.

   A single priority must be specified.

2. PFCPriorities are specified by a single priority or a list of comma separated values.

   The valid range for each priority is 0 to 7.

3. For the following parameters, the valid values are 0 and 1:

   DcbxState, DcbxMode, TxState, RxState, TxPortDesc, TxSysDesc, TxSysName, TxSysCap, PgEnable, PgWilling, PgAdvertise, PfcEnable, PfcWilling, PfcAdvertise, TlvEnable, TlvWilling, and TlvAdvertise.

4. Defaults - sets all CNA CEE params to their default values.

   For example: SetCEEParam <WWPN|MAC> defaults

Parameters:

WWPN - World Wide Port Name of the adapter.

MAC - MAC address of the NIC or iSCSI port.

Param - Parameter Name.

LP-21000-M and LP21002-M parameters:

Pausetype - 1 = Standard, 2 = Per Pause Priority

pfcflag - 0 = Clear, 1= Set

pfcpriority - (0-0xff)

fcoepriority - (0-7)

fcoeformat - (0 or 0x10000)

Uifporttype - 1 = Access, 2 = Trunk

OneConnect adapter parameters:

DCBXState - 1= enabled 0 = disabled

DCBXMode - 1= CEE, 0 = CIN

PFCEnable - 1= enabled, 0 = disabled

PFCWilling - 1 = enabled, 0 = disabled

PFCAdvertise - 1 = enabled, 0 = disabled

PGEnable - 1 = enabled, 0 = disabled

PGWilling - 1 = enabled, 0 = disabled

PGAdvertise - 1 = enabled, 0 = disabled

FCoEPGID - (0-7)

FCoEPriority - (0-7) [only for FCoE adapters]

iSCSIPriority - (0-7) [only for iSCSI adapters]

PFCPriorities - Comma separated list of up to 7 values ranging from 0-7. For example: 0,3,6

LLDP settings:

TxState - 1 = enabled, 0 = disabled

RxState - 1 = enabled, 0 = disabled

TxPortDesc - 1 = enabled, 0 = disabled

TxSysDesc - 1 = enabled, 0 = disabled

TxSysName - 1 = enabled, 0 = disabled

TxSysCap - 1 = enabled, 0 = disabled

Value - Parameter Value.

Where multiple values are possible, they should be specified using comma separated values.

GetPGInfo

Note: Supported for OneConnect adapters only. Not supported for LP21000 series adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd GetPGInfo <WWPN | MAC>

Description: Shows the priority membership and bandwidth percentages for up to eight priority groups for the port.

Parameters:

WWPN - World Wide Port Name of the adapter.

MAC - MAC address of the NIC or iSCSI port.

SetPGBW

Note: Supported for LP21000 series adapters only. Not supported for OneConnect adapters (see SetCnaPGBW).

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetPGBW <WWPN> <BW0> <BW1> <BW2>

Description: Set the bandwidth percentages for each of the three priority groups supported.

The bandwidth percentages must add up to 100% and cannot exceed the bandwidth percentage for the priority group (e.g. BW1 cannot be greater than 40).

Parameters:

WWPN - World Wide Port Name of the adapter.

BW0 - Bandwidth percentage for the priority group 0.

BW1 - Bandwidth percentage for the priority group 1.

BW2 - Bandwidth percentage for the priority group 2.

Example:

This command sets the priority group 0 bandwidth to 40% and the priority groups 2 and 3 bandwidths to 30%:

```
hbacmd setpgbw 10:00:00:00:c9:3c:f7:88 40 30 30
```

SetCEEPriority

Note: Supported for OneConnect adapters only. Not supported for LP21000 series adapters.

Note: While there are eight CEE priority groups in which the CEE priorities can be assigned, only two of those groups can be assigned priorities. The FCoE or iSCSI priority is assigned to one priority group and the other seven (NIC) priorities must be assigned to one and only one other priority group.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetCeePriority <WWPN | MAC> <PFC Priorities> <Priorities of PGID0> < Priorities of PGID1> < Priorities of PGID2> ..<Priorities of PGID7>

Description: Sets the priorities for a priority group. The values must be set according to the following rules:

1. The priorities can range from 0 to 7.
2. The Priority group ID's (PGID) can range from 0 to 7.
3. Each set of priorities for a group must be separated by a space.
4. Multiple priorities for the same group are specified by a comma separated list of values (for example 3, 5, 7).
5. To specify none, use "-" for the argument.
6. Same priority values cannot be specified to different groups.
7. All priorities from 0 to 7 must be assigned to some PGID.

Parameters:

WWPN - World Wide Port Name of the FCoE adapter port for which you want to set CEE priority.

MAC - MAC address of the NIC or iSCSI port for which you want to set CEE priority.

PFC Priorities - These are the priorities that enable PFC. This also would be a comma separated list.

Example:

This command sets the priorities of the priority groups in the following order:

PFC Priorities = 3

PGID0 = 0,1,2,4,5,6,7

PGID1 = 3

PGID2 = NONE

PGID3 = NONE

PGID4 = NONE

PGID5 = NONE

PGID6 = NONE

PGID7 = NONE

```
hbacmd setceepriority 10:00:00:00:c9:3c:f7:88 3,0,1,2,4,5,6,7,3 - - - - - -
```

SetCnaPGBW

Note: Supported for OneConnect adapters only. Not supported for LP21000 series adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetCnaPGBW <WWPN | MAC> <BW0 … BW7>

Description: Sets the bandwidth percentage of a priority group. The values must be set according to the following rules.

1. The bandwidth percentage can be 0-100% with a granularity of 1%.
2. The sum of all the bandwidth must add up to 100 or else an error message will be displayed.
3. The first value is for PGID0, the second is for PGID1, and so on until PGID7.
4. All eight bandwidths must be specified.

Parameters:

WWPN - World Wide Port Name of the adapter for which you want to set the bandwidth percentage of a priority group.

MAC - MAC address of the NIC or iSCSI port for which you want to set the bandwidth percentage of a priority group.

BW - Bandwidth that is allocated for each Priority Group.

Example:

This command sets the bandwidth of PGID0 to 50 PGID1 to 40 and the rest to 0%.

```
hbacmd setcnapgbw 10:00:00:00:c9:3c:f7:88 50 50 0 0 0 0 0 0
```

FCoE Commands

GetFIPParams

Note: Not supported for LP21000 series adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd GetFIPParams <WWPN>

Description: Show the FIP parameters of the FC port.

Parameters:

WWPN - World Wide Port Name of the adapter.

SetFIPParam

Note: Not supported for LP21000 series adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetFIPParam <WWPN> <Param> <Value>

Description: Set the various FIP parameters of the FC port.

Parameters:

WWPN - World Wide Port Name of the adapter.

pfabric - 8 byte fabric name (format XX:XX:XX:XX:XX:XX:XX:XX)

pswitch - 8 byte switch name (format XX:XX:XX:XX:XX:XX:XX:XX)

vlanid - 2 byte VLAN ID [0-4095]

Or

'any' for any VLANID

fcmap - 3-byte FC_map, 0x0EFCxx

cinvlanid - 2-byte VLAN_ID [0-4095]

GetFCFInfo

Note: Not supported for LP21000 series adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd GetFCFInfo <WWPN>

Description: Show the FCF information of the FC port.

Parameters:

WWPN - World Wide Port Name of the adapter.

Diagnostic Commands

Note: Diagnostic commands are not available using the CIM interface.

EchoTest

Note: Not supported for OneConnect adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd EchoTest <WWPN Source> <WWPN Destination> <Count> <StopOnError> <Pattern>

Description: Runs the echo test on adapters.

Note: Support for remote adapter is TCP/IP access only. The EchoTest command fails if the target WWPN does not support the ECHO ELS command.

Parameters:

Source WWPN - World Wide Port Name of the originating adapter.

Destination WWPN - World Wide Port Name of the destination (echoing) adapter.

Count - Number of times to run the test. 0 = run test infinitely.

StopOnError - Should the test be halted on Error? 0 = No halt, 1 = Halt.

Pattern - Hexadecimal data pattern to transmit (up to 8 characters).

GetBeacon

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd GetBeacon <WWPN | MAC>

Description: Shows the current beacon status for the adapter specified by the WWPN or MAC address.

Parameters:

WWPN - World Wide Port Name of the FC port whose current beacon you want to view.

MAC - MAC address of the NIC or iSCSI port whose current beacon you want to view.

SetBeacon

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetBeacon <WWPN | MAC> <BeaconState>

Description: Sets the current beacon status for the adapter specified by the WWPN or MAC address.

Parameters:

WWPN - World Wide Port Name of the FC port whose beacon state you want to change.

MAC - MAC address of the NIC or iSCSI port whose beacon state you want to change.

BeaconState - New state of the beacon: 0 = Off, 1= On

GetXcvrData

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: GetXcvrData <WWPN | MAC>

Description: Shows the transceiver information such as vendor name, serial number, part number and so on.

Parameters:

WWPN: World Wide Port Name of the adapter port.

MAC - MAC address of the NIC or iSCSI port.

LoadList

Note: Not supported for OneConnect adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd LoadList <WWPN>

Description: Shows the flash load list data for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose flash load list data you want to view.

LoopBackTest

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd loopback <WWPN | MAC> <Type> <Count> <StopOnError> [Pattern]

Description: Runs the loop test on the adapter specified by the WWPN or MAC address.

Note: Loopback tests can be run on FC ports being managed locally or remotely managed through TCP/IP-based management.

Parameters:

WWPN - World Wide Port Name of the FC or FCoE port on which you want to run loopback test.

MAC - MAC address of the NIC or iSCSI port on which you want to run loopback test.

Type - 0 = PCI LoopBack Test, 1 = Internal LoopBack Test, 2 = External LoopBack Test (requires loopback plug), 3 = DMA Loopback Test, 4 = PHY Loopback Test.

Note: Loopback tests 0 and 1are not supported for OneConnect adapters and Loopback tests 3 and 4 are only supported for OneConnect adapters.

Count - Number of times to run the test (0 = run test infinitely, Range = 1...99,999).

StopOnError - Should the test be halted on Error? 0 = No halt, 1 = Halt.

Pattern (optional) - 1 to 8 hexadecimal bytes to use for loopback data (for example: 1a2b3c4d).

LoopMap

Note: Supported for FC ports only.

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd LoopMap <WWPN>

Description: Shows the arbitrated loop map data for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose arbitrated loop map data you want to view.

PCIData

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server.

Syntax: hbacmd PCIData <WWPN | MAC >

Description: Shows PCI configuration data for the adapter specified by the WWPN or MAC address.

The PCI registers displayed are specific to the function referenced in the OneCommand Manager application CLI. For example, if the WWPN for the FCoE function is specified, the PCI registers for that FCoE function are displayed. If the MAC address for the NIC function on that same physical port is specified, the PCI registers for that NIC function are displayed.

Only the base PCI registers are displayed. The extended PCI registers are not available on a CNA.

Parameters:

WWPN - World Wide Port Name of the adapter whose configuration data you want to view.

MAC - MAC address of the NIC or iSCSI port whose configuration data you want to view.

The OneCommand Manager application CLI has a command that displays wakeup parameter information, much the same way that OneCommand manager application displays it in its own control field.

For example:

Vendor ID:	0x10DF	Device ID:	0xF900
Command:	0x011E	Status:	0x02A0
Revision ID:	0x01	Prog If:	0x00
Subclass:	0x04	Base Class:	0x0C
Cache Line Size:	0x10	Latency Timer:	0x40
Header Type:	0x00	Built In Self Test:	0x00
Base Address 0:	0xF9AEB004	Base Address 1:	0x00000000
Base Address 2:	0xF9AEAF04	Base Address 3:	0x00000000
Base Address 4:	0x00000001	Base Address 5:	0x00000000
CIS:	0x00000000	SubVendor ID:	0x10DF
SubSystem ID:	0xF900	ROM Base Address:	0x00000000

Interrupt Line:	0x1A	Interrupt Pin:	0x01
Minimum Grant:	0xFF	Maximum Latency:	0x00
Capabilities Ptr:	0x00		

PostTest

Note: Not supported for OneConnect adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd PostTest <WWPN>

Description: Runs the POST on the adapter. Support for a remote adapter is TCP/IP access only.

Parameters:

WWPN - World Wide Port Name of the adapter on which you want to run a POST.

Wakeup

Note: Not supported for OneConnect adapters.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd Wakeup <WWPN>

Description: Shows wakeup parameter data for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose wakeup parameter data you want to view.

Driver Parameter Commands

Note: Supported for FC and FCoE ports only.

Note: Driver Parameters that are set temporarily and globally (using the "G" and "T" flags) must be read using the "GetDriverParams" hbacmd command to view the current value of the parameter. The "GetDriverParamsGlobal" hbacmd command will display only permanently set driver parameter values. Additionally, if temporary, global values have been set for one or more driver parameters, the "SaveConfig" hbacmd command must be run with the "N" flag (using the "N" flag is analogous to the hbacmd command "GetDriverParams") to force the driver parameter values for the specified adapter to be saved. Inaccurate values may be saved if the "G" flag is used for this command.

DriverConfig

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Note: For VMware ESX Server 3.5: When the DriverConfig driver command is used to set a driver parameter persistently and/or requires a reboot, the ramdisk must be rebuilt.

To rebuild the ramdisk for ESX Server 3.5, type:
esxcfg-boot -b
reboot

Syntax: hbacmd DriverConfig <WWPN> <FileName> <Flag>

Description: Sets all driver parameters for the adapter to the driver parameter values contained in the specified .dpv file type. The .dpv file's driver type must match the driver type of the host platform adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose driver parameters you want to set.

FileName - Name of the .dpv file (the file is stored in the Emulex Repository directory).

Flag - G = Make change global (all adapters on this host), N = Make change non-global (adapter-specific).

GetDriverParams

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server. For VMware ESX Server version 3.5.0 or earlier, the driver uses the DriverParams command, but it has the same format as GetDriverParams.

Syntax: hbacmd GetDriverParams <WWPN>

Description: Shows the name and values of each driver parameter for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose driver parameters you want to view.

GetDriverParamsGlobal

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server. For ESX Server version 3.5.0 or earlier, the driver uses the DriverParamsGlobal command, but it has the same format as GetDriverParamsGlobal.

Syntax: hbacmd GetDriverParamsGlobal <WWPN>

Description: Shows the name and the global value of each driver parameter for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose driver parameter global names and values you want to view.

SaveConfig

Note: Driver Parameters that are set temporarily and globally (using the "G" and "T" flags) must be read using the "GetDriverParams" hbacmd command to view the current value of the parameter. The "GetDriverParamsGlobal" hbacmd command will display only permanently set driver parameter values. Additionally, if temporary, global values have been set for one or more driver parameters, the "SaveConfig" hbacmd command must be run with the "N" flag (using the "N" flag is analogous to the hbacmd command "GetDriverParams") to force the driver parameter values for the specified adapter to be saved. Inaccurate values may be saved if the "G" flag is used for this command.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SaveConfig <WWPN> <FileName> <Flag>

Description: Saves the specified adapter's driver parameters to a file. The resulting file contains a list of driver parameter definitions in ASCII file format with definitions delimited by a comma. Each definition is of the form: `<parameter-name>=<parameter-value>.`

Saves either the values of the global set or those specific to the adapter. The file created by this command is stored in the Emulex Repository directory.

Parameters:

WWPN - World Wide Port Name of the adapter whose configuration data you want to save.

FileName - Name of the file that contains the driver parameters list.

Flag - G = Save the global parameter set, N = Save the local (adapter-specific) parameter set.

SetDriverParam

Note: For VMware ESX Server 3.5: When the SetDriverParam driver command is used to set a driver parameter persistently and/or requires a reboot, the ramdisk must be rebuilt.

To rebuild the ramdisk for ESX Server 3.5, type:
esxcfg-boot -b
reboot

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetDriverParam <WWPN> <Flag1> <Flag2> <Param> <Value>

Description: Changes the value of a driver parameter and designates the scope of that change.

Parameters:

WWPN - World Wide Port Name of the adapter whose driver parameters you want to change.

Flag1 - L = Make change local for this adapter only, G = Make change global (all adapters on this host).

Flag2 - P = Make change permanent (persists across reboot), T = Make change temporary.

Note: For VMware ESX Server version 3.5.0 or earlier, CtrlWord - P = Make change permanent, G = Make change global, B = Both, N = Neither.

Param - Name of the parameter to modify.

Value - New value you want to assign to the parameter (Input as decimal, prefix with 0x to input as hex).

SetDriverParamDefaults

Note: For VMware ESX Server 3.5: When the SetDriverParamDefaults driver command is used to set a driver parameter persistently and/or requires a reboot, the ramdisk must be rebuilt.

To rebuild the ramdisk for ESX Server 3.5, type:
esxcfg-boot -b
reboot

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetDriverParamDefaults <WWPN> <Flag1> <Flag2>

Description: Changes all values to the default for the adapter(s).

Parameters:

WWPN - World Wide Port Name of the adapter whose values you want to change to the default.

Flag1 - L = Make changes local for this adapter only, G = Make changes global (all adapters on this host).

Flag2 - P = Make changes permanent (persists across reboot), T = Make changes temporary.

Dump Commands

Note: The Dump commands are not supported for OneConnect adapters.

Caution: Disruption of service can occur if a diagnostic dump is run during I/O activity.

Note: The diagnostic dump feature enables you to create a “dump” file for a selected adapter. Dump files contain various information such as firmware version, driver version, and so on. This information is particularly useful when troubleshooting an adapter. (Not available in read-only mode.)

DeleteDumpFiles

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd DeleteDumpFiles <WWPN>

Description: Deletes all diagnostic dump files for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose diagnostic dump files you want to delete.

Dump

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server.

Syntax: hbacmd dump <WWPN>

Description: Shows the maximum number of diagnostic dump files that be can stored for an adapter. Creates a diagnostic dump file in the hbacmd dump file directory.

Parameters:

WWPN - World Wide Port Name of the adapter whose dump information you want to view.

GetDumpDirectory

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd GetDumpDirectory <WWPN>

Description: Shows the dump file directory associated with the adapter.

Note: The dump directory applies to all adapters in the server. Each adapter does not have a separate dump directory.

Parameters:

WWPN - World Wide Port Name of the adapter on which you want to view the dump directory.

GetRetentionCount

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd GetRetentionCount <WWPN>

Description: Shows the maximum number of diagnostic dump files stored for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter on which you want to get the retention count.

SetRetentionCount

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetRetentionCount <WWPN> <Value>

Description: Specifies the maximum number of diagnostic dump files stored for the adapter. When the number reaches the retention count limit, the next dump operation causes the oldest diagnostic dump files for that adapter to be deleted.

Note: The retention count applies to all adapters in the server. If you set the retention count for one adapter, the new value will apply to all adapters in that server.

Parameters:

WWPN - World Wide Port Name of the adapter on which you want to set the retention count.

Value - Value you want to assign to the set retention count.

LUN Masking Commands

Note: Supported for FC adapters only.

Note: LUN masking commands are not supported for Linux.

Note: The GetLunMaskbyHBA, GetLunMaskbyTarget, RescanLuns, SetLunMask, Driver-Config, SetDriverParamDefaults and GetAutoConfig commands are not supported for ESX Server or Solaris.

GetLunList

Supported by: Windows and Solaris SFS

Syntax: hbacmd GetLunList <HBA WWPN> <Target WWPN> <Option>

Description: Queries for the presence of any LUNs.

Parameters:

HBA WWPN - World Wide Port Name of the adapter you want to query.

Target WWPN - World Wide Port Name of the target you want to query.

Option - 0 = Get information from driver, 1 = Get information from configuration.

GetLunUnMaskbyHBA

Supported by: Windows and Solaris SFS

Syntax: hbacmd GetLunUnMaskByHBA <HBA WWPN> <Option>

Description: Queries for the presence of any unmasked LUNs by adapter.

Parameters:

HBA WWPN - World Wide Port Name of the adapter you want to query.

Option - 0 = Get information from driver, 1 = Get information from configuration.

GetLunUnMaskbyTarget

Supported by: Windows and Solaris SFS

Syntax: hbacmd GetLunUnMaskByTarget <HBA WWPN> <Target WWPN> <Option>

Description: Queries for the presence of any unmasked LUNs by target.

Parameters:

HBA WWPN - World Wide Port Name of the adapter you want to query.

Target WWPN - World Wide Port Name of the target you want to query.

Option - 0 = Get information from driver, 1 = Get information from configuration.

RescanLuns

Supported by: Windows and Solaris SFS

Syntax: hbacmd RescanLuns <HBA WWPN> <Target WWPN>

Description: Rescans for the presence of any LUNs.

Parameters:

HBA WWPN - World Wide Port Name of the adapter you want to rescan.

Target WWPN - World Wide Port Name of the target you want to rescan.

SetLunMask

Supported by: Windows and Solaris SFS

Syntax: hbacmd SetLunMask <HBA WWPN> <Target WWPN> <Option> <Lun> <LunCount> <MaskOp>

Description: Masks the specified LUNs.

Parameters:

HBA WWPN - World Wide Port Name of the adapters.

Target WWPN - World Wide Port Name of the target.

Option - 0 = Send information to the driver, 1 = Send information to configuration (make persistent), 2 = Send information to both.

Lun - Starting LUN number.

LunCount - Number of LUNs.

MaskOp - A = Mask LUN, B = Clear unmask target level, C = Clear unmask HBA level, D = Unmask LUN, E = Unmask target level, F = Unmask HBA level.

Miscellaneous Commands

<…> = Required, […] = Optional

Download

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd Download <WWPN|MAC> <FileName>

Description: Loads the firmware image to the FC or CNA port specified by the WWPN or MAC address.

Parameters:

WWPN - World Wide Port Name of the adapter to which you want to load firmware.

MAC - MAC address of the NIC or iSCSI port to which you want to load firmware.

FileName - File name of the firmware image to load (this can be any file accessible to the CLI client application).

ExportSANInfo

Note: Emulex recommends that you redirect this output to a file with proper extension, '.xml' for XML-formatted files and '.csv' for CSV-formatted files.

Note: Due to the amount of information that must be obtained and reported, this command can take a very long time on large SAN configurations.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd exportsaninfo [format]

Note: [format] is optional. If the format parameter is specified as csv, adapter information is shown in csv format. If the format parameter is specified as xml, adapter information is shown in xml format. Leaving the format parameter blank shows the data in xml format.

Description: For reporting purposes, captures the SAN information in xml or csv format.

Parameters: None

GetVPD

Supported by: Windows, Solaris SFS Linux and VMware ESX Server

Syntax: hbacmd GetVPD <WWPN>

Description: Shows the port's Vital Product Data (VPD).

Parameters:

WWPN - World Wide Port Name of the adapter whose VPD you want to view.

ListHBAs

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd ListHBAs

Description: Shows a list of the manageable Emulex adapters found by local, remote in-band (over FC), and remote out-of-band (over TCP/IP) discovery. For a NIC-only or iSCSI adapter instead of the Port WWN, the MAC address is displayed. The Node WWN and Fabric WWN are not displayed. The Mode field indicates whether the port is a NIC or an iSCSI port.

Note: The OneCommand Manager application CLI does its own discovery of FC, NIC, and iSCSI ports and does not use the Discovery server.

Note: The Mode field indicates whether the adapter is operating as a "Target" or an "Initiator".

Parameters: None

CnaGetEventlog

Note: Supported for OneConnect adapters only.

Supported by: Windows, Linux and VMware ESX Server

Syntax: hbacmd cnageteventlog <WWPN|MAC>

Description: Shows the CNA eventlog specified by the WWPN or MAC address.

Parameters:

WWPN - World Wide Port Name of the CNA FCoE port whose eventlog you want to view.

MAC - MAC address of the NIC or iSCSI port of the CNA whose eventlog you want to view.

CnaClearEventlog

Note: Supported for OneConnect adapters only.

Supported by: Windows, Linux and VMware ESX Server

Syntax: hbacmd cnaclearеventlog <WWPN|MAC>

Description: Clears the CNA eventlog specified by the WWPN or MAC address.

Parameters:

WWPN - World Wide Port Name of the CNA FCoE port whose eventlog you want to clear.

MAC - MAC address of NIC or iSCSI port of the CNA whose eventlog you want to clear.

Reset

Note: Supported only for FC and FCoE ports, not supported for NIC and iSCSI ports.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd Reset <WWPN>

Description: Resets the adapter. An adapter reset can require several seconds to complete, especially for remote devices. Once the reset command is completed, the system command prompt is displayed.

Parameters:

WWPN - World Wide Port Name of the adapter you want to reset.

TargetMapping

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd TargetMapping <WWPN>

Description: Shows a list of mapped targets and the LUNs for the port.

Parameters:

WWPN - World Wide Port Name of the adapter whose target mapping you want to view.

Version

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd Version

Description: Shows the current version of the OneCommand Manager CLI Client application.

Parameters: None

GetCimCred

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd GetCimCred

Description: Shows the encrypted value of the password.

Parameters: None

SetCimCred

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd SetCimCred <u=username> <p=password> <n=namespace> <o=portnum>

Description: Set the default CIM credentials. All four credentials i.e. username, password, namespace and portnumber must be specified. Default credentials are used if any credential is missed in the hbacmd command argument. Once the default credentials for a host are set successfully, any other command can be issued just by specifying m=CIM.

Parameters:

u=username - Login User ID of the VMware ESX server.

p=password - Login password of the VMware ESX server.

n=namespace - Namespace where the Emulex provider is registered in the sfcb CIMOM of VMware ESX server i.e. elxhbacmpi/cimv2

o=portnum - Port number of the sfcb CIMOM listening to i.e. 5988 (HTTP) or 5989 (HTTPS).

Addhost

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd addhost host_address.

Description: Adds a host to the hosts file. The host_address can be an IP address or a host name.

Parameters:

host_address - Host to add.

Removehost

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd removehost host_address

Description: Removes a host from the hosts file. The host_address can be an IP address or a host name.

Parameters:

host_address - Host to remove.

Persistent Binding Commands

Note: Supported for FC adapters only.

Note: The PersistentBinding, SetPersistentBinding, RemovePersistentBinding, Remove-AllPersistentBinding, BindingCapabilities, BindingSupport and SetBindingSupport commands are not supported on Linux or Solaris.

Note: The PersistentBinding, SetPersistentBinding, RemovePersistentBinding, Remove-AllPersistentBinding, BindingCapabilities, BindingSupport and SetBindingSupport commands are not supported in VMware ESX Server.

Note: In order for a binding to take effect immediately (SetPersistentBinding parameter, Scope = I or B), the SCSIBus and SCSITarget must match the SCSI bus and SCSI target to which the FC target is already automapped. If automapping is disabled, the binding will take effect immediately if the FC target is not already persistently bound and the specified SCSIBus and SCSITarget are available to be persistently bound. Also, the BindType must match the currently active bind type. Otherwise, you will be notified that you must reboot the system to cause the persistent binding to become active.

AllNodeInfo

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd AllNodeInfo <WWPN>

Description: Shows target node information for each target accessible by the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose target node information you want to view.

BindingCapabilities

Supported by: Windows and Solaris SFS

Syntax: hbacmd BindingCapabilities <WWPN>

Description: Shows the binding capabilities present for the adapter. If a binding is configured, it means the binding is maintained across reboots.

Parameters:

WWPN - World Wide Port Name of the adapter whose binding capabilities you want to view.

BindingSupport

Supported by: Windows and Solaris SFS

Syntax: hbacmd BindingSupport <WWPN> <Source>

Description: Shows the binding support available for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose binding support you want to view.

Source - C = Configuration support, L = Live support.

PersistentBinding

Supported by: Windows and Solaris SFS

Syntax: hbacmd PersistentBinding <WWPN> <Source>

Description: Specifies which set of persistent binding information is requested: the configured or live state of any present binding.

Parameters:

WWPN - World Wide Port Name of the adapter whose persistent binding information you want to specify.

Source - C = Configuration, L = Live.

SetPersistentBinding

Supported by: Windows and Solaris SFS.

Syntax: hbacmd SetPersistentBinding <WWPN> <Scope> <BindType> <TargetId> <SCSIBus> <SCSITarget>

Description: Sets a persistent binding between an FC target and a SCSI Bus and target. The binding can be to a target WWPN, target WWNN, or target D_ID.

Parameters:

WWPN - World Wide Port Name of the adapter whose persistent bindings you want to set.

Scope - P = Binding is permanent (survives across reboot), I = Binding is immediate, B = Binding is both permanent and immediate.

BindType - P = Enable binding by WWPN, N = Enable binding by WWNN, D = Enable binding by D_ID.

TargetId - Target WWPN if BindType = P, Target WWNN if BindType = N, Target D_ID if BindType = D.

SCSIBus - Bus number of SCSI device.

SCSITarget - Target number of SCSI device.

RemoveAllPersistentBinding

Supported by: Windows and Solaris SFS

Syntax: hbacmd RemoveAllPersistentBinding <WWPN>

Description: Removes all persisting bindings for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose persistent bindings you want to remove.

RemovePersistentBinding

Supported by: Windows and Solaris SFS

Syntax: hbacmd RemovePersistentBinding <WWPN> <BindType> <ID> <SCSIBus> <SCSITarget>

Description: Removes persistent binding between an FC target and a SCSI Bus and target. The binding to be removed can be to a target WWPN, target WWNN, or target D_ID.

Parameters:

WWPN - World Wide Port Name of the adapter whose persistent bindings you want to remove.

BindType - P = Remove binding by WWPN, N = Remove binding by WWNN, D = Remove binding by D_ID

ID - Target WWPN if BindType = P, Target WWNN if BindType = N, Target D_ID if BindType = D.

SCSIBus - Bus number of SCSI device.

SCSITarget - Target number of SCSI device.

SetBindingSupport

Supported by: Windows and Solaris SFS

Syntax: hbacmd SetBindingSupport <WWPN> <BindFlag>

Description: Enables and sets the binding support(s) for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose binding support you want to set and enable.

BindFlag - *D = Binding by D_ID, P = Binding by WWPN, *N = Binding by WWNN, *A = Binding by Automap, DA = Binding by D_ID and Automap, PA = Binding by WWPN and Automap, NA = Binding by WWNN and Automap.

* Not available for the Storport Miniport driver.

TCP/IP Management Host File Commands

See “Miscellaneous Commands” on page 35.

VPort Commands

Note: Supported for FC and FCoE adapters only.

<…> = Required, […] = Optional

CreateVPort

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd CreateVPort <physical WWPN> auto [vname]

Or

hbacmd CreateVPort <physical WWPN> <virtual WWPN> <virtual WWNN> [vname]

Description: Creates a virtual port with an automatically generated WWPN or a specified virtual WWPN on the specified physical port. If you specify “auto”, the virtual WWPN is generated automatically. Otherwise, you must specify the virtual WWPN for this parameter. If creation is successful, the WWPN is displayed as part of the output from the command. The optional [vname] parameter can be specified for the virtual port's name.

Parameters:

Physical WWPN - World Wide Port Name of the object adapter.

Virtual WWPN – The virtual World Wide Port Name.

Auto - The virtual WWPN is automatically generated for the virtual port.

Vname - The virtual port’s name (optional).

Or

Physical WWPN - World Wide Port Name of the object adapter.

Virtual WWPN – The virtual World Wide Port Name to create.

Vname - The virtual port’s name (optional).

DeleteVPort

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd deletevport <physical WWPN> <virtual WWPN>

Description: Deletes the virtual port specified by a physical and virtual WWPN.

Parameters:

Physical WWPN - World Wide Port Name of the adapter from which you want to delete a virtual port.

Virtual WWPN - The WWPN for the virtual port.

ListVPorts

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server 3.5 and 4.0

Syntax: hbacmd listvports

Description: Lists virtual ports on the specified physical port. Leaving the physical wwpn parameter blank will list all virtual ports on all manageable hosts that support virtual ports.

The virtual machine name is only displayed if the virtual port is associated with a virtual machine on VMware ESX Server 4.0. If you are running this command on any other server that has virtual ports, you will not see the virtual machine name.

Parameters:

Physical WWPN - World Wide Port Name of the adapter on which you want to list virtual ports.

VPortTargets

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd vporttargets <physical WWPN> <virtual WWPN>

Description: Lists targets visible to the specified virtual port.

Parameters:

Physical WWPN - World Wide Port Name of the adapter on the targets are visible.

Virtual WWPN - The WWPN for the virtual port.

ListVMs

Note: This command lists information for ESX Server 3.5 Updates 4 and 5, and ESX Server 4.0 only.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd listvms

Description: Lists all virtual machines and their information for all manageable ports.

If the host is specified with the “h=<host>” option or just the physical wwpn is given, only the virtual machines for that host are displayed. If the physical port and the virtual port are specified, only the virtual machine for the specified virtual port is displayed.

Parameters:

Physical WWPN - World Wide Port Name of the adapter on the targets are visible.

Virtual WWPN - The WWPN for the virtual port.

WWN Management Commands

Note: Supported for Fibre Channel and FCoE adapters only.

Note: WWN Management validates WWNs very carefully to avoid name duplication. Therefore, you may see error and warning messages if a name duplication is detected. It is strongly recommended that the activation requirement be fulfilled after each WWN change or restore. When running with “pending changes”, some diagnostic and maintenance features are not allowed.

ChangeWWN

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: ChangeWWN <WWPN> <New WWPN> <New WWNN> <Type>

Description; Changes the volatile or non-volatile state of WWNs. If the volatile change is requested on an adapter that does not support Volatile WWNs, a “not supported” error is displayed.

Note: When a volatile change is supported, a reboot is required to activate the new setting. Volatile names are active until system power-down or adapter power-cycle.

Note: For VMware ESX Server: After changing the WWN of an adapter, be sure your zoning settings are updated before you reboot your ESX server. If the zoning is not updated before your reboot, the subsequent boot may take a long time.

Note: For VMware ESX 4i: After changing the WWN of an adapter, you must reboot the ESX 4i system before trying to access the adapter on that system. For information on rebooting the ESX 4i system, refer to VMware documentation.

Note: For ESX 4.0 COS: If you are using the CIM Interface to access adapters, after changing the WWN of an adapter you must restart the CIMOM (i.e. SFCB) on the ESX 4.0 COS system before trying to access the adapter on that system. For information on restarting the CIMOM, refer to VMware documentation.

Parameters:

WWPN - World Wide Port Name of object adapter.

New WWPN - New World Wide Port Name of object adapter.

New WWNN - New World Wide Node Name of object adapter.

Type - 0 = Volatile, 1 = Non-Volatile

Get Capabilities (GetWWNCap on VMware and Solaris)

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd getwwncap <WWPN>

Description: Shows if volatile change is supported for the WWPN.

Parameters:

WWPN - World Wide Port Name of object adapter.

ReadWWN

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd readWWN <WWPN> <Type>

Description: Reads different types of WWNs.

Parameters:

WWPN - World Wide Port Name of object adapter.

Type - 0 = Volatile, 1 = Non-Volatile, 2 = Factory Default, 3 = Current, 4 = Configured.

RestoreWWN

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: RestoreWWN <WWPN> <Type>

Description: Quickly changes the WWNs back to the factory default or non-volatile values. This change is non-volatile.

Note: A reboot is required to activate the new setting.

Note: For VMware ESX 4i: After changing the WWN of an adapter, you must reboot the ESX 4i system before trying to access the adapter on that system. For information on rebooting the ESX 4i system, refer to VMware documentation.

Note: For ESX 4.0 COS: If you are using the CIM Interface to access adapters, after changing the WWN of an adapter you must restart the CIMOM (i.e. SFCB) on the ESX 4.0 COS system before trying to access the adapter on that system. For information on restarting the CIMOM, refer to VMware documentation.

Parameters:

WWPN - World Wide Port Name of object adapter.

Type - 0 = Restore Default WWNs, 1 = Restore NVRAM WWNs.

iSCSI Commands

Note: iSCSI commands are supported only for OneConnect adapters running the iSCSI protocol.

The following commands support the iSCSI interface in the OneCommand Manager application CLI. The commands and their syntax are listed here.

<…> = Required, […] = Optional

The MAC address <MAC_Address> must be passed to each command as the first argument. The MAC address refers to the CNA port upon which the command will operate.

Some of the commands in this document require that values are set using a format similar to the following: "option_name=value". This format requires you to either type out the full option name, or the abbreviated option name detailed in the following table, and then the value.

The following abbreviations are available for use when setting the option name for a “option_name=value” option. These abbreviations are not case sensitive.

Option Name	Abbreviation	Example
InitialR2T	ir	ir=1
ImmediateData	id	id=1
DataDigest	dd	dd=1
HeaderDigest	hd	hd=1
Auth	au	au=1
Initiator_name	in	in=”initiator name”
Initiator_alias	ia	ia=”initiator alias”
DHCP	dh	dh=1
VLAN_ENABLED	ve	ve=1
VLAN_ID	vi	vi=1
Priority	pr	pr=1

ShowTargetPortal

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] ShowTargetPortal <MAC_Address> [<Target_IP> <Port>]

Description: Shows the properties for a specified SendTarget Portal. If the Target_IP and Port are not specified, all SendTarget Portals and their associated properties are displayed.

Parameters:

MAC_Address - MAC address of the CNA port.

Target_IP - IP address of the target portal (for example: 10.192.1.1).

Port - Port number of the target portal (value: 1024-65535).

ShowTarget

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] ShowTarget <MAC_Address> [iscsi_target_name | refreshtargets]

Description: Shows the properties for a specified Target. If the iSCSI target name <iscsi_target_name> is not specified, all targets and their associated properties are displayed. If "refreshtargets" is specified in place of the iSCSI Target Name, a refresh of all targets will be done before displaying the information. If no iSCSI Target Name is provided and "refreshtargets" is not specified, only the targets from the last refresh are displayed.

Parameters:

MAC_Address - MAC address of the CNA port.

iscsi_target_name - Target’s iSCSI name enclosed in quotes (string length:11-255).

refreshtargets - Refresh all targets before displaying the information.

Note: Only one "Optional" command option can be specified with this command. If the <iscsi_target_name> is provided, "refreshtargets" cannot be and likewise, if "refreshtargets" is specified then the <iscsi_target_name> cannot be specified.

SetTargetProperties

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] SetTargetProperties <MAC_Address> <iscsi_target_name> <ETO>

Description: Sets the Extended TimeOut (ETO) value of a target. This command requires the iSCSI target name <iscsi_target_name> and the Extended Timeout <ETO> values to be specified.

Parameters:

MAC_Address - MAC address of the CNA port.

iscsi_target_name - Target's iSCSI name enclosed in quotes (string length:11-255).

ETO - Extended Timeout Option for the target (value differs depending on the OS: Windows: 0 - 3600 and Solaris, Linux and ESX: 0 - 30).

SetTPLoginProperties

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] SetTPLoginProperties <MAC_Address> <Target_IP> <Port> [InitialR2T=<0|1>] [ImmediateData=<0|1>] [HeaderDigest=<0|1>] [DataDigest=<0|1>] [Auth=<0|1|2> "TgtCHAPName" "TgtSecret" "InitCHAPName" "InitSecret"]

Description: Sets a target portal's login properties. This command requires that a valid Target IP <Target_IP> and Port <Port> are specified. However, if no options other than the Target IP and Port are specified, then no changes are made. You must change at least one of the optional parameters in order for this command to make any changes to the target portal's login properties. When you set the Authentication Method <Auth> to a value other than "0" additional parameters must be set to specify the initiator, target CHAP name, and secret strings. These strings should be enclosed in quotations to avoid mangling by the Windows, Linux, Solaris, or VMware shell's parser.

If the Authentication Method is set to "One-Way CHAP (value of 1)", the "Target CHAP Name" and "Target Secret" must also be specified.

Example:

```
hbacmd SetTPLoginProperties 00-11-22-33-44-55 10.192.1.1 5050 Auth=1
"TgtChapName" "TargetSecret1"
```

If the Authentication Method is set to "Mutual CHAP (value of 2)", all 4 values must be specified.

Example:

```
hbacmd SetTPLoginProperties 00-11-22-33-44-55 10.192.1.1 5050 Auth=2
"TgtChapName" "TargetSecret1" "InitCHAPName" "InitialSecret1"
```

Parameters:

MAC_Address - MAC address of the CNA port.

Target_IP - IP address of the Target Portal.

Port - Port number of the Target Portal (value: 1024-65535).

InitialR2T - 0 = No, 1 = Yes (default: 1).

ImmediateData - 0 = No, 1= Yes (default: 1).

HeaderDigest - 0 = None, 1= CRC32C (default: 0).

DataDigest - 0 = None, 1= CRC32C (default: 0).

Auth - 0 = None, 1= One-Way CHAP, 2 = Mutual CHAP (default: 0).

TgtCHAPName - Target CHAP Name enclosed in quotes (string length: 1-256).

TgtSecret - Target Secret enclosed in quotes (string length: 12-16).

InitCHAPName - Initiator CHAP Name enclosed in quotes (string length: 1-256).

InitSecret - Initiator Secret enclosed in quotes (string length: 12-16).

Note: If Auth is set to "1", the TgtCHAPName and TgtSecret must be specified. If Auth is set to a value of "2", the TgtCHAPName, TgtSecret, InitCHAPName, and InitSecret must also be specified.

TargetLogin

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] TargetLogin <MAC_Address> <iscsi_target_name> [target_portal_ip <port>] [InitialR2T=<0|1>] [ImmediateData=<0|1>] [HeaderDigest=<0|1>] [DataDigest=<0|1>] [Auth=<0|1|2> "TgtCHAPName" "TgtSecret" "InitCHAPName" "InitSecret"]

Description: The iSCSI target name <iscsi_target_name> is the only mandatory option. The target's portal <target_portal> and port <port> information are optional and if they are not provided a default target portal will be used. If the remaining options are not specified, these options are set to their default values. When you set the Authentication Method <Auth> to a value other than "0" additional parameters must be set to specify the initiator, target CHAP name, and secret strings. These strings should be enclosed in quotations to avoid mangling by the Windows, Linux, Solaris, or VMware shell's parser.

If the Authentication Method is set to "One-Way CHAP (value of 1)", the "Target CHAP Name" and "Target Secret" must also be specified.

Example:

```
hbacmd TargetLogin 00-11-22-33-44-55 iscsitarget Auth=1 "TgtChapName"
"TargetSecret1"
```

If the Authentication Method is set to "Mutual CHAP (value of 2)", all 4 values must be specified.

Example:

```
hbacmd TargetLogin 00-11-22-33-44-55 iscsitarget Auth=2 "TgtChapName"
"TargetSecret1" "InitCHAPName" "InitialSecret1"
```

Parameters:

MAC_Address - MAC address of the CNA port.

iscsi_target_name - Target's iSCSI name enclosed in quotes (string length:11-255).

Port - Port number of the Target Portal (value: 1024-65535).

InitialR2T - 0 = No, 1 = Yes (default: 1).

ImmediateData - 0 = No, 1= Yes (default: 1).

HeaderDigest - 0 = None, 1= CRC32C (default: 0).

DataDigest - 0 = None, 1= CRC32C (default: 0).

Auth - 0 = None, 1= One-Way CHAP, 2 = Mutual CHAP (default: 0).

TgtCHAPName - Target CHAP Name enclosed in quotes (string length: 1-256).

TgtSecret - Target Secret enclosed in quotes (string length: 12-16).

InitCHAPName - Initiator CHAP Name enclosed in quotes (string length: 1-256).

InitSecret - Initiator Secret enclosed in quotes (string length: 12-16).

Note: If Auth is set to "1", the TgtCHAPName and TgtSecret must be specified. If Auth is set to a value of "2", the TgtCHAPName, TgtSecret, InitCHAPName, and InitSecret must also be specified.

TargetLogout

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] TargetLogout <MAC_Address> <iscsi_target_name> <TSIH | <ISID_Qual Target_IP>>Description: Logout of a session. The required fields are the iSCSI target name <iscsi_target_name> and either the TSIH <TSIH> of the session or the session's ISID qualifier <ISID_Qual> and the target's IP address <Target_IP>.

Parameters:

MAC_Address - The MAC address of the CNA port.

iscsi_target_name - Target's iSCSI name enclosed in quotes (string length:11-255).

TSIH - TSIH value of the session to log out (values: 1-65535).

ISID_Qual - ISID qualifier of the session to logout (value: 0-65535)

Target_IP - The Target's IP address.

AddTargetPortal

Note: You must specify either the TSIH value or the ISID qualifier. If ISID qualifier is specified you must also specify the Target's ID address.

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] AddTargetPortal <MAC_Address> <Target_IP> <Port> [InitialR2T=<0|1>] [ImmediateData=<0|1>] [HeaderDigest=<0|1>] [DataDigest=<0|1>] [Auth=<0|1|2> "TgtCHAPName" "TgtSecret" "InitCHAPName" "InitSecret"]

Description: Adds a new SendTarget Portal for the initiator and runs a target discovery once the SendTarget Portal is created. This command requires that a valid portal IP address <Target_IP> and a valid port number <Port> are specified. If the remaining options are not specified, these options are set to their default values. When you set the Authentication Method <Auth> to a value other than "0" additional parameters must be set to specify the initiator, target CHAP name, and secret strings. These strings should be enclosed in quotations to avoid mangling by the Windows, Linux, Solaris, or VMware shell's parser.

If the Authentication Method is set to "One-Way CHAP (value of 1)", the "Target CHAP Name" and "Target Secret" must also be specified.

Example:

```
hbacmd AddTargetPortal 00-11-22-33-44-55 10.0.0.1 8000 Auth=1 "TgtCHAPName"
"TargetSecret1"
```

If the Authentication Method is set to "Mutual CHAP (value of 2)", all 4 values must be specified.

Example:

```
hbacmd AddTargetPortal 00-11-22-33-44-55 10.0.0.1 8000 Auth=2 "TgtChapName"
"TargetSecret1" "InitCHAPName" "InitialSecret1"
```

Parameters:

MAC_Address - MAC address of the CNA port.

Target_IP - IP address of the Target Portal.

Port - Port number of the Target Portal (value: 1024-65535).

InitialR2T - 0 = No, 1 = Yes (default: 1).

ImmediateData - 0 = No, 1= Yes (default: 1).

HeaderDigest - 0 = None, 1= CRC32C (default: 0).

DataDigest - 0 = None, 1= CRC32C (default: 0).

Auth - 0 = None, 1= One-Way CHAP, 2 = Mutual CHAP (default: 0).

TgtCHAPName - Target CHAP Name enclosed in quotes (string length: 1-256).

TgtSecret - Target Secret enclosed in quotes (string length: 12-16).

InitCHAPName - Initiator CHAP Name enclosed in quotes (string length: 1-256).

InitSecret - Initiator Secret enclosed in quotes (string length: 12-16).

Note: If Auth is set to "1", the TgtCHAPName and TgtSecret must be specified. If Auth is set to a value of "2", the TgtCHAPName, TgtSecret, InitCHAPName, and InitSecret must also be specified.

RemoveTargetPortal

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] RemoveTargetPortal <MAC_Address> <Target_IP> <Port>

Description: Removes the SendTarget Portal containing the target IP <Target_IP> and the port <Port> from the list of portals for the specified initiator.

Parameters:

MAC_Address - MAC address of the CNA port.

Target_IP - IP address of the Target Portal.

Port - Port number of the Target Portal (value: 1024-65535).

AddTarget

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] AddTarget <MAC_Address> <Target_IP> <Port> <iscsi_target_name> [InitialR2T=<0|1>] [ImmediateData=<0|1>] [HeaderDigest=<0|1>] [DataDigest=<0|1>] [Auth=<0|1|2> "TgtCHAPName" "TgtSecret" "InitCHAPName" "InitSecret"]

Description: Adds a target to the list of targets seen by the initiator and logs into the target once it has been successfully created. This command requires that a valid target IP <Target_IP>, port number <Port>, and iSCSI name <iscsi_target_name> are all specified. If the remaining options are not specified, these options are set to their default values. When you set the Authentication Method <Auth> to a value other than "0" additional parameters must be set to specify the initiator, target CHAP name, and secret strings. These strings should be enclosed in quotations to avoid mangling by the Windows, Linux, Solaris, or VMware shell's parser.

If the Authentication Method is set to "One-Way CHAP (value of 1)", the "Target CHAP Name" and "Target Secret" must also be specified.

Example:

```
hbacmd AddTarget 00-11-22-33-44-55 192.168.1.1 8000 iscsitarget Auth=1
"TgtCHAPName" "TargetSecret1"
```

If the Authentication Method is set to "Mutual CHAP (value of 2)", all 4 values must be specified.

Example:

```
hbacmd AddTarget 00-11-22-33-44-55 192.168.1.1 8000 iscsitarget Auth=1
"TgtCHAPName" "TargtSecret1" "InitCHAPName" "InitialSecret1"
```

Parameters:

MAC_Address - MAC address of the CNA port.

iscsi_target_name - Target's iSCSI name enclosed in quotes (string length:11-255).

Port - Port number of the Target Portal (value: 1024-65535).

InitialR2T - 0 = No, 1 = Yes (default: 1).

ImmediateData - 0 = No, 1= Yes (default: 1).

HeaderDigest - 0 = None, 1= CRC32C (default: 0).

DataDigest - 0 = None, 1= CRC32C (default: 0).

Auth - 0 = None, 1= One-Way CHAP, 2 = Mutual CHAP (default: 0).

TgtCHAPName - Target CHAP Name enclosed in quotes (string length: 1-256).

TgtSecret - Target Secret enclosed in quotes (string length: 12-16).

InitCHAPName - Initiator CHAP Name enclosed in quotes (string length: 1-256).

InitSecret - Initiator Secret enclosed in quotes (string length: 12-16).

Note: If Auth is set to "1", the TgtCHAPName and TgtSecret must be specified. If Auth is set to a value of "2", the TgtCHAPName, TgtSecret, InitCHAPName, and InitSecret must also be specified.

SetTargetLoginProperties

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] SetTargetLoginProperties <MAC_Address> <iscsi_target_name> [InitialR2T=<0|1>] [ImmediateData=<0|1>] [HeaderDigest=<0|1>] [DataDigest=<0|1>] [Auth=<0|1|2> "TgtCHAPName" "TgtSecret" "InitCHAPName" "InitSecret"]

Description: Sets the login and authentication properties associated with a specific target. This command requires that a valid iSCSI target name <iscsi_target_name> is specified. If some of the remaining properties are not specified, these options are set to their default values. However, if no properties are changed, an error is generated. At least one property must be altered for this command to return successfully. When you set the Authentication Method <Auth> to a value other than "0" additional parameters must be set to specify the initiator, target CHAP name, and secret strings. These strings should be enclosed in quotations to avoid mangling by the Windows, Linux, Solaris, or VMware shell's parser.

If the Authentication Method is set to "One-Way CHAP (value of 1)", the "Target CHAP Name" and "Target Secret" must also be specified.

Example:

hbacmd SetTargetLoginProperties 00-11-22-33-44-55 iscsitarget Auth=1 "TgtCHAPName" "TargetSecret1"

If the Authentication Method is set to "Mutual CHAP (value of 2)", all 4 values must be specified.

Example:

```
hbacmd SetTargetLoginProperties 00-11-22-33-44-55 iscsitarget Auth=2
"TgtChapName" "TargetSecret1" "InitCHAPName" "InitialSecret1"
```

Parameters:

MAC_Address - MAC address of the CNA port.

iscsi_target_name - Target's iSCSI name enclosed in quotes (string length:11-255).

InitialR2T - 0 = No, 1 = Yes (default: 1).

ImmediateData - 0 = No, 1= Yes (default: 1).

HeaderDigest - 0 = None, 1= CRC32C (default: 0).

DataDigest - 0 = None, 1= CRC32C (default: 0).

Auth - 0 = None, 1= One-Way CHAP, 2 = Mutual CHAP (default: 0).

TgtCHAPName - Target CHAP Name enclosed in quotes (string length: 1-256).

TgtSecret - Target Secret enclosed in quotes (string length: 12-16).

InitCHAPName - Initiator CHAP Name enclosed in quotes (string length: 1-256).

InitSecret - Initiator Secret enclosed in quotes (string length: 12-16).

Note: If Auth is set to "1", the TgtCHAPName and TgtSecret must be specified. If Auth is set to a value of "2", the TgtCHAPName, TgtSecret, InitCHAPName, and InitSecret must also be specified.

RemoveTarget

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] RemoveTarget <MAC_Address> <iscsi_target_name>

Description: Removes the target with the specified iSCSI target name <iscsi_target_name>.

Parameters:

MAC_Address - MAC address of the CNA port.

iscsi_target_name - Target's iSCSI name enclosed in quotes (string length:11-255).

ShowiSNSServer

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] ShowiSNSServer <MAC_Address>

Description: Shows the currently configured Internet Storage Name Server. This command also indicates whether or not iSNS discovery is enabled.

Parameters:

MAC_Address - MAC address of the CNA port.

DiscoveriSNSServer

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] DiscoveriSNSServer <MAC_Address>

Description: Discovers iSNS server address through DHCP. If the DHCP server returns an iSNS server address, it replaces the configured iSNS server and can be viewed using the ShowiSNSServer command.

Parameters:

MAC_Address - MAC address of the CNA port.

UpdateiSNSServer

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] UpdateiSNSServer <MAC_Address> <Server_IP> <Port>

Description: Updates the configured iSNS server. This command requires the server IP <Server_IP> and port number <Port> of the iSNS server be available to respond to the iSNS requests.

Parameters:

MAC_Address - MAC address of the CNA port.

Server_IP - IP address of the iSNS server to configure.

Port - Port number of the iSNS server to configure (value: 1024-65535).

CleariSNSServer

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] CleariSNSServer <MAC_Address>

Description: Clears the configured iSNS server and disables iSNS target discovery. If there is no iSNS server currently configured, this command does nothing.

Parameters:

MAC_Address - MAC address of the CNA port.

ShowARPTable

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] ShowARPTable <MAC_Address>

Description: Shows the current Address Resolution Protocol table for the specified port.

Parameters:

MAC_Address - MAC address of the CNA port.

AddARPTableEntry

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] AddARPTableEntry <MAC_Address> <Dest_MAC_Address> <Dest_IP_Address>

Description: Adds an Address Resolution Protocol table entry.

Parameters:

MAC_Address - MAC address of the CNA port.

Dest_MAC_Address - Destination MAC address to add to the ARP Table (for example: 00-11-22-33-44-55).

Dest_IP_Address - Destination IP address to add to the ARP Table (for example: 10.192.1.1).

DelARPTableEntry

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] DelARPTableEntry <MAC_Address> <Dest_MAC_Address> <Dest_IP_Address>

Description: Removes an Address Resolution Protocol table entry.

Parameters:

MAC_Address - MAC address of the CNA port.

Dest_MAC_Address - Destination MAC address to remove from the ARP Table (for example: 00-11-22-33-44-55).

Dest_IP_Address - Destination IP address to remove from the ARP Table (for example 10.192.1.1).

ShowRouteTable

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] ShowRouteTable <MAC_Address>

Description: Shows the route table for a specific port.

Parameters:

MAC_Address - MAC address of the CNA port.

AddRouteTableEntry

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] AddRouteTableEntry <MAC_Address> <Dest_IP_Address> <Subnet_Mask> <Gateway>

Description: Adds a new route table entry to the route table of the specified port.

Parameters:

MAC_Address - MAC address of the CNA port.

Dest_IP_Address - Destination IP address to add to the route table.

Subnet_Mask - Subnet Mask to add to the route table.

Gateway - Gateway to add to the route table.

DelRouteTableEntry

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] DelRouteTableEntry <MAC_Address> <Dest_IP_Address> <Subnet_Mask> <Gateway>

Description: Removes a route table entry from the specified port.

Parameters:

MAC_Address - MAC address of the CNA port.

Dest_IP_Address - Destination IP address to delete from the route table.

Subnet_Mask - Subnet Mask to delete from the route table.

Gateway - Gateway to delete from the route table.

GetInitiatorProperties

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] GetInitiatorProperties <MAC_Address>

Description: Shows all the initiator login options for the specified port.

Parameters:

MAC_Address - MAC address of the CNA port.

SetInitiatorProperties

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] SetInitiatorProperties <MAC_Address> [Initiator_Name="initiator_name"] [Initiator_Alias="initiator_alias"] [InitialR2T=<0|1>] [ImmediateData=<0|1>] [HeaderDigest=<0|1>] [DataDigest=<0|1>] [Auth=<0|1|2> "TgtCHAPName" "TgtSecret" "InitCHAPName" "InitSecret"]

Description: Sets the initiator properties for a specified port. This command allows for an initiator name <Initiator_Name> and an initiator alias <Initiator_Alias> to be specified. If you opt not to specify these fields, a default iSCSI name is assigned. When you set Authentication Method <Auth> to a value other than "0" additional parameters must be set to specify the initiator, target CHAP name, and secret strings. These strings should be enclosed in quotations to avoid mangling by the Windows, Linux, Solaris, or VMware shell's parser.

If the Authentication Method is set to "One-Way CHAP (value of 1)", the "Target CHAP Name" and "Target Secret" must also be specified.

Example:

hbacmd SetInitiatorProperties 00-11-22-33-44-55 Auth=1 "TgtChapName" "TargetSecret1"

If the Authentication Method is set to "Mutual CHAP (value of 2)", all 4 values must be specified.

Example:

```
hbacmd SetInitiatorProperties 00-11-22-33-44-55 Auth=2 "TgtChapName"
"TargetSecret1" "InitCHAPName" "InitialSecret1"
```

Parameters:

MAC_Address - MAC address of the CNA port.

Initiator_Name - Initiator iSCSI Name enclosed in quotes (string length: 1-224).

Initiator_Alias - Initiator iSCSI Alias enclosed in quotes (string length: 0-32).

InitialR2T - 0 = No, 1 = Yes (default: 1).

ImmediateData - 0 = No, 1= Yes (default: 1).

HeaderDigest - 0 = None, 1= CRC32C (default: 0).

DataDigest - 0 = None, 1= CRC32C (default: 0).

Auth - 0 = None, 1= One-Way CHAP, 2 = Mutual CHAP (default: 0).

TgtCHAPName - Target CHAP Name enclosed in quotes (string length: 1-256).

TgtSecret - Target Secret enclosed in quotes (string length: 12-16).

InitCHAPName - Initiator CHAP Name enclosed in quotes (string length: 1-256).

InitSecret - Initiator Secret enclosed in quotes (string length: 12-16).

Note: If Auth is set to "1", the TgtCHAPName and TgtSecret must be specified. If Auth is set to a value of "2", the TgtCHAPName, TgtSecret, InitCHAPName, and InitSecret must also be specified.

GetiSCSILuns

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] GetiSCSILuns <MAC_Address> <iscsi_target_name>

Description: Shows all the LUNs and their information for a specified target. The iSCSI target name <iscsi_target_name> instructs the command to gather the information from the specified iSCSI target.

Parameters:

MAC_Address - MAC address of the CNA port.

iscsi_target_name - Target's iSCSI name enclosed in quotes (string length:11-255).

ListSessions

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] ListSessions <MAC_Address> <iscsi_target_name>

Description: Lists all the sessions on a specified target. The iSCSI target name <iscsi_target_name> instructs the command to gather the information from the listed iSCSI target name.

Parameters:

MAC_Address - MAC address of the CNA port.

iscsi_target_name - Target's iSCSI name enclosed in quotes (string length:11-255).

GetSessionInfo

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] GetSessionInfo <MAC_Address> <iscsi_target_name> <TSIH | <ISID_Qual Target_IP>>

Description: Lists all session information for a specified session. The iSCSI target name <iscsi_target_name> and either the TSIH <TSIH> of the session or the session's ISID Qualifier <ISID_Qual> and the target's IP address <Target_IP> must be specified. These parameters instruct the command to gather the information from the specified target and session. The TSIH and ISID qualifier can be determined by running the ListSessions command.

Parameters:

MAC_Address - MAC address of the CNA port.

iscsi_target_name - Target's iSCSI name enclosed in quotes (string length:11-255).

TSIH - TSIH value of the session (value: 1-65535).

ISID_Qual - ISID qualifier of the session (value: 0-65535)

Target_IP - The Target's IP address.

Note: You must specify either the TSIH value or the ISID qualifier. If ISID qualifier is specified you must also specify the Target's ID address.

GetNetworkConfiguration

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] GetNetworkConfiguration <MAC_Address>

Description: Shows the TCP/IP configuration information for a port.

Parameters:

MAC_Address - MAC address of the CNA port.

SetNetworkConfiguration

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] SetNetworkConfiguration <MAC_Address> <VLAN_ENABLED=<0|1> [<VLAN_ID=<0-4096>> <Priority=<0-7>]> <DHCP=<0|1>> [<IP_Address> <Subnet_Mask> [Gateway]]

Description: Set TCP/IP configuration on a specified port. The required fields for this command depend upon the values set for DHCP <DHCP> and VLAN Enabled <VLAN_ENABLED>.

Parameters:

MAC_Address - MAC address of the CNA port.

VLAN_ENABLED - 0 = Disabled, 1 = Enabled.

VLAN_ID - VLAN ID of the interface (value: 0-4095).

Priority - VLAN priority of the interface (value: 0-7).

DHCP - 0 = Disabled, 1= Enabled.

IP_Address - New IP address (for example: 10.192.1.1).

Subnet_Mask - Subnet Mask (for example: 255.255.255.0).

Gateway - Gateway (for example 10.192.1.1.)

Note: VLAN_ID and Priority are required only if VLAN_ENABLED is set to "Enabled"; otherwise, these values should be omitted.

Note: IP_Address and Subnet_Mask are required only if DHCP is set to "Disabled"; otherwise these values should be omitted.

GetiSCSIPortStats

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] GetiSCSIPortStats <MAC_Address>

Description: Shows all the port statistics for a specified port.

Parameters:

MAC_Address - MAC address of the CNA port.

GetQoSInfo

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax: hbacmd [h=host_IP[:port] | hostname[:port]] GetQoSInfo <MAC_Address>

Description: Shows the QoS information for a specified NIC port.

Parameters:

MAC_Address - MAC address of the CNA port.

iSCSIPing

Supported by: Windows, Solaris SFS, Linux and VMware ESX Server

Syntax:

hbacmd [h=host_IP[:port] | hostname[:port]] iSCSIPing <MAC_Address> <IP_Address>

Description: Issues ICMP echo requests to a target.

Parameters:

MAC_Address - MAC address of the CNA port.

IP_Address - IP Address of target to send ICMP echo request (for example: 10.192.1.1).

ASCII Strings that May Be Returned

"Invalid Handle"
"Invalid Argument"
"Invalid WWN Detected"
"Illegal Index"
"More Data"
"Bad Local Bus Number"
"Bad Local Target Number"
"Bad Local LUN"
"Local SCSI ID Already Bound"
"No Such Binding"
"Target Not Found"
"Internal Call Failed”
"Insufficient Buff"
"Install Dir Not Found"
"Path Length"
"Partial data returned"
"Buffer Overflow"
"Response Timeout"
"Link Unavailable"
"Insufficient Resources"
"Invalid Tag"
"Invalid WWN"
"Node Bind Reboot"
"Node Bind Immediate Failed"
"Set PBind Failed"
"Bound to Diff SCSI ID"
"Resource Allocation"
"Wrong Bind Type"
"SCSI ID Already Bound"
"RSC Type"
"Authenticate Failed"
"Error Opening Resource"
"Reading Resource"
"Invalid FW Image Base"
"Short FW Image"
"Long FW Image"
"Bad Checksum"
"Incompatible Image"
"Buffer Allocation"
"No Local HBA"
"Insufficient Buffer Size"
"Not an Emulex Port"
"Download In Progress"
"Bad Data"
"SCSI Check Condition"
"Null Buffer"
"Get Driver Type"
"Unauthorized SAID"
"During Authentication"
"Authentication Keys"
"Failed Msg Authenticate"
"Security Not Active"
"Writing File"
"File Not Found"
"Reading File"
"Encryption"

"Decryption"
"Creating File"
"Header Data"
"File Exists"
"Bad Size for Rsp Buf"
"Access Control Data"
"Acquiring Auth. Sem."
"Invalid SAID Client"
"Invalid SAID Server"
"Security Not Installed"
"Driver Params: IOCTL Get"
"Driver Params: IOCTL Set"
"Driver Params: Conf File Open"
“Driver Params: Conf File Write"
"Driver Params: Internal"
"Driver Params: Not Dynamic"
"Driver Params: Parameter value out of range"
"Driver Params: Bad Param Name"
"Boot BIOS Not Present"
"Read Wakeup Parms"
"Update Wakeup Parms"
"Disable Boot BIOS"
“Authentication Driver parameter not enabled. Please go to driver parameter menu and enable this variable.ERROR: <error message>, request rejected."
"Host not found or unreachable"
"Mailbox Busy Retry"
"Mailbox Timed Out"
"Mailbox failed; Internal Driver Error"
"Adapter Busy"
"Error"
"Not Supported"
"Not Supported for Target Mode Adapters"
"Parameter Value Invalid"
"LUN Mask: Move Configuration Failed"
"LUN Mask: Configuration Settings Unavailable"
"LUN Mask: Error Accessing configuration Settings"
"LUN Mask: Set Lun Mask Failed"
"Bad Parameter Name"
"Config Region Not Initialized"
"WWN Management: operation NOT SUPPORTED"
"WWN Management: the supplied WWNs NOT VALID"
"WWN Management: the supplied WWNs ALREADY EXIST.\nPlease check your SAN for name duplication."
"WWN Management: feature NOT AVAILABLE.\n"
"WWN Management: operation in progress"
"DHCHAP local only"
"Exceeded operational range - Adapter stopped. See the product documentation."
"Invalid or Unavailable Virtual WWPN"
"Invalid Access Key"
"Link Down. Link must be up in order to create or delete vports."
"Target Not Found"
"Invalid Mount Point"
"Mount Point Already Exists"
"Not enough HBA or fabric resources"
"Could not read VPort AutoGen region"
"Could not write to VPort AutoGen region"
"Maximum number of auto-generated vports reached"
"Auto-Generated VPort Already Exists in SAN"
"VPort Already Exists"
"The Vports currently defined for this physical port must be deleted before attempting this operation"

"VPort has mounted LUN(s)"
"No volumes found on LUN. LUN is unallocated."
"LUN is offline or not ready"
"VDS is still starting. Please try again."
"LUN is not a disk type"
"HBA does not support vports."
"NPIV driver parameter is not set."
"SLI-3 is currently being used on port."
"Not connected to a fabric."
"Fabric switch does not support vports."
"Not enough fabric resources."
"Not enough HBA resources."
"Vport was created by a third party and cannot be deleted."
"Hardware or firmware does not support command."
"Hardware does not support command."
"Virtual WWPN was not found."
"Virtual Machine ID was not found."
"Unable to format WWN."
"Unable to retrieve data from the virtual machine server."
"MAL or MILI error"
"MAC address is not valid or does not exist."
"Action will exceed maximum allowed by CNA. "
"Entity does not exist."
"The specified state does not have a valid value."
"Target login failed."
"Target is logged in and cannot be removed."
"Failure discovering targets."
"Quality of Service version mismatch."
"Quality of Service protocol mismatch."
"CIM Error!!"
"Connection between the client and CIM server is already established"
"Specified address is improperly formed"
"Socket cannot be created"
"Socket cannot be created"
"Client connection failed"
"Connection timeout"
"Access to a CIM resource was not available to the client"
"The target namespace does not exist."
"One or more parameter values passed to the method were invalid."
"The specified class does not exist."
"The requested object could not be found"
"The requested operation is not supported."
"Operation cannot be carried out on this class since it has subclasses."
"Operation cannot be carried out on this class since it has instances"
"Operation cannot be carried out since the specified superClass does not exist."
"Operation cannot be carried out because an object already exists."
"The specified property does not exist:"
"The value supplied is incompatible with the type."
"The query language is not recognized or supported."
"The query is not valid for the specified query language."
"The extrinsic method could not be executed."
"The specified extrinsic method does not exist."