EMULEX®

HBAnyware® Command Line

Version 4.1

User Manual

Installing the HBAnyware CLI

Introduction

The HBAnyware Command Line Interface (CLI) is a comprehensive management utility for Emulex host bus adapters (HBAs) that provides support for commonly used commands without requiring installation of the HBAnyware Graphical User Interface (GUI). The HBAnyware CLI is a separate application with core driver kits that do not include the HBAnyware GUI. The HBAnyware CLI console application name is hbacmd and can be installed on Windows, Linux and versions of VMware ESX Server that include a Console Operating System (COS). A single operation is performed by entering 'hbacmd' at the command line. For syntax information and details on using the HBAnyware CLI, see "Using the CLI Client" on page 7.

Platforms that are supported with the HBAnyware CLI are detailed in Table 1.

Table 1: HBAnyware Command Line Interface Supported Platforms

Driver	Architecture	Operating System
Storport Miniport Driver	Intel x86, x64, and IA64 **Note:** Intel IA64 supported on Fibre Channel adapters only	Windows Server 2003 Windows Server 2008 Windows Vista
LPFC 7.4.x Driver	Intel x86, EM64T and AMD64	VMware ESX Server 3.5
LPFC 8.2.0.30.xvmw Driver	Intel EM64T and AMD64	VMware ESX Server 4.0
LPFC 8.2.0.33.3p Open Source Driver for Red Hat (RHEL) 5.1 and later, SUSE Linux Enterprise Server (SLES) 10-SP1 and later	Intel x86, EM64T, AMD64, PPC64 and IA 64	RHEL 5.1 and later, and SUSE Linux Enterprise Server 10-SP1 and later
LPFC 8.2.8.x Open Source Driver for SUSE Linux Enterprise Server 11	Intel x86, EM64T, AMD64, PPC64 and IA 64	SUSE Linux Enterprise Server 11

Installing the HBAnyware CLI Core Kit on a Windows System

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

- storportminiportcorekit_[version].exe

  [version] represents the complete version. For example: storportminiportcorekit_2-10a7-1e.exe

Installing the HBAnyware CLI Core Kit on a Linux System

The following must be installed before installing the core kit:

- For existing systems, the 8.2.x.x driver must be installed.
- For new systems, the specific driver RPM for your Linux version must be installed.

To install the core kit:

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. Type:

```
tar -xvf tarfilename
```

4. Change (use cd command) to the appropriate sub-directory associated to the target machine architecture and OS distribution.

5. su to 'root'.

6. Type:

```
rpm -Uhv *.rpm
```

7. Type:

```
/usr/sbin/hbanyware/hbacmd
```

to run the script utility.

Installing the HBAnyware CLI Core Kit on a Linux System With an Existing HBAnyware CLI Kit Installed

Follow these steps to install the HBAnyware CLI on a Linux system with an existing HBAnyware CLI kit installed:

1. Uninstall the Linux core kit. Type:

```
rpm -e elxlinuxcorekit-[version]
```

> **Note:** If this uninstallation script does not work, you have an older HBAnyware kit. In this case, follow the procedure for **Uninstalling Older HBAnyware Kits on Linux**.

2. Install the specific RPM for your driver for Linux version. Type this command (all in one line).

```
rpm -i elxlinuxcorekit-[version].rpm
```

> **Note:** You can also upgrade to a newer CLI kit when there is an existing CLI kit installed. This is useful if you modified some of the Core Kit configuration files, such as the authentication daemon's fcauth.conf file. When an upgrade is performed, RPM will use the previous configuration (when possible).
> To perform an upgrade, type:
> ```
> rpm -U elxlinuxcorekit-[version].rpm
> ```

Uninstalling Older HBAnyware Kits on Linux

1. Locate and download the full application tar file for the appropriate Linux version.

2. Untar the tar file and run the installation script to install the application.

   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 3. If the Security Configurator is not installed, proceed to step 4.

3. If the HBAnyware Security Configurator is installed, follow these steps:

   a. Log on as 'root'.

   b. Change (use cd command) to the directory to which you copied the tar file during installation.

   c. Run the uninstall script with the ssc parameter specified. Type:

   ```
   ./uninstall ssc
   ```

4. Uninstall the HBAnyware utility and the Application Helper Module:

    a. Log on as 'root'.

    b. Change (use cd command) to the directory to which you copied the tar file during installation.

    c. Uninstall any previously installed versions. Type:

```
./uninstall
```

Installing the HBAnyware CLI Core Kit on a New VMware System

To install the HBAnyware CLI on a new system, install the specific RPM for the driver for your VMware version.

Prerequisites

- The LPFC driver must be loaded.

Procedures

To install the HBAnyware CLI:

1. Log in as 'root'.
2. Copy the elxvmwarecorekit-<kit version>.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. Type:

```
rpm -U elxvmwarecorekit-esxNN-<kit version>.rpm
```

Where NN is 35 for an ESX 3.5 system or 40 for an ESX 4.0 system. The rpm contents are installed in /usr/sbin/hbanyware. The hbacmd utility is also located in this directory.

Installing the HBAnyware CLI on a VMware System with an Existing HBAnyware CLI Kit Installed

To install the HBAnyware CLI on a VMware system with an existing HBAnyware CLI kit installed:

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

```
# rpm -U elxvmwarecorekit-esxNN-<version>.rpm
```

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

Uninstalling Older HBAnyware Kits on VMware

To uninstall older kits on VMware:

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

```
elxvmwarecorekit-<kit version>
```

The rpm contents are installed in /usr/sbin/hbanyware. The hbacmd utility is also located in this directory.

3. Type:

```
rpm -e elxvmwarecorekit-<kit version>
```

Upgrading from CLI to Full-Featured HBAnyware

In Windows

To upgrade from the HBAnyware CLI to the full-featured HBAnyware utility:

1. From the desktop, run the .exe file that contains the full application kit.

   Running this executable file removes the HBAnyware CLI and installs a full-featured version of the HBAnyware utility that includes the CLI and the GUI.

In Linux

To upgrade from the HBAnyware CLI to the full-featured HBAnyware utility:

1. Uninstall the core kit, using rpm -e elxlinuxcorekit-[version]
2. Install the HBAnyware kit, using the install script within the tar file.

In VMware

The full-featured HBAnyware kit is not supported on VMware ESX Server.

Using the HBAnyware Utility Command-Line Interface

The Command Line Interface (CLI) Client component of the HBAnyware utility 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 SAN and display that information on the console.

Most of the CLI Client commands require one or more additional parameters that specify the nature of the command. A parameter used by many hbacmd commands specifies the World Wide Port Name (WWPN) of the adapter that is the target of the command.

For example, run the following command from the directory in which HBAnyware is installed to display the port attributes for the adapter with the specified WWPN:

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

hbacmd 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: For VMware ESX Server systems, the firewall on the ESX Server must be opened to manage systems remotely. To enable TCP port #23333, run the following commands:

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

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.

---

hbacmd 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:

1. Add the host IP with CIM credentials using the AddHost command. For example:

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

2. Set the default CIM credentials using the SetCimCred command.

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

> **Note:** If the command is specified with discovery method "m=CIM" and the CIM credentials (userid, password, or namespace) are not specified, then the default value for the missing CIM credential will be 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.

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

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

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 hbacmd will use 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 hbacmd will use 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 (").

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, GetLun-MaskbyTarget, PersistentBinding, RescanLuns, RemoveAllPersistentBinding, RemovePersistentBinding, RemoveAllPersistentBinding,SetPersistentBinding, BindingCapabilities, 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, SetCEEParams, GetXcvrData, LoadList, Reset and GetVPD.
All other hbacmd commands will 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 will show "Not Available". For details on parameters not supported for specific commands, see Table 2.
If you are running older adapter firmware or managing a remote host running HBAnyware version 4.0, the PG 1 and PG 2 settings and all bandwidth settings are disabled and the Enable Host Ethernet PFC Linkage is disabled.

Note: The following hbacmd commands are supported for managing COMSTAR target mode adapter ports: ListHBAs, Download, Reset, GetVPD, GetXcvrData, HbaAttributes, PortAttributes, ServerAttributes, GetPortStatistics, GetDriverParams, GetDriverParamsGlobal, SetDriverParam, SetDriverParamDefaults, SaveConfig, DriverConfig, ExportSanInfo, GetCEEParams, SetCEEParams, CEEDownload, SetPGBW, GetPGInfo, SetPGMemberships, SetCEEPGBW, GetFIPParams, SetFIPParam, GetFCFInfo, ListVMs, DeleteDumpFiles, GetDumpDirectory, GetRetentionCount and SetRetentionCount.

Parameters Not Supported

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
listhba	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			
	Opt ROM Version	X	X	X

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
	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			
	Max Frame Size			

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
	OS Device Name	X		
	Num Discovered Ports	X		
	Fabric Name	X		
serverattributes	Host Name			
	FW Resource Path	X	X	X
	DR 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			
	Link Failure Count			

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
	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 Time-out	X		
	Elastic Buffer Overrun	X		
	Arbitration Time-out	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 will display 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 HBA 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.

Note: The following hbacmd commands will be supported for managing target mode HBAs: ListHBAs, Download, Reset, GetVPD, GetXcvrData, HbaAttributes, PortAttributes, ServerAttributes, GetPortStatistics, GetDriverParams, GetDriverParamsGlobal, SetDriverParam, SetDriverParamDefaults, SaveConfig, DriverConfig, ExportSanInfo, GetCEEParams, SetCEEParams, CEEDownload, SetPGBW, GetPGInfo, SetPGMemberships, SetCEEPGBW, GetFIPParams, SetFIPParam, GetFCFInfo, and ListVMs.
All other hbacmd commands will return an error message "Not Supported for Target Mode Adapters".

Read-Only Mode

The CLI (HBACMD) does not allow the execution of certain commands when the HBAnyware utility is configured for read-only mode. An error message will be 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 a particular 'boot' area.

Help

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

Syntax: HbaCmd Help

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

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.

```
hbacmd Help BootParams <parameter name>
```

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 object adapter

Type - None

Help SetBootParams

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

Syntax: hbacmd Help SetBootParams

Description: Shows help for the SetBootParams command.

Parameters: None

Attributes Commands

HBAAttributes

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

Syntax: hbacmd HBAAttributes <WWPN>

Description: Shows a list of all adapter attributes.

Parameters:

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

PortAttributes

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

Syntax: hbacmd PortAttributes <WWPN>

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

Parameters:

WWPN - World Wide Port Name of the adapter 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>

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

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

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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

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

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 will specify the hash algorithm and DH group used in the DHCHAP associated with this connection. Failed status will include 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

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

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

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, 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

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

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

Syntax: hbacmd EnableBootCode <WWPN> <Flag>

Description: Enables or disables the boot code on the adapter. If the boot code is disabled, the adapter will not boot from SAN, regardless of the value for the EnableBootFromSan boot param. If it is enabled, the adapter will boot from the SAN if the EnableBootFromSan parameter is also enabled.

Parameters:

WWPN - World Wide Port Name of object adapters

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 appropriate RM_GetBootParamsXX call is made, and 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:** CEE commands are for CEE management of LP21000-M and LP21002-M HBAs only.

CEEDownload

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>

Description: Shows the Internal Host PFC flag value and DCBX mode (i.e. CEE version).

Parameters:

WWPN - World Wide Port Name of the adapter

SetCEEParam

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

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

Description: Set or clear the Internal Host PFC flag. SetCEEParam configures one of the CEE parameters.

Parameters:

Pausetype - 1 = Standard, 2 = Per Pause Priority

pfcflag - 0 = Clear, 1= Set

Uifporttype - 1 = Access, 2 = Trunk

> **Note:** The parameters pfcpriority and fcoepriority cannot be set with this command. If these parameters are specified an error message will be displayed. Use the command Set-PGMemberships to set these parameters. The parameters will continue to work in order to support backward compatibility with remote HBAnyware 4.0 host.

GetPGInfo

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

Syntax: hbacmd GetPGInfo <WWPN>

Description: Shows the three priority groups for the port with their priority membership and bandwidth percentages.

Parameters:

WWPN - World Wide Port Name of the adapter

SetPGMemberships

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

Syntax: hbacmd SetPGMemberships <WWPN> <PFC> <PG0> <PG1> <PG2>

Description: Set the priority group priorities and PFC priorities for the port. PFC is equivalent to the "pfcpriority" parameter (from the "SetCEEParam" command) in HBAnyware 4.0. The values must be set according to the following rules:

1. The priorities can range from 0 to 7.
2. Only a single priority can be specified for PG0. PG0 is equivalent to the "fcoepriority" parameter (from the "SetCEEParam" command) in HBAnyware 4.0.
3. PFC, PG1 and PG2 are specified by a comma separated list of values (e.g. 3,5,7).
4. PFC priority must contain at least the PG0 priority.
5. Each of the eight priorities must be specified only once in the PG0, PG1 and PG2 parameters.
6. Except for the PG0 priority, the PFC priorities can be specified only in the PG1 priority or the PG2 priority list, but not both.
7. The PG1 or PG2 priorities can be set to none. To specify none, use "-" for the argument.

Parameters:

WWPN - World Wide Port Name of the adapter

PFC - PFC Priority

PG0 - Priority Group 0 Priorities

PG1 - Priority Group 1 Priorities

PG2 - Priority Group 2 Priorities

Example:

This command sets PFC priority to 3, PG0 priority to 3, PG1 priority to 0, 2, 4, and 6 and PG2 priority to 1, 5, and 7.

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

SetPGBW

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

GetFIPParams

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

Syntax: hbacmd GetFIPParams <WWPN>

Description: Show the FIP parameters for the port.

Parameters:

WWPN - World Wide Port Name of the adapter

SetFIPParam

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

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

Description: Set the various FIP parameters for the port.

Parameters:

WWPN - World Wide Port Name of the adapter

fipstate - 0 = Disabled, 1 = Enabled

pfabric - 8 byte fabric name

pswitch - 8 byte switch name

vlanid - 2 byte VLAN ID

fcmap - 24 bit vendor OUI

The fcpmap parameter can only be set when the FIP state is disabled. The other parameters can only be set when the FIP state is enabled.

GetFCFInfo

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

Syntax: hbacmd GetFCFInfo <WWPN>

Description: Show the FCF information for the port.

Parameters:

WWPN - World Wide Port Name of the adapter

Diagnostic Commands

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

EchoTest

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>

Description: Shows the current beacon status for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose current beacon you want to view

GetXcvrData

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

Syntax: GetXcvrData <WWPN>

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

Parameters:

WWPN: World Wide Port Name of the adapter port

LoadList

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> <Type> <Count> <StopOnError> <Pattern>

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

> **Note:** External loopback tests can be run on hosts being managed locally or through TCP/IP-based management.

> **Note:** Internal and External Loopback tests are not available for LP2100 and LP21002 adapters.

Parameters:

WWPN - World Wide Port Name of the adapter on which you want to run loopback

Type - 0 = PCI LoopBack Test, 1 = Internal LoopBack Test, 2 = External LoopBack Test

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

LoopMap

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>

Description: Shows PCI configuration data for the adapter.

Parameters:

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

HBACMD has a command that displays wakeup parameter information, much the same way that HBAnyware displays it in its own control field.

Wakeup Parameters:

```
Initial Load:    0x02B81991 0x00555637
Flags:           0x00000000
Boot BIOS:       0x03B11713 0x00101303
SLI-1:           0x06B21991 0x00103411
SLI-2:           0x07B21991 0x00103411
Has Expansion Rom: 1
SLI-3:           0x00000000 0x00000000
SLI-4:           0x00000000 0x00000000
Expansion Rom:   0x03B11713 0x00101303
```

PostTest

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

SetBeacon

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

Syntax: hbacmd SetBeacon <WWPN> <BeaconState>

Description: Sets the current beacon status for the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter whose beacon you want to change

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

Wakeup

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: Whenever you chose to set a temporary driver parameter, that is "not permanently", the parameter is set on each adapter. This method is slightly different from the way it is done for a permanently changed driver parameter. Because of this, the temporarily changed driver parameter must be viewed as an adapter-specific change. To see this change, use GetDriverParameter rather than GetDriverParameterGlobal. Also, when you run SaveConfig, you must run it with the N option (adapter-specific). This will gather all the values saved on that adapter. This command must be used cautiously.

DriverConfig

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

---

Note: For VMware ESX Server: 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 4.0, type:
esxcfg-boot --sched-rdbuild
reboot

To rebuild the ramdisk for ESX 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 HBAs 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

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: 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 4.0, type:
> # esxcfg-boot --sched-rdbuild
> # reboot
>
> To rebuild the ramdisk for ESX 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: Allows you to change the value of a driver parameter and designate 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. Because P and B are not supported on VMware ESX Server you can only use G or N.

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: 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 4.0, type:
> # esxcfg-boot --sched-rdbuild
> # reboot
>
> To rebuild the ramdisk for ESX 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

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: Displays 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: Displays the dump file directory associated with the adapter.

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: Displays 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.

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

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> <FileName>

Description: Loads the firmware image to the adapter.

Parameters:

WWPN - World Wide Port Name of the adapter 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.

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 will show the data in xml format.

Description: For reporting purposes, captures the adapter 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 discovered by Fibre Channel (in-band) and by TCP/IP (out-of-band).

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

Parameters: None

Reset

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 HBAnyware CLI Client application.

Parameters: None

GetCimCred

Supported by: Windows, Solaris SFS and Linux

Syntax: hbacmd GetCimCred

Description: Shows the encrypted value of the password.

Parameters: None

SetCimCred

Supported by: Windows, Solaris SFS and Linux

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

Description: Set the default CIM credentials. All the 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 and Linux

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 and Linux

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: The PersistentBinding, SetPersistentBinding, RemovePersistentBinding, Remove-AllPersistentBinding, BindingCapabilities, BindingSupport and SetBindingSupport commands are not supported for 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 31.

VPort Commands

<…> = 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 will be 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 will be 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 and the virtual machine name 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 3.5u4 and ESX Server 4.0 only.

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

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:** 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 will be 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.

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

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

ASCII Strings that May Be Returned

"Invalid Handle"
"Invalid Argument"
"Illegal WWN"
"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"
"Existing Registration"
"Invalid Tag"
"Invalid WWN"
"Create Event Failed"
"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"
"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"
"Failed Client Authenticate"
"Security Not Active"
"Writing File"

"File Not Found"
"Reading File"
"Encryption"
"Decryption"
"Creating File"
"Header Data"
"Revision 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: Registry Get"
"Driver Params: Registry Set"
"Driver Params: Conf File Open"
"Driver Params: Conf File Write"
"Driver Params: Internal"
"Driver Params: Not Dynamic"
"Driver Params: 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.";
 request rejected."
"Host not found or unreachable"
"Mailbox Busy Retry"
"Mailbox Timed Out"
"Mailbox failed; Internal Driver Error"
"Adapter Busy"