

HP StorageWorks Storage System Scripting Utility reference

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About this guide

This guide describes how to configure and use the HP StorageWorks Storage System Scripting Utility (the utility) to manage and monitor HP StorageWorks Enterprise Virtual Arrays. It provides information about:

- Starting the utility
- Utility commands and syntax

Intended audience

This guide is intended for operators and administrators of storage area networks that include supported HP arrays. The audience is assumed to be skilled in:

- Storage area networks
- Operating systems
- HP StorageWorks Command View EVA
- HP StorageWorks Enterprise Virtual Array (EVA)

Prerequisites

This guide assumes you have installed and configured the following HP products:

- HP StorageWorks EVA hardware and controller software
- HP StorageWorks Command View EVA

For supported arrays, management server hardware and software, and replication environments, including restrictions, see *HP StorageWorks Enterprise Virtual Array compatibility reference*.

Related documentation

The following documents provide related information:

- *HP StorageWorks Command View EVA installation guide*
- *HP StorageWorks Command View EVA online help* (accessible from the HP Command View EVA user interface)
- *HP StorageWorks Command View EVA release notes*
- *HP StorageWorks Continuous Access EVA administrator guide*
- *HP StorageWorks Enterprise Virtual Array user guide*
- *HP StorageWorks Enterprise Virtual Array compatibility reference*
- *HP StorageWorks Enterprise Virtual Array license key installation instructions*

You can find these documents from the Manuals page of the HP Business Support Center web site:

<http://www.hp.com/support/manuals>

In the Storage section, click **Storage software** and then select your product.

Document conventions and symbols

Table 1 Document conventions

Convention	Element
Blue text: Table 1	Cross-reference links and e-mail addresses
Blue, underlined text : http://www.hp.com	Web site addresses
Bold text	<ul style="list-style-type: none">• Keys that are pressed• Text entered into a GUI element, such as a box• GUI elements that are clicked or selected, such as menu and list items, buttons, and check boxes
<i>Italic text</i>	Text emphasis
Monospace text	<ul style="list-style-type: none">• File and directory names• System output• Code• Commands, their arguments, and argument values
<i>Monospace, italic text</i>	<ul style="list-style-type: none">• Code variables• Command variables
Monospace, bold text	Emphasized monospace text

 **CAUTION:**

Indicates that failure to follow directions could result in damage to equipment or data.

 **IMPORTANT:**

Provides clarifying information or specific instructions.

 **NOTE:**

Provides additional information.

 **TIP:**

Provides helpful hints and shortcuts.

HP technical support

For worldwide technical support information, see the HP support website:

<http://www.hp.com/support>

Before contacting HP, collect the following information:

- Product model names and numbers
- Technical support registration number (if applicable)
- Product serial numbers
- Error messages
- Operating system type and revision level
- Detailed questions

Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business web site: <http://www.hp.com/go/e-updates>.

After registering, you will receive e-mail notification of product enhancements, new driver versions, firmware updates, and other product resources.

HP web sites

For additional information, see the following HP web sites:

- <http://www.hp.com>
- <http://www.hp.com/go/storage>
- http://www.hp.com/service_locator
- <http://www.docs.hp.com>

Documentation feedback

HP welcomes your feedback.

To make comments and suggestions about product documentation, please send a message to storedocsFeedback@hp.com. All submissions become the property of HP.

Product feedback

To make comments and suggestions about HP Command View EVA, please send a message to CVfeedback@hp.com.

1 Getting started

The HP StorageWorks Storage System Scripting Utility (the utility) is a command line interface that allows you to configure and control EVA arrays. Use the utility to script and run repetitious and complex configuration tasks. Use HP StorageWorks Command View EVA, the graphical user interface, for simple or initial configuration tasks.



This chapter describes how to start and use the utility.

Installing the utility

The utility is installed on the management server when you install HP Command View EVA. To install the utility on a host, see *HP StorageWorks Command View EVA installation guide*.

Starting the utility

To start the utility:

1.  Click the SSSU desktop shortcut  to open the utility.
2. When the utility opens, you are prompted to enter the following information:
 - **Manager:** The server name or IP address of the management server. If you are logged in to the management server, you can use `localhost`.
 - **Username:** The account user name that was created for you during HP Command View EVA installation.
 - **Password:** The account password that was created for you during HP Command View EVA installation.
3. To view available arrays, enter the following command:

```
LS SYSTEM
```
4. To select an array to manage, enter the following command:

```
SELECT SYSTEM system_name
```

Use the `SET OPTIONS` command (see “[SET OPTIONS](#)” on page 72) to control how the utility behaves for the current session. Each time you start the utility, the default options are reinstated.

Syntax

`SSSU arguments`

Arguments are scripts or individual commands.

If you start the utility with arguments, the commands are executed and shown in the command prompt. After the commands are executed, the operating system command prompt is displayed.

If you start the utility without arguments, the prompt `NoSystemSelected>` is displayed.

Examples

To start the utility and run the `snapD1.txt` file from the current directory, enter:

```
SSSU "FILE snapD1.txt"
```

To start the utility and run multiple commands, enter:

```
SSSU "cmd1" "cmd2" "cmd3"
```

To include a file path name, enter:

```
SSSU "file \"c:\program files\myotherscript.txt\""
```



IMPORTANT:

Enclose file names, commands, and path names that contain spaces in quotation marks.

Default folders and path names

The following default root folders organize array resources:

- Hosts
- Disk Groups
- Data Replication
- Hardware
- Virtual Disks

You can create folders within the `Hosts` and `Virtual Disks` root folders, but you cannot create or delete root folders. See [“ADD FOLDER”](#) on page 23.



IMPORTANT:

Enclose path and resource names that include spaces in quotation marks. For example:

```
ADD VDISK "\Virtual Disks\new_code" SIZE=10
```

Shortened path names (aliases)

You can use shortened path names (sometimes called aliases) for resources when entering commands. If you do not specify a full name for a resource, the utility checks to see if you are using an alias.

You must specify LUNs with a full name because LUNs are not uniquely identified by numbers. Several virtual disks may contain LUN 1. For example:

```
LS lun \Hosts\MainServer\3
```

The following examples show how to use aliases:

- **Specifying a virtual disk**
If you have `\virtual_disks\my_virdisk`, you can enter `my_virdisk` for the resource.
- **Specifying a disk group**

If you have "\Disk Groups\Default Disk Group", you can enter "Default Disk Group" for the resource.

- **Specifying a host**

If you have `SET host \Hosts\h1 name=h2`, you can enter `set host h1 name=h2`.

- **Adding a snapshot**

If you want to add a snapshot *mynap*, instead of entering `add snapshot mysnap vdisk="\Virtual Disks\mydisk\ACTIVE,"` you can enter `add snapshot mysnap2 vdisk=mydisk`.

- **Deleting a virtual disk**

If you want to delete the virtual disk *mydisk*, instead of entering `"\Virtual Disks\mydisk\,"` you can enter `delete vdisk mydisk`.

Formatting output

The default command output is:

```
XML element : value
```

To specify XML output, add the XML option. For example:

```
LS vdisk vd01 XML
```

This command produces the following XML output:

```
<objectname>\Virtual Disks\vd01\ACTIVE</objectname>
```

Commands requiring a license

Some utility commands require an HP Business Copy EVA license, an HP Command View EVA license, or an HP Continuous Access EVA license. Attempting to use any of the commands listed in [Table 2](#) without having the required license returns an error message. You must enter the appropriate license in HP Command View EVA to continue. See *HP StorageWorks Command View EVA user guide* for instructions.

Table 2 Commands requiring a license

Command	HP Command View EVA license	HP Business Copy EVA license	HP Continuous Access EVA license
Add vdisk	X		
Expanding vdisk ¹	X		
Add Disk Group	X		
Adding disk to disk group	X		
Add Snapclone	X	X	
Detaching Mirrorclone	X		

Command	HP Command View EVA license	HP Business Copy EVA license	HP Continuous Access EVA license
Adding DR group ²	X		X
Adding vdisk to DR group ²	X		X
Add Snapshot ³		X	
Add Mirrorclone		X	

1. Requires valid HP Command View EVA and HP Continuous Access EVA licenses at source and destination if the virtual disk is a member of a DR group.
2. Requires a valid HP Command View EVA license at destination and a valid HP Continuous Access EVA license at source and destination.
3. An HP Business Copy EVA license is not required if the source virtual disk already has snapshots.

Administrator and user commands

There are two types of users: *HP Storage Administrators* and *HP Storage Users*. HP Storage Administrators have the privilege to execute the complete set of commands. The complete set of commands is listed in [Table 4](#) on page 93. HP Storage Users may execute only the subset of commands that are listed in [Table 3](#).

Table 3 HP Storage User commands

CAPTURE	CONFIGURATION
	VALIDATE
EMVERSION	
EXIT	
FILE	
HELP	
LS	CABINET
	CONTAINER
	CONTROLLER
	DISK
	DISK_GROUP
	DISKSHELF
	DR_GROUP
	FOLDER

	HOST
	ISCSI_CONTROLLER
	ISCSI_HOST
	ISCSI_IPHOST
	ISCSI_LUN
	LUN
	MANAGER
	OPTIONS
	SNAPSHOT
	SYSTEM
	TIME
	VDISK
	WORLD_WIDE_NAME
PAUSE	
SELECT	MANAGER
	SYSTEM
SET	OPTIONS

Managing SSSU passwords

In the `SELECT MANAGER` command, the `Password` switch is optional, which can assist you in the removal of passwords from scripts. When the `Password` switch is not used with the `SELECT MANAGER` command, SSSU looks for the password in the password file, based on Manager and Username. If the password is not available for the corresponding Manager and Username combination, SSSU exits. When the `Password` switch is used with the `SELECT MANAGER` command, SSSU does not look for the password in the password file, even if the password is wrong. For information on the commands that govern password authentication, see [“Password Authentication commands”](#) on page 58.

2 Commands

This chapter describes the commands and options available in the utility, including syntax and examples. The commands are presented in alphabetical order.

Command tips

When you issue commands, remember:

- The syntax for each command includes required options.
- You can use aliases to specify names.
- If a path name contains a space, enclose the entire name in quotation marks.
- An equal sign in the option name indicates an entry is required with the option.
- You can use shortcuts for command names. For example, a shortcut for `EMVERSION` could be `EM`. (Note that using just the letter `E` would not make the command unique because `EXERCISE_DISK` also starts with the letter `E`.)
- Command keywords are not case sensitive. User-created object names may be case-sensitive if they are intentionally created with upper and lowercase characters.
- To view a list of options for a command, enter a question mark (?) after the command or option name. For example, `ADD ?` displays the options available for the `ADD` command, and `ADD SYSTEM ?` displays the options available for the `ADD SYSTEM` command (see “[HELP](#)” on page 49).
- Although this reference shows commands spanning more than one line, always enter the command on one line.
- You can perform only one property change per `SET` command.

ADD CONTAINER

The `ADD CONTAINER` command reserves disk space for creating copies of virtual disks (snapshots and snapclones). Reserving space allows you to quickly and safely create a copy because the space for the copy is already reserved and available. You must specify the size of the container when you create it (there is no default).

After you create the copy, it becomes another virtual disk. You can reverse the process and convert a virtual disk to a container using the `SET VDISKvdisknameCHANGE_INTO_CONTAINER` command.

If you do not specify a disk group, the copy is created in the default disk group. If the default disk group does not exist, an error message is generated.

NOTE:

When you delete a container, the option `WAIT_FOR_COMPLETION` is ignored. After deletion, the container may still appear during an `LS` command. This is because the container is deleted in the background and will continue to appear until it is fully deleted.

Syntax

```
ADD CONTAINER container_name SIZE= container_size
```

Options

The following options are available with the `ADD CONTAINER` command.

DISK_GROUP=

The name of the disk group in which you want to create the container.

REDUNDANCY=

The data protection level of the virtual disk. If not specified, the default is `vraid1`.

- `vraid0`—Provides no data protection. It distributes data among its member disks into stripes and uses all members to process I/O requests. This method has no overhead associated with duplication of information and provides the highest performance.
- `vraid1`—Provides the highest level of data protection but uses the most space. It copies data written to one disk to a backup disk. In a multidisk configuration, `vraid1` mirrors each pair of disks to each other. These disk pairs can then be striped to create a virtual disk.
- `vraid5`—Provides a moderate level of data protection. It distributes the parity information among all member disks. If one drive fails, the failed disk can be re-created after it is replaced.

SIZE=

The size of the container in gigabytes (GB).

ADD COPY

The `ADD COPY` command creates a copy of the specified virtual disk. A copy is a new virtual disk. The `ADD COPY` command is equivalent to creating a snapclone in HP Command View EVA.

Syntax

```
ADD COPY copy_name VDISK= virtual_disk_name
```

Options

The following options are available with the `ADD COPY` command.

CONTAINER=

The name of the container to be used for the copy. The container must already exist to use this option. If not specified, the `ADD COPY` command dynamically allocates the storage before creating the copy.

DISK_GROUP=

The name of the disk group in which you want to create the copy. The disk group must already exist to use this option. If not specified, the `ADD COPY` command uses the same group as the source virtual disk.



NOTE:

The source virtual disk must be set to `WRITECACHE= writethrough` before a preallocated snapclone (using a container) can be created. See “[SET VDISK](#)” on page 75 for more information.

NOWAIT_FOR_COMPLETION

Does not wait for the command to finish before displaying the utility command prompt or running another command or script. Some operations are invalid until the initial operation finishes in the background.

OS_UNIT_ID=

The ID presented to the host operating system. If set to zero, no ID is presented to the host. This option is used for IBM AIX (set to zero), OpenVMS (required), and Tru64 UNIX (recommended). Other host operating systems ignore this option.

REDUNDANCY

The data protection level of the virtual disk. If not specified, the default is the same as the source virtual disk.

- `Vraid0`—Provides no data protection. It distributes data among its member disks into stripes and uses all members to process I/O requests. This method has no overhead associated with duplication of information and provides the highest performance.
 - `Vraid1`—Provides the highest level of data protection but uses the most space. It copies data written to one disk to a backup disk. In a multidisk configuration, `Vraid1` mirrors each pair of disks to each other. These disk pairs can then be striped to create a virtual disk.
 - `Vraid5`—Provides a moderate level of data protection. It distributes the parity information among all member disks. If one drive fails, the failed disk can be re-created after it is replaced.
- For more information about Vraid levels, see the HP StorageWorks Replication Solutions Manager documentation.

VDISK=

The name of the virtual disk to be copied.

WAIT_FOR_COMPLETION

Waits for the command to finish before displaying the utility command prompt or running another command or script. For virtual disks larger than 1 TB, using this option can result in a long waiting period before the utility command prompt appears.

WORLD_WIDE_LUN_NAME=

The world wide LUN name of the virtual disk.

Examples

Create a copy of `payroll` named `wednesday_nite`:

```
ADD COPY wednesday_nite VDISK="\Virtual Disks\payroll"
```

Create a copy of `daily_biz` named `save_reports` within the specified disk group:

```
ADD COPY save_reports VDISK="\Virtual Disks\daily_biz"  
DISK_GROUP="\Disk Groups\small_disks"
```

 **NOTE:**

When you use the `ADD COPY` command, you are creating a virtual disk. To delete the virtual disk, use the `DELETE VDISK` command.

ADD DISK_GROUP

The `ADD DISK_GROUP` command adds disk groups to the array.

Syntax

```
ADD DISK_GROUP group_name
```

Options

The following options are available with the `ADD DISK_GROUP` command.

COMMENT=

Associates a user-defined comment with the disk group. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

DEVICE_COUNT=

The number of physical disks to use for this group. The limit is the number of available disks in the array. The default and minimum value is 8.

DISKGROUP_DISKTYPE=

Determines the types of disks to be considered for creating the disk group. The default value is `online`.

- `online`—Only online Fibre Channel disks are considered for creating the default disk group.
- `Near-online`—Only near-online Fibre Channel disks are considered for creating the default disk group.

OCCUPANCY_ALARM=

The point when a defined percentage of space is used. When this point is reached, an event is generated and sent to the management server (or the host) informing the administrator that the group is reaching full capacity. Do not use the percent sign (%) after the number. The default is 95%.

SPARE_POLICY=

Determines the amount of storage space, if any, set aside for use in the event that disks fail. The default is `single`. The space set aside is not in numbers of physical disks. It is the equivalent amount of storage space spread across all disks.

- `None`—Reserves no space within a disk group to allow for data reconstruction in case of a disk drive failure

 **NOTE:**

Using a spare policy of `none` can cause data loss and is not recommended.

- `Single`—Reserves space within a disk group to allow for data reconstruction in case of a failure of one disk drive
- `Double`—Reserves space within a disk group to allow for data reconstruction in case of a failure of two disk drives

Example

The following example creates a new disk group, `human_resources`. It has 12 physical disks with the equivalent of one disk set aside as a spare, and sends an event to the array when 75% of capacity is reached.

```
ADD DISK_GROUP "\Disk Groups\human_resources" DEVICE_COUNT=12
SPARE_POLICY=SINGLE OCCUPANCY_ALARM=75
```

ADD DR_GROUP

The `ADD DR_GROUP` command creates a data replication (DR) group containing the specified source virtual disk. This source virtual disk is replicated on the specified destination array. For information about DR groups, see *HP StorageWorks Continuous Access EVA administrator guide*.

Syntax

```
ADD DR_GROUP dr_group_name VDISK= virtual_disk_name DESTINATION_SYSTEM=
destination_array_name
```

Options

The following options are available with the `ADD DR_GROUP` command.

ACCESSMODE=

The access rights for a connected host. Possible values are `presentonly`, `readonly`, and `disable`. The default is `disable`, which is the recommended setting. In the user interface, the `disable` setting displays as `none`.

 **NOTE:**

Setting `ACCESSMODE` to `readonly` or `presentonly` can seriously impede the host operating system.

COMMENT=

Associates a user-defined comment with the DR group. The maximum number of characters is 64 (including spaces) and the string must be enclosed in quotes.

DESTINATION_DISK_GROUP=

The disk group in which the virtual disk on the destination array is created.

DESTINATION_SYSTEM=

The destination array on which the virtual disk is created.

DESTINATION_VDISK_NAME=

The name of the virtual disk created on the destination array. By default, the virtual disk name on the destination array is the same as on the source array.

LINK_DOWN_AUTOSUSPEND=

When enabled, DR group replication is automatically suspended if the link between the arrays goes down. Replication remains suspended even if the link becomes active again. Possible values are `enable` and `disable`.

LOG_DESTINATION_DISK_GROUP=

The disk group for the DR log disk on the destination array.

LOG_SOURCE_DISK_GROUP=

The disk group for the DR log disk on the source array.

MAX_LOG_SIZE=

The maximum size of the DR log disk. If you specify a size, the value must be between 136 MB and 2097511 MB and entered in blocks of 512 bytes (278528 through 42949672965). If left blank or set to 0 (zero), the controller software calculates the optimum log size for the available space.

NOTE:

If you specify a size that exceeds the available disk space, the command completes successfully and the DR group is created, but the specified size is not available. If disks are added to the configuration, the controller allocates more data for the DR log.

TARGETREDUNDANCY=

The redundancy level of the virtual disk being created on the destination array.

VDISK=

The name of the source virtual disk being added to the DR group. A destination virtual disk is automatically created on the destination array.

WRITEMODE=

The I/O interaction between the destination and the source. Possible values are `synchronous` (default) and `asynchronous`.

Example

The following example creates a DR group named `Transactions` that contains the source virtual disk `\Virtual Disks\Hawaii`. This DR group will connect to the destination array `remote_cell`, on which the destination virtual disk `\Virtual Disks\Hawaii` (same as the source by default) is created and added to the destination DR group.

```
ADD DR_GROUP Transactions DESTINATION_SYSTEM=remote_cell
VDISK="\Virtual Disks\Hawaii"
```

ADD FOLDER

The `ADD FOLDER` command creates a new folder within the specified folder to aid in organizing your array. You can only create folders under the `Virtual Disks` and `Hosts` root folders. You cannot create root folders.

For example, if you have a controller that is serving Human Resources (HR) and Engineering, you could create four folders—two for the virtual disks and two for the hosts:

- `\Virtual Disks\Engineering` and `\Virtual Disks\HR`
- `\Hosts\Engineering` and `\Hosts\HR`

Creating these folders allows you to put Engineering virtual disks and hosts in the Engineering folders and HR virtual disks and hosts in the HR folders. This makes it easier to keep track of the components in the array. To nest folders inside folders, you must add one folder at a time.

Syntax

```
ADD FOLDER folder_name
```

Options

The following option is available with the `ADD FOLDER` command.

COMMENT=

Associates a user-defined comment with the folder. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

Examples

Create a new folder `human_resources` within the root folder `Hosts`:

```
ADD FOLDER \Hosts\human_resources
```

Create the `engineering` folder within the existing folder structure:

```
ADD FOLDER"\Virtual Disks\colorado\colorado springs\engineering"
```

ADD HOST

The `ADD HOST` command adds a host and its world wide name (WWN) to the list of hosts that can connect to virtual disks in the current array.

The `ADD HOST` command adds one Fibre Channel adapter (FCA) only. Use the `SET HOST` command to add each subsequent FCA.

Syntax

```
ADD HOST host_name WORLD_WIDE_NAME= FCA-wwn
```

Options

The following options are available with the `ADD HOST` command. The `WORLD_WIDE_NAME` option is required to ensure that HP Command View EVA recognizes the host you are adding.

COMMENT=

Associates a user-defined comment with the host. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

IP=

The network IP address. If the IP address is not specified, the name of the host is used as a DNS name.

OPERATING_SYSTEM=

The operating system of the specified host. To set a default operating system, select **User interface options** from Management Server Options window in the user interface. Select one of the following operating systems (they are listed as they appear in the utility):

- HPUX
- IBMAIX
- LINUX
- OPEN_VMS
- SOLARIS
- TRU64
- UNKNOWN
- WINDOWS
- WINDOWSLH
- CUSTOM= (You must include the equal sign after CUSTOM and the value must be 16-digit hexadecimal characters.)



NOTE:

Mac OS X is also a supported operating system. If the host is Mac OS X, select LINUX as the operating system.

WORLD_WIDE_NAME=

The WWN of the FCA.

Example

Add the host `development` with the WWN of `5000-1fe1-ff00-0000`:


```
ADD HOST \Hosts\development WORLD_WIDE_NAME=5000-1fe1-ff00-0000
```

ADD ISCSI_CONTROLLER

The `ADD ISCSI_CONTROLLER` command performs an automatic discovery of iSCSI controllers or adds an iSCSI controller.

Syntax

```
ADD ISCSI_CONTROLLER
```

Options

The following option is available with the `ADD ISCSI_CONTROLLER` command.

IP=

Enter the IP address of an iSCSI controller or enter `auto` to perform an automatic discovery.

Example

Add an iSCSI controller with the management port IP address of 16.112.98.124:

```
ADD ISCSI_CONTROLLER IP=16.112.98.124
```

ADD ISCSI_HOST

The `ADD ISCSI_HOST` command adds an iSCSI host and its iSCSI IP host to the list of iSCSI hosts that can connect to virtual disks in the current array. It adds one iSCSI IP host only.

Syntax

```
ADD ISCSI_HOST iSCSI_host_name ISCSI_IPHOST= iSCSI_IP_host_name
```

Options

The following options are available with the `ADD ISCSI_HOST` command. The `ISCSI_IPHOST` option is required to ensure that HP Command View EVA recognizes the iSCSI host you are adding.

COMMENT=

Associates a user-defined comment with the iSCSI host. The maximum number of characters is 128, including spaces; the string must be enclosed in quotes.

OPERATING_SYSTEM=

The operating system of the specified iSCSI host. Select one of the following:

- HPUX
- LINUX
- OPEN_VMS
- OTHER

- SOLARIS
- VMWARE
- WINDOWS

 **NOTE:**

Mac OS X is also a supported operating system. If the host is Mac OS X, select LINUX as the operating system.

Example

Add the iSCSI host named development with the iSCSI IP host named iqn.1991-05.com.microsoft:aittest5.americas.mycompany.net:

```
ADD ISCSI_HOST \Hosts\development ISCSI_IPHOST=iqn.1991-05.com.  
microsoft:aittest5.americas.mycompany.net
```

 **NOTE:**

In the graphical user interface, LINUX displays as Linux/OS X.

ADD ISCSI_LUN

The `ADD ISCSI_LUN` command makes virtual disks available to iSCSI IP hosts.

 **NOTE:**

A virtual disk is eligible for iSCSI initiator presentation only after it is presented to the iSCSI Fibre Channel host.

Syntax

```
ADD ISCSI_LUN VDISK= virtual_disk_name ISCSI_HOST= iSCSI_host_name
```

Options

The `VDISK=` and `ISCSI_HOST=` options are required.

VDISK=

The name of the virtual disk that is presented to the host.

ISCSI_HOST=

The name of the iSCSI host to which the LUN is presented.

Example

Present the payroll virtual disk to the iSCSI host development:

```
ADD ISCSI_LUN VDISK="\Virtual Disks\payroll" ISCSI_HOST=development
```

ADD LICENSES

The `ADD LICENSES` command adds licenses of an array to HP Command View EVA license data. The file containing the license information should be located on the same system on which SSSU is running.

The following details apply to the license file:

- Each license key string in the file should start on a new line.
- The file can contain a maximum of 20 licenses.
- The acceptable file extensions are `.dat` and `.txt`.

Syntax

```
ADD LICENSES license_filepath
```

Example

Add the license information included in file `C:\licenses\test_array_licenses.txt`:

```
ADD LICENSES C:\licenses\test_array_licenses.txt
```

ADD LUN

The `ADD LUN` command makes virtual disks available to a host.

Syntax

```
ADD LUN LUN_number HOST= host_name VDISK= virtual_disk_name
```

Options

The `HOST=` and `VDISK=` options are required with the `ADD LUN` command.

HOST=

The name of the host to which the LUN is presented.

VDISK=

The name of the virtual disk that is presented to the host. A mirrorclone can only be presented to a host if it is fractured.

Examples

Add LUN 12, which presents the `payroll` virtual disk to the host `sanfran`:

```
ADD LUN 12 VDISK="\Virtual Disks\payroll" HOST=\Hosts\sanfran
```

Using aliases, add LUN 175, which presents the `user_disk` virtual disk to the host `corporate`:

```
ADD LUN 175 VDISK=user_disk HOST=corporate
```

ADD MIRRORCLONE

The `ADD MIRRORCLONE` command creates a copy of a source virtual disk. The mirrorclone can remain synchronized with the virtual disk or you can fracture the link to create a point-in-time copy.

Syntax

```
ADD MIRRORCLONE mirrorclone_name VDISK= virtual_disk_name CONTAINER=  
container_name
```

Options

The following options are required with the `ADD MIRRORCLONE` command.

CONTAINER=

The name of the container to be used for the virtual disk mirrorclone. The container must already exist.

VDISK=

The source virtual disk of the mirrorclone.

Example

Create the mirrorclone `test2` from the virtual disk `payroll`:

```
ADD MIRRORCLONE test2 VDISK="\Virtual Disks\payroll" CONTAINER=container1
```

ADD MULTISNAP

The `ADD MULTISNAP` command creates multiple snapshots and snapclones, up to 10 at a time. You can combine snapshots and snapclones.

Syntax

```
ADD MULTISNAP snapname VDISK= source_virtual_disk_name CONTAINER= container_name  
SNAPSHOT|SNAPCLONE snapname VDISK= source_virtual_disk_name CONTAINER= container_name  
SNAPSHOT|SNAPCLONE snapname VDISK= source_virtual_disk_name CONTAINER=  
container_name SNAPSHOT|SNAPCLONE snapname...
```

Options

The following options are available with the `ADD MULTISNAP` command.

VDISK=

The name of the virtual disk to be copied.

CONTAINER=

The name of the container to be used for the virtual disk copy. The container must already exist.

SNAPSHOT

Creates a snapshot of the virtual disk.

SNAPCLONE

Creates a snapclone (copy) of the virtual disk.

Example

Create a snapshot of the virtual disk `payroll` and snapclones of the virtual disks `hrd` and `finance`:

```
ADD MULTISNAP tonightsnap VDISK="\Virtual Disks\payroll"  
CONTAINER=container1 SNAPSHOT hrdkp VDISK="\Virtual Disks\hrd"  
CONTAINER=container2 SNAPCLONE financebkp VDISK="\Virtual Disks\finance"  
CONTAINER=container3 SNAPCLONE
```

ADD SNAPSHOT

The `ADD SNAPSHOT` command creates a dependent, point-in-time copy of a virtual disk. It is dependent because data is not actually copied to the snapshot until it is overwritten on the source.

Syntax

```
ADD SNAPSHOT snapshot_name VDISK= source_virtual_disk_name
```

Options

The following options are available with the `ADD SNAPSHOT` command.

ALLOCATION_POLICY=

Indicates how the space for the snapshot is to be allocated:

- **Demand**—The array allocates only enough space to store metadata and pointers to the source data. As the source is overwritten, the array allocates more space and copies the original data to the snapshot.
- **Fully**—The array allocates space equal to the capacity of the source virtual disk, plus space for metadata and pointers to the source data. As the source is overwritten, the array copies the original data to the snapshot.

CONTAINER=

The name of the container to be used for the virtual disk snapshot. The container must already exist.

OS_UNIT_ID=

The ID presented to the host operating system. If set to zero, no ID is presented to the host. This option is used for IBM AIX (set to zero), OpenVMS (required), and Tru64 UNIX (recommended). Other host operating systems ignore this option.

REDUNDANCY=

The data protection level of the virtual disk. If not specified, the default is the same as the source virtual disk.

- `Vraid0`—Provides no data protection. It distributes data among its member disks into stripes and uses all members to process I/O requests. This method has no overhead associated with duplication of information and provides the highest performance.
- `Vraid1`—Provides the highest level of data protection but uses the most space. It copies data written to one disk to a backup disk. In a multidisk configuration, `Vraid1` mirrors each pair of disks to each other. These disk pairs can then be striped to create a virtual disk.
- `Vraid5`—Provides a moderate level of data protection. It distributes the parity information among all member disks. If one drive fails, the failed disk can be re-created after it is replaced.

VDISK=

The source virtual disk for the snapshot. A fractured mirrorclone can be the source of a snapshot.

WORLD_WIDE_LUN_NAME

The world wide LUN name of the virtual disk.

Examples

Create the snapshot `payroll_backup` from the virtual disk `payroll` that uses capacity only as needed:

```
ADD SNAPSHOT payroll_backup VDISK=" \Virtual Disks\payroll"  
ALLOCATION_POLICY=demand
```

Create the snapshot `wed_nite_biz` from the virtual disk `daily_biz` while reserving all capacity required to create the snapshot:

```
ADD SNAPSHOT wed_nite_biz VDISK=daily_biz ALLOCATION_POLICY=fully
```

NOTE:

To delete snapshots created with `ADD SNAPSHOT`, use the `DELETE VDISK` command.

ADD SYSTEM

The `ADD SYSTEM` command initializes an array and creates a default disk group. You must select an uninitialized array before issuing the `ADD SYSTEM` command. If the array is already initialized, the command is rejected.

HP recommends that you use unique names for each array. For example, if you are adding an array to a SAN and the name for that array is the same as another array that exists in the SAN, you should change the name of the new array before adding it to the SAN. A SAN that contains arrays with duplicate names may result in unpredictable behavior.

Use the `LS SYSTEM` command (see “[LS SYSTEM](#)” on page 56) to display a list of uninitialized arrays.

After initialization is complete, the utility changes the default prompt back to `NoSystemSelected`.

When you initialize an array, the name of the array changes. Therefore, you must reselect the array. Issue the `SELECT SYSTEM` command using the new name of the array.

**NOTE:**

“Configuring an array using the utility” on page 83 shows the sequence of commands to enter to initialize an array.

Syntax

```
ADD SYSTEM system_name
```

Options

The following options are available with the `ADD SYSTEM` command.

COMMENT=

Associates a user-defined comment with the array. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

CONSOLE_LUN_ID=

The LUN used for console communication after array creation. If set to zero, no console LUN is presented to the host.

DEVICE_COUNT=

The number of physical disks to use for this group. The limit is the number of available disks in the array. The default and minimum value is 8.

DISKGROUP_DISKTYPE=

Determines the types of disks to be considered for creating the disk group. The default value is `online`.

- `online`—Only online Fibre Channel disks are considered for creating the default disk group.
- `Near_online`—Only near-online Fibre Channel disks are considered for creating the default disk group.

SPARE_POLICY=

Determines the amount of storage space, if any, set aside for use in the event that disks fail. The default is `single`. The space set aside is not in numbers of physical disks. It is the equivalent amount of storage space spread across all disks.

- `None`—Reserves no space within a disk group to allow for data reconstruction in case of a disk drive failure

**NOTE:**

Using a spare policy of `none` can cause data loss and is not recommended.

- `Single`—Reserves space within a disk group to allow for data reconstruction in case of a failure of one disk drive

- **Double**—Reserves space within a disk group to allow for data reconstruction in case of a failure of two disk drives

Example

Create the initialized array `payroll` with 12 physical disks and a spare policy of `single`:

```
ADD SYSTEM payroll DEVICE_COUNT=12 SPARE_POLICY=single
```

ADD VDISK

The `ADD VDISK` command creates a virtual disk with the specified name and parameters.

Syntax

```
ADD VDISK virtual_disk_name SIZE= virtual_disk_size
```

Options

The following options are available with the `ADD VDISK` command. The `SIZE=` option is required.

COMMENT=

Associates a user-defined comment with the virtual disk. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

DISK_GROUP=

The disk group in which you want to create the virtual disk. The disk group must already exist to use this option. If not specified, the default disk group is used.

MIRRORCACHE=

Sets the controller's mirror cache. Possible values are `mirrored` (cache is mirrored between both controllers) and `notmirrored` (cache is not mirrored).

NOPREFERRED_PATH

Allows either controller to handle I/O.

NOREAD_CACHE

Reads are always performed by the physical disks, not the controller's cache.

NO_WAIT_FOR_COMPLETION

Does not wait for the command to finish before displaying the utility command prompt or running another command or script. Some operations are invalid until the initial operation finishes in the background.

NOWRITE_PROTECT

Allows writing to the virtual disk from all presented LUNs and hosts.

OS_UNIT_ID=

The ID presented to the host operating system. If set to zero, no ID is presented to the host. This option is used for IBM AIX (set to zero), OpenVMS (required), and Tru64 UNIX (recommended). Other host operating systems ignore this option.

PREFERRED_PATH=

The preferred controller that will handle all I/O for the virtual disks. If the preferred controller fails, the working controller becomes the preferred controller.

- `Path_A_Both`—Controller A fails over to controller B. When controller A restarts, the virtual disks fail back to controller A. This is failover/failback mode.
- `Path_A_Failover`—Controller A fails over to controller B. When controller A restarts, the virtual disks do not fail back to controller A. This is failover-only mode.
- `Path_B_Both`—Controller path B fails over to controller A. When controller B restarts, the virtual disks fail back to controller B. This is failover/failback mode.
- `Path_B_Failover`—Controller B fails over to controller A. When controller B restarts, the virtual disks do not fail back over to controller B. This is failover-only mode.

READ_CACHE

Reads are performed by the controller's cache.

REDUNDANCY=

The data protection level of the virtual disk. If not specified, the default is `Vraid1`.

- `Vraid0`—Provides no data protection. It distributes data among its member disks into stripes and uses all members to process I/O requests. This method has no overhead associated with duplication of information and provides the highest performance.
- `Vraid1`—Provides the highest level of data protection but uses the most space. It copies data written to one disk to a backup disk. In a multidisk configuration, `Vraid1` mirrors each pair of disks to each other. These disk pairs can then be striped to create a virtual disk.
- `Vraid5`—Provides a moderate level of data protection. It distributes the parity information among all member disks. If one drive fails, the failed disk can be re-created after it is replaced.

SIZE=

The size of the virtual disk in gigabytes (GB).

WAIT_FOR_COMPLETION

Waits for the command to finish before displaying the utility command prompt or running another command or script. For virtual disks larger than 1 TB, using this option can result in a long waiting period before the utility command prompt appears.

WORLD_WIDE_LUN_NAME=

The world wide LUN name of the virtual disk.

 **NOTE:**

This option is commonly used to allow a host to point to a new version of the virtual disk by giving the new virtual disk the same WWN as the old virtual disk.

WRITECACHE=

Sets the controller's write cache. Possible values are `writethrough` and `writeback`. With `writethrough` the operation completes when the data is written to the disk. With `writeback`, the operation completes when the data is written to cache.

 **NOTE:**

If you are creating a preallocated snapclone (using a container), you must set write cache on the source virtual disk to `writethrough` to flush cache memory to the virtual disk before it is copied. After the snapclone is created, the write cache of the source virtual disk reverts to the original setting.

WRITE_PROTECT

Does not allow writing to the virtual disk from all presented LUNs and hosts.

Option defaults

The following defaults are used for the `ADD VDISK` command when nothing is specified:

- `MIRRORCACHE=mirrored`
- `WRITECACHE=writeback`
- `OS_UNIT_ID=0` (zero)
- `NOPREFERRED_PATH`
- `DISK_GROUP=\Disk Groups\Default Disk Group`
- `READ_CACHE`
- `NOWRITE_PROTECT`

 **NOTE:**

An error occurs during virtual disk creation if you rename the default disk group without specifying a disk group.

Examples

Create a 10 GB virtual disk called `scratch` in the default disk group using read cache and Vraid5 redundancy level:

```
ADD VDISK "\Virtual Disk\scratch" SIZE=10 REDUNDANCY=VRAID5  
READ_CACHE
```

Create a 2 GB virtual disk called `gene_research` in the `small_disks` disk group:

```
ADD VDISK "\Virtual Disks\engineering\gene_research" SIZE=2
```

```
DISK_GROUP="\Disk Groups\small_disks"
```

CAPTURE CONFIGURATION

The `CAPTURE CONFIGURATION` command enables you to capture, save, and re-create an array configuration by querying the selected array and generating up to five scripts. Not all arrays require all five scripts. For example, the script `step1A` is always generated and may be the only script that is required. You can use these scripts to re-create the original configuration and, in some cases, to assist in a site recovery. HP recommends that you run the `CAPTURE CONFIGURATION` command after you initialize an array to save a copy of the configuration.

NOTE:

For iSCSI controllers, the `CAPTURE CONFIGURATION` command adds the default controller name to HP Command View EVA only. You must set the other iSCSI controller properties manually.

The scripts output to the console unless you specify a file name. The file name is appended with `_StepXX`. `XX` is the restore step name, which is `1A`, `1B`, `1C`, `2`, or `3`. For example, if you specify `CAPTURE CONFIGURATION newyear.txt`, the utility creates the files `newyear_Step1A.txt`, `newyear_Step1B.txt`, `newyear_Step1C.txt`, `newyear_Step2.txt`, and `newyear_Step3.txt`.

The utility verifies that other files with the same names do not exist. If the file names exist, and you are entering the command manually, the utility prompts you to replace existing files with the new files. If you are using a script, existing files are replaced with the new files.

When creating files that contain the scripts, activity dots are displayed on the console. This command may take a long time to complete, depending on the size of the configuration.

NOTE:

Do not reconfigure the selected array while this command is executing.

Syntax

```
CAPTURE CONFIGURATION file_name
```

Options

The following options are available with the `CAPTURE CONFIGURATION` command.

SAVE_ALL_WORLD_WIDE_LUN_NAME

Saves the world wide LUN names for all virtual disks, except containers and DR group members on the destination array.

SAVE_DIFFERENT_WORLD_WIDE_LUN_NAME

Saves the world wide LUN names for the virtual disks for which the world wide LUN name has changed. This option applies to all virtual disks except containers and DR group members on the destination array.

 **NOTE:**

By default, `CAPTURE CONFIGURATION` does not save world wide LUN names of virtual disks. You must explicitly specify one of these options.

START_AT=

Specifies the step (1A, 1B, 1C, 2, 3) at which `CAPTURE CONFIGURATION` must start. You need not recapture everything when the first step works and a later step fails.

Example

Start the capture configuration operation from step 2:

```
CAPTURE CONFIGURATION c:\sales.txt START_AT=2
```

Step 1 scripts

Step 1 is divided into three smaller steps to facilitate DR group recovery.

Step 1A script

Creates the array, disk groups, hosts, and virtual disks (excluding snapshots and mirrorclones) that are not used for data replication and LUNs for the created disks. Step1A creates a basic array that does not include virtual disks or DR groups. The `CAPTURE CONFIGURATION` command always creates this script.

Step 1B script

Creates all source virtual disks used in DR groups on this controller.

Step 1C script

Presents all source virtual disks (for DR groups) to the hosts. This step is used to recover from a DR group failure in which the source site is lost. LUNs can be presented in their original configuration by running the step 1C script.

Step 2 script

Recreates all DR-specific configuration information for which this array is the source. This involves the configuration's source DR groups and their members only. Presentations of remote virtual disks are not restored by this command (see step 3).

This step provides flexibility when a site is completely lost. The source and destination arrays have separate `CAPTURE CONFIGURATION` scripts, so you must run step 1A, step 1B, and step 1C on the source array and then run step 1A, step 1B, and step 1C on the destination arrays before step 2 can be run.

Step 3 script

Presents destination virtual disks to the hosts.

You must run step 2 on both the source and destination arrays before running step 3.

 **NOTE:**

If no destination virtual disk is presented to a host, a blank script is generated.

Restoring a DR group configuration

To restore a DR group configuration from captured scripts, you must run the scripts in the following order on each array that is part of the DR group configuration.

You may not be able to re-create a specific captured configuration on certain arrays. For example, if a captured configuration requires 120 disks and the target array contains only 80, the capture configuration operation will fail.

1. Use the `SELECT MANAGER` command to specify which HP Command View EVA instance will execute the script commands.
2. Select the array `Uninitialized Storage System (WWN)` to specify the uninitialized array on which you want to re-create the captured configuration.
3. Run scripts 1A, 1B, and 1C successfully (and separately) on the source and destination arrays.
4. Run the step 2 script successfully (and separately) on the source and destination arrays.
5. Run the step 3 script successfully (and separately) on the source and destination arrays.

Once the scripts have been run on all arrays, the DR group configuration is restored to its original state.

Example

The following example creates the files `sales_Step1A.txt`, `sales_Step1B.txt`, `sales_Step1C.txt`, `sales_Step2.txt`, and `sales_Step3.txt`:

```
CAPTURE CONFIGURATION c:\sales.txt
```

 **NOTE:**

See “[FILE](#)” on page 48 for more information about restoring configurations.

Restoring an array configuration with different disk sizes and types

If you need to restore an array configuration that contains disks of different sizes and types, you must manually recreate these disk groups. The controller software and the utility's `CAPTURE CONFIGURATION` command are not designed to automatically restore this type of configuration.

To restore the array configuration, complete the following steps:

 **NOTE:**

This procedure assumes that you have run the `CAPTURE CONFIGURATION` command when the array was in a functional state to save configuration.

1. Using the HP Command View EVA user interface or the appropriate utility commands, initialize the array and recreate the disk groups of the original configuration.

2. Locate the script file generated from the `CAPTURE CONFIGURATION` command. It should be in the same directory where the utility is running.
3. In the step 1A script file, comment out the `ADD SYSTEM`, `SELECT SYSTEM`, `ADD DISK_GROUP`, and `SET DISK GROUP` lines with an exclamation point as shown in the following example:

```

!
! SSSU CAPTURE script checksum start
!
! CAPTURE CONFIGURATION Step1A on Thu Feb 16 13:59:16 2006
!
! Manager: 15.70.188.130:12301
! System: lemy5k3
!
! SSSU Build 26 for EVA Version 6.0
!
SET OPTIONS ON_ERROR=HALT_ON_ERROR
!ADD SYSTEM "lemy5k3" DEVICE_COUNT=8 SPARE_POLICY=SINGLE COMMENT="sds"
!SELECT SYSTEM "lemy5k3"
!ADD DISK_GROUP "\Disk Groups\diskgroup1" DEVICE_COUNT=11
SPARE_POLICY=DOUBLE DISKGROUP_DISKTYPE=ONLINE OCCUPANCY_ALARM=100
!SET DISK_GROUP "\Disk Groups\Default Disk Group" OCCUPANCY_ALARM=90
ADD FOLDER "\Virtual Disks\vdf1" COMMENT="sssssssssss"
ADD FOLDER "\Virtual Disks\vdf2" COMMENT="sdvvd"
ADD FOLDER "\Hosts\hf1" COMMENT="ascfascdssa"
ADD FOLDER "\Hosts\hf2" COMMENT="dfe"
ADD FOLDER "\Hosts\testfolder"

```

Commenting out these lines ensures that the system and disk group actions are not executed when you run the step 1A script.

4. Continue the restore process using the modified step 1A script file.

CAPTURE VALIDATE

The `CAPTURE VALIDATE` command checks the specified script file for modification by calculating its checksum and comparing the result against the checksum saved in the file. A script can be modified (failing the `CAPTURE VALIDATE` command) and still work. The utility runs a script even if its checksum shows file modification.

The `CAPTURE VALIDATE` determines if a captured script file has been modified after it was captured. You can determine if the script is a perfect capture of the existing array or if someone has modified the script after it was created.

NOTE:

The `CAPTURE VALIDATE` command does not execute the specified script but checks to see if it is the original script.

Syntax

```
CAPTURE VALIDATE file_name
```

User functionality for CAPTURE commands

When a script is created using the `CAPTURE CONFIGURATION` command, a header is added to the beginning of the text file and a checksum is added to the end. If `CAPTURE VALIDATE` does not find a correct header, it reports that the script is not a `CAPTURE`-generated script. If the checksum does not match, this command reports that the file has been modified.

If `CAPTURE VALIDATE` finds a correct header and the checksum matches, this command reports that the specified script has not been modified.

CHECK REDUNDANCY

The `CHECK REDUNDANCY` command provides information to determine if you can safely remove disk drives from the array.

Syntax

```
CHECK REDUNDANCY
```

CLEAR LICENSES

The `CLEAR LICENSES` command deletes the licenses of all the arrays.



NOTE:

The `CLEAR LICENSES` command does not remove a wrong license installed. From the HP Command View GUI, it is not possible to remove the Instant On license.

Syntax

```
CLEAR LICENSES array_name
```

Options

The following options are available for the `CLEAR LICENSES` command:

BC

Deletes all of the Business Copy licenses in the array.

CA

Deletes all of the Continuous Access licenses in the array.

CV

Deletes all of the Command View EVA licenses in the array.

ALL

This is the default; it deletes all of the Business Copy, Continuous Access, and Command View EVA licenses in the array.

Example

Clear the Business Copy license in the array `Test1`.

```
CLEAR LICENSES TEST1 BC
```

CODELOAD

The `CODELOAD` command instructs HP Command View EVA to load a software image file. The software image file must be on the same server as HP Command View EVA.

Syntax

```
CODELOAD software_image file_path
```

CODELOAD DISK

The `CODELOAD DISK` command instructs HP Command View EVA to load a disk firmware image file. The image file must be on the same server as HP Command View EVA. For `filename`, do one of the following:

- To install firmware for a single disk, specify the full path for the image file name.
- To install firmware on multiple disks, specify the full path to the folder where the bundled image file was extracted.

Syntax

```
CODELOAD DISK filepath
```

Options

The following options are available for the `CODELOAD DISK` command:

DISK=

The name of the disk on which the code firmware image will be installed. If `DISK` is not specified, the firmware image will be installed on all disks.

Examples:

The following command loads file `FW34.lod` on Disk 001:

```
CODELOAD DISK "c:\FW34.lod" DISK= "Disk 001"
```

The following command loads the firmware image on all disks. All the required `.lod` files are located in the `c:\firmware\codeload` folder.

```
CODELOAD DISK "c:\firmware\codeload"
```


DELETE DISK_GROUP

The `DELETE DISK_GROUP` command deletes a disk group from the configuration. The command is rejected if any virtual disks are present in the disk group.

Syntax

```
DELETE DISK_GROUP group_name
```

Example

Delete the disk group `human_resources`:

```
DELETE DISK_GROUP "\Disk Groups\human_resources"
```

DELETE DR_GROUP

The `DELETE DR_GROUP` command deletes the DR group on the source and destination arrays. The `SET OPTION NOSAFE_DELETE` command does not override this command. You can delete a DR group on the source array at any time.

Syntax

```
DELETE DR_GROUP group_name
```

Example

Delete the DR group `payroll`:

```
DELETE DR_GROUP "\Data Replication\payroll"
```

DELETE FOLDER

The `DELETE FOLDER` command deletes the specified empty folder. The command fails if the specified folder is not empty. To delete multiple layers of folders, you must do so sequentially. (You cannot delete a root folder.)

Syntax

```
DELETE FOLDER folder_name
```

Examples

Delete the folder `human_resources` in the `Hosts` folder:

```
DELETE FOLDER \Hosts\human_resources
```

Delete the folder `engineering` in the `colorado_springs` folder:

```
DELETE FOLDER \Hosts\colorado\colorado_springs\engineering
```

DELETE HOST

The `DELETE HOST` command deletes a host from the array.

Syntax

```
DELETE HOST host_name
```

Example

Delete the host development:

```
DELETE HOST \Hosts\development
```

DELETE ISCSI_CONTROLLER

The `DELETE ISCSI_CONTROLLER` command removes an iSCSI controller from HP Command View EVA.

Syntax

```
DELETE ISCSI_CONTROLLER iSCSI_controller_name
```

Example

Delete iSCSI controller 1 from HP Command View EVA:

```
DELETE ISCSI_CONTROLLER "\Hardware\iSCSI Devices\iSCSI controller 1"
```

DELETE ISCSI_HOST

The `DELETE ISCSI_HOST` command deletes an iSCSI host from the array.

Syntax

```
DELETE ISCSI_HOST iSCSI_host_name
```

Example

Delete the iSCSI host development:

```
DELETE ISCSI_HOST \Hosts\development
```

DELETE ISCSI_LUN

The `DELETE ISCSI_LUN` command removes access to a virtual disk from an iSCSI IP host.

Syntax

```
DELETE ISCSI_LUN VDISK= virtual_disk_name ISCSI_HOST= iscsihost_name
```

Options

The following options are available with the `DELETE ISCSI_LUN` command:

VDISK=

The name of the virtual disk presented to the host.

ISCSI_HOST=

The name of the iSCSI host to which the virtual disk is presented.

Example

Remove access to virtual disk `payroll` from the iSCSI host `development`:

```
DELETE ISCSI_LUN VDISK="\Virtual Disks\payroll" ISCSI_HOST="development"
```

DELETE LUN

The `DELETE LUN` command removes access to a virtual disk from a host.

Syntax

```
DELETE LUN LUN_name
```

Example

Remove access to LUN 12 from the host `accounting_department`:

```
DELETE LUN \Hosts\accounting_department\12
```

 **NOTE:**

When you specify a LUN, you must use the full name, not an alias.

DELETE SYSTEM

The `DELETE SYSTEM` command permanently removes an array. The array is no longer accessible and all data is lost.

 **CAUTION:**

The `DELETE SYSTEM` command removes the entire array configuration. All customer data on the array is lost. In addition, all information about LUNs and hosts on this array is lost.

The `DELETE SYSTEM` command is rejected if virtual disks exist. See [“SET OPTIONS”](#) on page 72 for information about the `NOSAFE_DELETE` option.

Syntax

```
DELETE SYSTEM array_name
```

Example

Delete the array `payroll`:

```
DELETE SYSTEM payroll
```

DELETE VDISK

The `DELETE VDISK` command permanently removes the specified virtual disk. The virtual disk is no longer accessible and all data is lost.

△ CAUTION:

The `DELETE VDISK` command removes the entire virtual disk from the array. All customer data on the virtual disk is lost. In addition, all information about LUNs presented from this virtual disk is lost.

The `DELETE VDISK` command is rejected if the virtual disk is presented. See “[SET OPTIONS](#)” on page 72 for information about the `NOSAFE_DELETE` option.

Syntax

```
DELETE VDISK virtual_disk_name
```

Options

The following options are available with the `DELETE VDISK` command.

NOWAIT_FOR_COMPLETION

Does not wait for the command to finish before displaying the utility command prompt or running another command or script. Some operations are invalid until the initial operation finishes in the background.

WAIT_FOR_COMPLETION

Waits for the command to finish before displaying the utility command prompt or running another command or script. For virtual disks larger than 1 TB, using this option can result in a long waiting period before the utility command prompt appears.

📝 NOTE:

When you delete a container, `WAIT_FOR_COMPLETION` is ignored. After deletion, the container may still appear when using an `LS` command. This is because the container is deleted in the background and will continue to appear until it is fully deleted.

Examples

Delete the virtual disk d12 and wait for the deletion to complete:

```
DELETE VDISK "\Virtual Disks\d12" WAIT_FOR_COMPLETION
```

Delete the snapshot wed_nite_biz without waiting for completion:

```
DELETE VDISK "\Virtual Disks\daily_biz\wed_nite_biz"
```

NOTE:

You cannot delete a virtual disk if a snapshot or mirrorclone of the virtual disk exists. You must delete the snapshot or mirrorclone and then delete the virtual disk.

EMVERSION

The `EMVERSION` command displays the HP Command View EVA (formerly called Element Manager) version and build number.

Syntax

```
EMVERSION
```

NOTE:

You must select an HP Command View EVA instance with the `SELECT MANAGER` command before using the `EMVERSION` command. This only applies if you are using `EMVERSION` in a batch script. You are not required to select an array.

Example

```
EMVERSION
Element Manager information
Version: 6.00
Build: 30
```

EXERCISE_DISK

The `EXERCISE_DISK` command tests the physical disks in the array for defects. You must use the full disk name, not an alias, with this command.

Syntax

```
EXERCISE_DISK
```

Options

The following options are available with the `EXERCISE_DISK` command.

START

Begins testing (exercising) the disks. You can test either:

- All disks in a selected array (`all`)
- Specific disks, with the name of each disk separated by a comma and enclosed in quotes

STOP

Stops testing the disks.

SUMMARY

Provides a summary of the testing. This option can show status while testing is in progress and when testing is complete.

The following is sample output:

```
ssl> exer start "\Disk Groups\Ungrouped Disks\Disk 002"
```

```
ssl> exer sum
```

```
DILX Summary Report for Storage Cell ssl
```

```
-----  
DILX process status: DILX Testing In Progress
```

```
Number of devices tested: 1
```

```
Disk 002
```

```
-----  
Device handle:
```

```
noid: 0x808
```

```
id_type: 0x7
```

```
id_len: 0x10
```

```
id_value[0]: 0x20000004
```

```
id_value[1]: 0xcf792125
```

```
id_value[2]: 0
```

```
id_value[3]: 0
```

```
Device status: Testing in progress.
```

```
Total blocks transferred: 12098
```

```
Total reads issued: 329
```

```
Total writes issued: 77
```

```
1st bad sense key: 0
```

```
2nd bad sense key: 0
```

```
1st error flag: 0
```

```
2nd error flag: 0
```

```
Soft error count: 0
```

```
Hard error count: 0
1st bad ASC: 0
2nd bad ASC: 0
1st bad ASQ: 0
2nd bad ASQ: 0
ss1> exer stop
```

Examples

Test Disk 002 and Disk 004:

```
EXERCISE_DISK start "\Disk Groups\Default Disk Group\Disk 002,
\Disk Groups\Default Disk Group\Disk 004"
```

Test all disks:

```
EXERCISE_DISK start all
```

EXIT

The `EXIT` command terminates the utility session.

If the utility is accepting input from the terminal or the command line, `EXIT` causes the session to terminate.

If the utility is processing a script from a file and encounters a `FILE` command, the behavior of the `EXIT` command depends on how the `FILE` command was issued:

- If the `FILE` command was issued from the command line, an `EXIT` command in the file causes the utility session to terminate.
- If the `FILE` command was issued from the terminal, an `EXIT` command in the file causes the utility to resume accepting input from the terminal.
- If a file is currently executing as a result of another `FILE` command, an `EXIT` command in that file returns control to the previous file. The utility does not run any commands in a script except for the `EXIT` command. `EXIT` causes an immediate return to the previous file.

Syntax

```
EXIT
```

EXPORT LICENSES

The `EXPORT LICENSES` command exports licenses from arrays to a file. You must specify the absolute path to the file, which should be on the system on which HP Command View EVA is running. Use this command to backup license information in case it should be necessary to recover it. You can also use this command with the [Import Licenses](#) command to copy license information from one HP Command View EVA management server to another.

Consider the following:

- If you export to an existing file, the contents of the file are overwritten.
- Each license key string in the exported file starts on a new line.

- The accepted file extensions are `.dat` and `.txt`.

Syntax

```
EXPORT LICENSES filepath
```

Example

Export license information to file `C:\licenses\test_array_licenses.txt`:

```
EXPORT LICENSES C:\licenses\test_array_licenses.txt
```

FILE

The `FILE` command suspends the current mode of input and redirects the scripting utility to accept input from the specified file. Either the end of the file or an `EXIT` command in the specified file causes the utility to again accept input from the previous input source.

`FILE` commands can be nested, which means that a file being executed through a `FILE` command can have `FILE @` commands in its command set. The only limitation on how deep `FILE` commands can be nested is based on the host array's resources.

Syntax

```
FILE file_name
```

A file name extension is not required by the utility, but you can choose one appropriate for your environment.

Examples

Execute the file `snapd1.txt` from the current directory:

```
FILE snapd1.txt
```

Execute the file `d27.txt` from the specified directory:

```
FILE d:\scripts\snapshots\d27.txt
```

FIND HOST

The `FIND HOST` command displays host information based on the host's adapter world wide name. The `FIND HOST` command output is the same as the `LS HOST` command output. If there is more than one host with the specified adapter world wide name, the utility displays each one in succession.

Syntax

```
FIND HOST ADAPTER_WWN= adapter_wwn
```

Example

Display information about the host with the world wide name `1000-0000-c92d-e4e7`:

```
FIND HOST ADAPTER_WWN=1000-0000-c92d-e4e7
```


FIND SYSTEM

The `FIND SYSTEM` command displays array information based on the array's world wide name. The `FIND SYSTEM` command output is less detailed than the `LS SYSTEM` command output.

Syntax

```
FIND SYSTEM SYSTEM_WWN= array_wwn
```

Example

Display information about the array with the world wide name 5000-1FE1-5001-B3D0:

```
FIND SYSTEM SYSTEM_WWN=5000-1FE1-5001-B3D0
```

FIND VDISK

The `FIND VDISK` command displays virtual disk information based on the virtual disk's world wide name. The `FIND VDISK` command output is the same as the `LS VDISK` command output.

Syntax

```
FIND VDISK LUNWWID= virtual_disk_wwn
```

Example

Display information about the virtual disk with the world wide name

```
6005-08b4-0010-4949-0000-5000-57fd-0000:
```

```
FIND VDISK LUNWWID=6005-08b4-0010-4949-0000-5000-57fd-0000
```

HELP

The `HELP` command displays help information about the utility commands.

To get help on specific command syntax, enter a space and a question mark (?) where you would normally specify an option or an option value, at any level of a command line. The help system lists the values available for that option.

Syntax

```
HELP
```

Example

Access help and request the display of the available values for the `REDUNDANCY` option:

```
ADD VDISK my_Vdisk REDUNDANCY= ?
```

IMPORT LICENSES

The `IMPORT LICENSES` command imports array licenses. The licenses in the specified file are appended to existing licenses. You must specify the absolute path to the file, which should be on the system on which HP Command View EVA is running. Use this command with the [Export Licenses](#) command to restore license information or to copy license information from one HP Command View EVA management server to another.

Consider the following:

- Each license key string in the file should start on a new line.
- The accepted file extensions are `.dat` and `.txt`.

Syntax

```
IMPORT LICENSES filepath
```

Example

Import license information from file `C:\licenses\test_array_licenses.txt`:

```
IMPORT LICENSES C:\licenses\test_array_licenses.txt
```

LOCATE DISK

The `LOCATE DISK` command finds a disk by turning the locate LEDs on or off.

Syntax

```
LOCATE DISK disk_name
```

Options

The following options are available with the `LOCATE DISK` command.

ON

Turns the locate LED on.

OFF

Turns the locate LED off.

Examples

Turn on the locate LED for Disk 001:

```
LOCATE DISK"Disk 001" ON
```

Turn off the locate LED for Disk 001:

```
LOCATE DISK"Disk 001" OFF
```

LOCATE ISCSI_CONTROLLER

The `LOCATE ISCSI_CONTROLLER` command finds an iSCSI controller by turning the locate LEDs on or off.

Syntax

```
LOCATE ISCSI_CONTROLLER iscsi_controller_name
```

Options

The following options are available with the `LOCATE ISCSI_CONTROLLER` command.

ON

Turns on the locate LED.

OFF

Turns off the locate LED.

Examples

Turn on the locate LED for iSCSI Controller 1:

```
LOCATE ISCSI_CONTROLLER "iSCSI Controller 1" ON
```

Turn off the locate LED for for iSCSI Controller 1:

```
LOCATE ISCSI_CONTROLLER "iSCSI Controller 1" OFF
```

LS

The `LS` commands display information about the various objects in the currently selected array. You can view information about all objects (for example, all virtual disks) or a specific object (for example, virtual disk `vd001`).

Options

The following options are available with the `LS` commands.

FULL

Lists all objects of the specified type (for example, all virtual disks) and displays the properties of each object.

FULL XML

Lists all objects of the specified type (for example, all virtual disks) and displays the properties of each object. The output is displayed in XML.

NOFULL

Lists all objects of the specified type.

NOFULL XML

List all objects of the specified type. The output is displayed in XML.

Examples

Display information about all virtual disks:

```
LS VDISK FULL
```

Display information about a virtual disk `mydisk001`:

```
LS VDISK mydisk001
```

LS CABINET

The `LS CABINET` command displays information about the cabinets in the currently selected array.

Syntax

```
LS CABINET cabinet_name
```

LS CONTAINER

The `LS CONTAINER` command displays information about the available containers in the currently selected array.

Syntax

```
LS CONTAINER container_name
```

LS CONTROLLER

The `LS CONTROLLER` command displays disk configuration information about the controllers in the currently selected array.

Syntax

```
LS CONTROLLER controller_name
```

Reduction of hazardous substances

The `LS CONTROLLER` output indicates compliance with the Reduction of Hazardous Substances (RoHS) mandate. Compliance is indicated by `yes` or `no`.

LS CONTROLLER_ENCLOSURE

The `LS CONTROLLER_ENCLOSURE` command displays configuration information about the HSV300 controller enclosure for the currently selected array.

Syntax

```
LS CONTROLLER_ENCLOSURE controller_enclosure_name
```

NOTE:

The `LS CONTROLLER_ENCLOSURE` command was added to support HSV300 controllers by providing information on enclosure properties such as power, the cache battery, and the cooling fan. The same information can be obtained for HSV1xx and HSV2xx controllers using the `LS CONTROLLER` command.

LS DISK

The `LS DISK` command displays disk configuration information about the physical disks connected to the currently selected array.

Syntax

```
LS DISK disk_name
```

LS DISK_GROUP

The `LS DISK_GROUP` command displays configuration information about the disk groups for the currently selected array.

Syntax

```
LS DISK_GROUP disk_group_name
```

LS DISKSHELF

The `LS DISKSHELF` command displays information about the disk enclosures in the currently selected array.

Syntax

```
LS DISKSHELF disk_shelf_name
```

LS DR_GROUP

The `LS DR_GROUP` command displays information about the DR groups configured for the currently selected array.

Syntax

```
LS DR_GROUP dr_group_name
```

LS FOLDER

The `LS FOLDER` command displays a list of folders for the currently selected array.

Syntax

```
LS FOLDER folder_name
```

LS HOST

The `LS HOST` command displays information about the hosts configured for the currently selected array.

Syntax

```
LS HOST host_name
```

LS ISCSI_CONTROLLER

The `LS ISCSI_CONTROLLER` command displays information about the iSCSI controllers configured for the currently selected array.

Syntax

```
LS ISCSI_CONTROLLER iSCSI_controller_name
```

LS ISCSI_HOST

The `LS ISCSI_HOST` command displays information about the iSCSI hosts configured for the currently selected array.

Syntax

```
LS ISCSI_HOST iSCSI_host_name
```

LS ISCSI_IPHOST

The `LS ISCSI_IPHOST` command displays information about the iSCSI IP hosts configured for the currently selected array.

 **NOTE:**

This command does not have an XML output option.

Syntax

```
LS ISCSI_IPHOST
```

LS ISCSI_LUN

The `LS ISCSI_LUN` command displays information about the iSCSI LUNs configured for the currently selected array.

 **NOTE:**

You cannot use aliases to specify LUNs.

Syntax

```
LS ISCSI_LUN iSCSI_LUN_name
```

LS LICENSES

The `LS LICENSES` command displays the license information for all arrays currently managed by HP Command View EVA.

Syntax

```
LS LICENSES array_name
```

LS LUN

The `LS LUN` command displays information about the LUNs configured for the currently selected array.

 **NOTE:**

You cannot use aliases to specify LUNs.

Syntax

```
LS LUN LUN_name
```

LS MANAGER

The `LS MANAGER` command displays information about the currently selected instance of HP Command View EVA.

 **NOTE:**

This command does not have an XML output option.

Syntax

LS MANAGER

Options

LS OPTIONS

The LS OPTIONS command displays the options you have configured for the current utility session.

 **NOTE:**

This command does not have an XML output option.

Syntax

LS OPTIONS

LS PREFERRED_PATH

The LS PREFERRED_PATH command displays information about preferred port connections and general status information about these connections between the local and remote arrays. You can use this command on arrays running controller software XCS 6.0 or later only.

Syntax

LS PREFERRED_PATH

LS SNAPSHOT

The LS SNAPSHOT command displays information about snapshots created for the currently selected array.

Syntax

LS SNAPSHOT *snapshot_name*

LS SYSTEM

The LS SYSTEM command displays information about the arrays currently managed by HP Command View EVA.

Syntax

```
LS SYSTEM array_name
```

LS TIME

Use the `LS TIME` command to display the current time for the currently selected array.



NOTE:

This command does not have an XML output option.

Syntax

```
LS TIME
```

LS VDISK

The `LS VDISK` command displays information about the virtual disks configured for the currently selected array.

Syntax

```
LS VDISK virtual_disk_name
```

LS WORLD_WIDE_NAME

The `LS WORLD_WIDE_NAME` command displays the host world wide names that are visible to the currently selected array and that are not already assigned to hosts.



NOTE:

This command does not have an XML output option.

Syntax

```
LS WORLD_WIDE_NAME
```

MOVE HOST

The `MOVE HOST` command moves a host to another host folder or to the host root folder.

Syntax

```
MOVE HOST source_host_name destination_host_folder_name
```

Example

Move the host from `\Hosts\development` to `\Hosts\america\development`:

```
MOVE HOST "\Hosts\development" "\Hosts\america\development"
```

MOVE VDISK

The `MOVE VDISK` command moves a virtual disk to another virtual disk folder or to the virtual disk root folder.

Syntax

```
MOVE VDISK source_virtual_disk_name destination_virtual_disk_folder_name
```

Example

Move the virtual disk `\Virtual Disks\engineering` to `\Virtual Disks\department\engineering`:

```
MOVE VDISK "\Virtual Disks\engineering" "\Virtual Disks\department\engineering"
```

Password Authentication commands

The following commands are available for password authentication.

SSSU -a

The `SSSU -a` command adds an entry to the password file. This command is invoked from the command line.

Syntax

```
SSSU -a
```

SSSU -d

The `SSSU -d` command deletes the entry from the password file. This command is invoked from the command line.

Syntax

```
SSSU -d
```

SSSU -l

The `SSSU -l` command lists the set of entries in the password file, displaying the manager name and user name. This command is invoked from the command line.

Syntax

```
SSSU -l
```

PAUSE

The `PAUSE` command stops the utility or script for a specified amount of time. Enter the time in seconds.

Syntax

```
PAUSE time
```

Example

Pause a script for 10 seconds:

```
pause 10
```

REDISCOVER

The `REDISCOVER` command instructs HP Command View EVA to find new arrays or update the status of existing arrays. For example, when communication is lost and then restored, you can use the `REDISCOVER` command.

Syntax

```
REDISCOVER
```

REFRESH

The `REFRESH` command refreshes an array. This command does not have any options. You must select an array before issuing this command.

Syntax

```
REFRESH
```

RESTART

The `RESTART` command restarts specified controllers.

Syntax

```
RESTART controller_name
```

Options

The following options are available for the `RESTART` command:

ALL_PEERS

Restarts all peer controllers (both controllers) on this array.

NOALL_PEERS

The default; restarts only the specified controller.

Examples

Restart controller B and its peer controller:

```
RESTART "\\Hardware\Rack 1\Enclosure 7\Controller B" ALL_PEERS
```

Restart controller A, but not its peer controller:

```
RESTART "\\Hardware\Rack 1\Enclosure 7\Controller A" NOALL_PEERS
```

SELECT MANAGER

The `SELECT MANAGER` command configures the utility for use on the specified HP Command View EVA instance. The *manager name* can be a management server name or an IP address. The *user name* and *password* are the account credentials that were created for you during HP Command View EVA installation. The user name and password are validated in the background on every command.

NOTE:

The `SELECT MANAGER` command is available for use only in batch scripts. When the command is run from a script, the command does not display on screen nor is it redirected to a file.

Syntax

```
SELECT MANAGER manager_name USERNAME= user_name | domain_name\user_name  
PASSWORD= password
```

Options

The following are the options available with the `SELECT MANAGER` command.

PASSWORD=

The account password that was created for you during HP Command View EVA installation. The password switch is optional.

USERNAME=

The account user name that was created for you during HP Command View EVA installation. As an option, the domain name can be specified with the username to authenticate users against a domain group. The username switch is required.

Examples

Select the `north_campus` server:

```
SELECT MANAGER north_campus USERNAME=administrator PASSWORD=administrator
```

Select the north_campus server as user Alan in the domain Turing:

```
SELECT MANAGER north_campus USERNAME=Turning\Alan PASSWORD=administrator
```

In the following example, SSSU will read the password from the password file for the manager north_campus and the user alan combination, if available:

```
SELECT MANAGER north_campus USERNAME=alan
```

SELECT SYSTEM

The `SELECT SYSTEM` command directs the command prompt to the selected array. All configuration commands affect the selected array. If the system name includes spaces, enclose it in quotes.

Syntax

```
SELECT SYSTEM array_name
```

Examples

Select the employees array:

```
SELECT SYSTEM employees
```

Select the payroll storage array:

```
SELECT SYSTEM "payroll storage"
```

SET CABINET

The `SET CABINET` command changes the specified cabinet properties.

Syntax

```
SET CABINET cabinet_name
```

Options

The following options are available with the `SET CABINET` command.

COMMENT=

Associates a user-defined comment with the cabinet. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

NAME=

The new name of the cabinet.

SET CONTROLLER

The `SET CONTROLLER` command changes the specified controller properties.

Syntax

```
SET CONTROLLER controller_name
```

Options

The following options are available with the `SET CONTROLLER` command.

COMMENT=

Associates a user-defined comment with the controller. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

NAME=

The new name of the controller.

SET DISK

The `SET DISK` command changes the specified disk properties.

Syntax

```
SET DISK disk_name
```

Options

The following options are available with the `SET DISK` command.

COMMENT=

Associates a user-defined comment with the disk. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

NAME=

The new name of the disk.

Example

Rename disk `Disk 005` to `5Disk`:

```
SET DISK "\Disk Groups\Ungrouped Disks\Disk 005" NAME=5Disk
```

SET DISK_GROUP

The `SET DISK_GROUP` command changes the specified disk group properties.

Syntax

```
SET DISK_GROUP group_name
```

Options

The following options are available with the `SET DISK_GROUP` command.

ADD=

The number of disk drives to add to the disk group.

COMMENT=

Associates a user-defined comment with the disk group. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

DELETE=

The name of the disk drive to remove from the disk group.

NAME=

The new name of the disk group.

OCCUPANCY_ALARM=

The point when a defined percentage of space is used. When this point is reached, an event is generated and sent to the management server (or the host) informing the administrator that the group is reaching full capacity. Do not use the percent sign (%) after the number. The default is 95%.

SPARE_POLICY=

Determines the amount of storage space, if any, set aside for use in the event that disks fail. The default is `single`. The space set aside is not in numbers of physical disks. It is the equivalent amount of storage space spread across all disks.

- `None`—Reserves no space within a disk group to allow for data reconstruction in case of a disk drive failure

 **NOTE:**

Using a spare policy of `none` can cause data loss and is not recommended.

- `Single`—Reserves space within a disk group to allow for data reconstruction in case of a failure of one disk drive
- `Double`—Reserves space within a disk group to allow for data reconstruction in case of a failure of two disk drives

Example

Rename the disk group `pool` to `nuclear secrets`:

```
SET DISK_GROUP " \Disk Groups\pool" NAME="nuclear secrets"
```

SET DISKSHELF

The `SET DISKSHELF` command changes the specified disk enclosure properties.

Syntax

```
SET DISKSHELF disk_shelf_name
```

Options

The following option is available with the `SET DISKSHELF` command.

COMMENT=

Associates a user-defined comment with the disk enclosure. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

SET DR_GROUP

The `SET DR_GROUP` command changes the specified DR group properties.

Syntax

```
SET DR_GROUP group_name
```

Options

The following options are available with the `SET DR_GROUP` command.



NOTE:

From the destination side, a user can set only the `COMMENT=` and `NAME=` options.

ACCESSMODE=

The access rights for a connected host. Possible values are `readonly`, `presentonly`, and `disable`.

ADD_VDISK=

The name of the source array virtual disk to add to the DR group. A destination virtual disk is automatically created on the destination array.



NOTE:

If a name is already in use, it is rejected and you must specify a new name.

When adding a virtual disk to the DR group, the following options are available and are optional:

- `DESTINATION_DISK_GROUP=` The disk group on the destination array on which the virtual disk is created.
- `DESTINATION_VDISK_NAME=` The virtual disk that is created on the destination array. By default, the name is the same as the source virtual disk.
- `TARGETREDUNDANCY=` The redundancy level of the virtual disk created on the destination array.

COMMENT=

Associates a user-defined comment with the DR group. The maximum number of characters is 64 (including spaces) and the string must be enclosed in quotes.

DELETE_VDISK=

The name of the source array virtual disk to remove from the DR group and delete. The corresponding virtual disk on the destination array is removed from the DR group and deleted from the array.

DETACH_VDISK=

The name of the source array virtual disk to remove from the DR group. The corresponding virtual disk on the destination array is removed from the DR group but not deleted. The detached destination virtual disk continues to exist as an independent virtual disk.

FAILOVER_RESUME

Instructs the controller to perform failover, and after failover is complete, resume the connection between the DR groups.

FAILOVER_SUSPEND

Instructs the controller to perform failover, and after failover is complete, suspend the connection between the DR groups.

FAILSAFE

When the connection between the source and the destination array fails, all writes are halted immediately and no write is reported as complete until the connection is restored or the `NOFAILSAFE` option is set.

FORCEFULLCOPY

Forces the DR group to ignore the DR log and fully copy data from the source array to the destination array.

LINK_DOWN_AUTOSUSPEND=

When enabled, DR group replication is automatically suspended if the link between the arrays goes down. Replication remains suspended even if the link becomes active again. Possible values are `enabled` and `disabled`.

MAX_LOG_SIZE=

The maximum size of the DR log disk. If you specify a size, the value must be between 136 MB and 2 TB and entered in blocks of 512 bytes (278528 through 4294967296). If left blank or set to 0 (zero), the controller software calculates the optimum log size for the available space.

NOTE:

If you specify a size that exceeds the available disk space, the command completes successfully and the DR group is created, but the specified size is not available. If disks are added to the configuration, the controller allocates more data for the DR log.

NAME=

The new name of the DR group.

NOFAILSAFE

The default when you create the DR group. When the connection between the source array and the destination array fails, writes are directed to the log until the connection is restored. When the connection is restored, the pending writes are copied to the destination array and the log is resynchronized. If the log becomes full, the array makes a full copy of the source virtual disk to the destination virtual disk when the connection is restored.

NOSUSPEND

Allows data replication from the source array to the destination array to resume. This causes the same behavior as a restored connection.

SUSPEND

Stops data replication from the source array to the destination array. This causes the same behavior as a failed connection.

WRITEMODE=

Defines the I/O interaction between the destination array and the source array. Possible values are *synchronous* and *asynchronous*.

Example

Suspend replication for the DR group Transactions:

```
SET DR_GROUP "\Data Replication\Transactions" SUSPEND
```

SET FOLDER

The `SET FOLDER` command changes the specified folder properties.



NOTE:

You cannot rename root folders.

Syntax

```
SET FOLDER folder_name
```

Options

The following options are available with the `SET FOLDER` command .

COMMENT=

Associates a user-defined comment with the folder. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

NAME=

The new name of the folder.

Example

Rename the folder `top_secret` to `everyone_knows`:

```
SET FOLDER "\Virtual Disks\top_secret" NAME=everyone_knows
```

SET HOST

The `SET HOST` command changes the specified host properties.

Syntax

```
SET HOST host_name
```

Options

The following options are available with the `SET HOST` command.

ADD WORLD_WIDE_NAME=

Adds the world wide name of the host Fibre Channel adapter.

COMMENT=

Associates a user-defined comment with the host. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

DELETE WORLD_WIDE_NAME=

Deletes the world wide name of the host Fibre Channel adapter.

IP=

The network IP address of the host.

NAME=

The new name of the host.

OPERATING_SYSTEM=

The operating system of the specified host. To set a default operating system, select **User interface options** from Management Server Options window in the user interface. Select one of the following operating systems (they are listed as they appear in the utility):

- HPUX
- IBMAIX
- LINUX
- OPEN_VMS
- SOLARIS
- TRU64
- UNKNOWN
- WINDOWSLH
- WINDOWS
- CUSTOM= (You must include the equal sign after CUSTOM and the value must be 16-digit hexadecimal characters.)



NOTE:

Mac OS X is also a supported operating system. If the host is Mac OS X, select LINUX as the operating system.

Examples

Specify OpenVMS as the operating system for the host `install`:

```
SET HOST \Hosts\install OPERATING_SYSTEM=OPEN_VMS
```

Add a WWN to the host `install`:

```
SET HOST \Hosts\install ADD_WORLD_WIDE_NAME=1000-0000-C922-36CA
```

SET ISCSI_CONTROLLER

The `SET ISCSI_CONTROLLER` command changes the specified iSCSI controller properties.

Syntax

```
SET ISCSI_CONTROLLER iSCSI_controller_name
```

Options

The following options are available with the `SET ISCSI_CONTROLLER` command.

COMMENT=

Associates a user-defined comment with the iSCSI controller. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

GATEWAY=

The gateway for the controller.

IP=

The IP address for the management port.

IP_MODE=

The IP mode of the controller. Possible values are `dynamic` and `static`.

NAME=

The new name of the iSCSI controller.

PORT0_GATEWAY=

The gateway for port 0.

PORT0_IP_ADDRESS=

The IP address of port 0.

PORT0_ISNS_IP_ADDRESS=

The ISNS IP address for port 0.



NOTE:

If you specify `PORT0_ISNS_IP_ADDRESS`, the ISNS is enabled.

PORT0_ISNS_STATE=

The ISNS state of port 0. Possible value is `disable`.



NOTE:

To disable the ISNS, `PORT0_ISNS_STATE` option should be set to `disable` and `PORT0_ISNS_IP_ADDRESS` need not be specified.

PORT0_LINK_REQUESTED=

The requested speed for port 0. Possible values are:

- auto
- 10
- 100
- 1000

PORT0_SUBNET_MASK=

The subnet mask for port 0.

PORT1_GATEWAY=

The gateway for port 1.

PORT1_IP_ADDRESS=

The IP address of port 1.

PORT1_ISNS_IP_ADDRESS=

The ISNS IP address of port 1.

NOTE:

If you specify `PORT1_ISNS_IP_ADDRESS`, the ISNS is enabled.

PORT1_ISNS_STATE=

The ISNS state of port 1. Possible value is `disable`.

NOTE:

To disable the ISNS, `PORT1_ISNS_STATE` option should be set to `disable` and `PORT1_ISNS_IP_ADDRESS` need not be specified.

PORT1_LINK_REQUESTED=

The requested speed for port 1. Possible values are:

- auto
- 10
- 100
- 1000

PORT1_SUBNET_MASK=

The subnet mask for port 1.

SUBNET_MASK=

The subnet mask for the controller.

Example

Set the iSCSI controller gateway address to 16.0.0.0:

```
SET ISCSI_CONTROLLER "\Hardware\iSCSI Devices\iSCSI Controller"  
GATEWAY=16.0.0.0
```

SET ISCSI_HOST

The `SET ISCSI_HOST` command changes the specified iSCSI host properties.

Syntax

```
SET ISCSI_HOST host_name
```

Options

The following options are available with the `SET ISCSI_HOST` command:

COMMENT=

Associates a user-defined comment with the iSCSI host. The maximum number of characters is 128, including spaces; the string must be enclosed in quotes.

NAME=

The name of the iSCSI host.

OPERATING_SYSTEM=

The operating system of the specified iSCSI host. Select one of the following:

- HPUX
- LINUX
- OPEN_VMS
- OTHER
- SOLARIS
- VMWARE
- WINDOWS

NOTE:

- In the graphical user interface, LINUX displays as Linux/OS X.
 - Mac OS X is also a supported operating system. If the host is Mac OS X, select LINUX as the operating system.
-

Example

Specify Linux as the operating system when installing the iSCSI host:

```
SET ISCSI_HOST \Hosts\install OPERATING_SYSTEM=LINUX
```

SET MULTIMIRROR

The `SET MULTIMIRROR` command `FRACTUREs`, `DETACHs`, or `RESYNCs` multiple mirrorclones (virtual disks) with a single command. Up to 10 mirrorclones can be specified.

Syntax

```
SET MULTIMIRROR OPTION VDISK= mirror_clone_name1 VDISK=  
mirror_clone_name2 ...
```

Options

The following options are available with the `SET MULTIMIRROR` command. Only one option can be specified for each command.

FRACTURE

Fractures the relationship between the specified mirrorclone and its source virtual disk. You can resume the relationship by selecting the `RESYNC` option.

RESYNC

Resumes the relationship between the specified mirrorclone and its source virtual disk. The data on the mirrorclone is overwritten with the source virtual disk's data. A mirrorclone that is presented or contains a snapshot cannot be resynchronized.

DETACH

Removes the relationship between the specified mirrorclone and its source virtual disk permanently. Host I/O to the source virtual disk is no longer copied to the mirrorclone and the mirrorclone becomes an independent virtual disk.

Examples

Fracture the relationship between mirrorclones `mc1` and `mc2` and their source virtual disks:

```
SET MULTIMIRROR FRACTURE VDISK=mc1 VDISK=mc2
```

SET OPTIONS

The `SET OPTIONS` command changes the properties of the utility session.

NOTE:

The options you set with the `SET OPTIONS` command are effective for the current session only. Each time you start the utility, the default options are reinstated.

Syntax

SET OPTIONS

Options

The following options are available with the SET OPTIONS command.

COMMAND_DELAY=

The number of seconds (0–300) to wait between issuing commands when running a script from a FILE command. The default is 10 seconds. This option has no effect when entering commands at the command line.

DISPLAY_STATUS

Displays the status of the last command executed. Zero (0) indicates that the command was successful. A nonzero value indicates a full or partial command failure.

DISPLAY_TIME_OFF

Cancels the display of the time before starting and after finishing an SSSU command. DISPLAY_TIME_OFF is the default setting.

DISPLAY_TIME_ON

Enables the display of the time before starting and after finishing an SSSU command.

DISPLAY_WIDTH=

Sets the number of characters (70–500) displayed on a line for LS commands. The default is 80. If you parse the utility output, it is useful to set a high line width. This keeps the lines from wrapping, making the output easier to cut, paste, and parse.

DISPLAY_XMLSTATUS

Displays the status of the last command executed in XML format. Zero (0) indicates that the command was successful. A nonzero value indicates a full or partial command failure.

HIDE_STATUS

Hides the status of the last command executed. This is the default setting. No message is returned if the command is successful. If the command fails, an error message is displayed, but a status is not.

NOCOMMAND_DELAY

Specifies that no wait time occurs between commands issued from a FILE command.

NORETRIES

Specifies that you do not want the scripting utility to retry commands.

NOSAFE_DELETE

Allows deletion of an object even if dependent or related objects are present. The behavior of the `NOSAFE_DELETE` option depends on the mode of operation (entering commands manually or running commands through a script).

For example, if you enter commands manually, the utility prompts you if you delete an object that has dependent or related objects. The `Are you sure?` prompt is displayed. You must enter `yes` to proceed. If you are using a script to run commands, the utility will delete the dependent or related objects without a prompt.

△ CAUTION:

Using the `NOSAFE_DELETE` option can cause accidental deletion of virtual disks or presentations.

ON_ERROR=

Sets the action to occur when an error is encountered. Possible values are:

- `Continue`—In this mode, only the `EXIT` command causes the scripting utility to halt. This is the default and is recommended when you are manually entering commands.
- `Exit_on_error`—Any error causes the scripting utility to exit with an error code. This mode is useful when requesting the entire script to halt immediately if errors occur while executing. This causes the scripting utility to exit on any kind of error: failed command, syntax error, or ambiguous command.
- `Halt_on_error`—This is similar to `exit_on_error`. Any error causes the scripting utility to halt but not exit until any key is pressed. The scripting utility then exits with an error code. This allows you to see the error before the window closes on exit.

NOTE:

If you are entering commands manually, HP does not recommend using `exit_on_error` or `halt_on_error`. These modes cause the utility to exit on any kind of error, including a typographical one.

RETRIES=

The number of minutes (1–120) the utility should retry a command when the HP Command View EVA service is busy or restarting. The default is four minutes.

SAFE_DELETE

Specifies that you want to delete all dependent or related objects before deleting the specified object. For example, if you specify deletion of a virtual disk that has LUNs presented, the `DELETE VDISK` command is rejected and a message explains that you must delete all presented LUNs presented before you can delete the virtual disk. This is the default.

Examples

Set the utility to stop when it encounters an error and not to retry the commands:

```
SET OPTIONS ON_ERROR= HALT_ON_ERROR NORETRIES
```

Set the utility to display the status of the `LS VDISK` command:

```
SET OPTIONS DISPLAY_STATUS LS VDISK
```

Set the utility to display the status of the `LS VDISK` command in XML:

```
SET OPTIONS DISPLAY_XMLSTATUS LS VDISK
```

SET SYSTEM

The `SET SYSTEM` command modifies the specified array properties.

Syntax

```
SET SYSTEM array_name
```

Options

The following options are available with the `SET SYSTEM` command.

COMMENT=

Associates a user-defined comment with the array. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

CONSOLE_LUN_ID=

The LUN used for console communication. If set to zero, no LUN is presented to the host. This option is used for IBM AIX (set to zero), OpenVMS (required), and Tru64 UNIX (recommended). Other host operating systems ignore this option.

MANAGE

Specifies that the array is to be managed by the selected HP Command View EVA instance.

NOTE:

This option allows switching between multiple instances of HP Command View EVA.

NAME=

The new name of the array.

Example

Rename the array `engineering` to `accounting`:

```
SET SYSTEM engineering NAME=accounting
```

SET VDISK

The `SET VDISK` command modifies the specified virtual disk properties.

Syntax

```
SET VDISK virtual_disk_name
```

Options

The following options are available with the `SET VDISK` command.

CHANGE_INTO_CONTAINER

Converts the virtual disk to a container and deletes any data on the virtual disk. Use this option to revert to a previous point-in-time copy (snapclone) if a virtual disk is corrupted. The container has the same settings as the original virtual disk. You can then restore the virtual disk data by creating a snapclone of the previous backup snapclone. When the new snapclone is complete, it becomes an independent virtual disk with the same settings as the corrupted virtual disk. Your data will be as current as your most recent backup snapclone.

COMMENT=

Associates a user-defined comment with the virtual disk. The maximum number of characters is 128 (including spaces) and the string must be enclosed in quotes.

DETACH

Removes the relationship between the mirrorclone and the source virtual disk permanently. Host I/O to the source virtual disk is no longer copied to the mirrorclone and the mirrorclone becomes an independent virtual disk.

FRACTURE

Fractures the relationship between the mirrorclone and the source virtual disk. You can resume the relationship by selecting the `RESYNC` option.

MIRRORCACHE=

Sets the controller's mirror cache. Possible values are `mirrored` (cache is mirrored between both controllers) and `notmirrored` (cache is not mirrored).

 **NOTE:**

For active-active controllers, the only option is `mirrored`. If you try to select `notmirrored`, an error message is displayed.

NAME=

The new name of the virtual disk.

NOPREFERRED_PATH

Allows either controller to handle I/O.

NOREAD_CACHE

Reads are always performed by the physical disks, not the controller's cache.

NOWRITE_PROTECT

Allows writing to the virtual disk from all presented LUNs and hosts.

OS_UNIT_ID=

The ID presented to the host operating system. If set to zero, no ID is presented to the host. This option is used for IBM AIX (set to zero), OpenVMS (required), and Tru64 UNIX (recommended). Other host operating systems ignore this option.

PREFERRED_PATH=

The preferred controller that will handle all I/O for the virtual disks. If the preferred controller fails, the working controller becomes the preferred controller.

- `Path_A_Both`—Controller A fails over to controller B. When controller A restarts, the virtual disks fail back to controller A. This is failover/failback mode.
- `Path_A_Failover`—Controller A fails over to controller B. When controller A restarts, the virtual disks do not fail back over to controller A. This is failover-only mode.
- `Path_B_Both`—Controller B fails over to controller A. When controller B restarts, the virtual disks fail back to controller B. This is failover/failback mode.
- `Path_B_Failover`—Controller B fails over to controller A. When controller B restarts, the virtual disks do not fail back over to controller B. This is failover-only mode.

READ_CACHE

Reads are performed by the controller's cache.

RESTORE

Restores data from the mirrorclone or snapshot to the source virtual disk. Data on the source virtual disk is overwritten even if the source virtual disk is write-protected. Only unrepresented mirrorclones and snapshots are eligible for restoration. A mirrorclone cannot be restored if the mirrorclone source is a DR group member.

RESYNC

Resumes the fractured relationship between the mirrorclone and the source virtual disk. The data on the mirrorclone is overwritten with the source virtual disk's data. A mirrorclone that is presented or contains a snapshot cannot be resynchronized.

SIZE=

The new size of the virtual disk in whole gigabytes (GB). (Fractions are not allowed.) The value can be 2–2000 GB, depending on the disk group's available space. You can specify a value for the capacity of a virtual disk that is smaller than the current size.

△ CAUTION:

Make sure your host operating system can handle changes in volume size before you change the underlying virtual disk size. Changing the size on some operating systems can cause instability or data loss.

When using the GUID Partition Table (GPT) in Windows, the virtual disk should be a minimum 1 GB greater than the host volume size.

WORLD_WIDE_LUN_NAME=

Sets the world wide LUN name of an unrepresented virtual disk. This option does not work on a presented virtual disk.

📝 NOTE:

This option is commonly used to allow a host to point to a new version of a snapshot by giving the new snapshot the same WWN as the old snapshot.

WRITECACHE=

Sets the controller's write cache. Possible values are `writethrough` and `writeback`. With `writethrough`, the operation completes when the data is written to the disk. With `writeback`, the operation completes when the data is written to cache.

WRITE_PROTECT

Does not allow writing to the virtual disk from all presented LUNs and hosts.

Example

Assign the world wide LUN name to the virtual disk archive:

```
SET VDISK "\Virtual Disks\archive"  
WORLD_WIDE_LUN_NAME=6000-1fe1-ff00-0000
```

SHUTDOWN

The `SHUTDOWN` command shuts down any controller displayed by the `LS CONTROLLER` command.

Syntax

```
SHUTDOWN controller_name
```

Options

The following options are available with the `SHUTDOWN` command:

ALL_PEERS

Shuts down all peer controllers (both controllers) on this array. It also shuts down all disk enclosures.

NOALL_PEERS

The default; shuts down only the specified controller.

Examples

Shut down only controller A:

```
SHUTDOWN "\\Hardware\Rack 1\Enclosure 7\Controller A" NOALL_PEERS
```

Shut down controller B and its peer:

```
SHUTDOWN "\\Hardware\Rack 1\Enclosure 7\Controller B" ALL_PEERS
```

3 Troubleshooting

This chapter describes possible issues you may encounter and possible resolutions.

Resetting the array password

Symptom: An array has been password protected and the password has not been entered in HP Command View EVA. The following error message appears when attempting to enter a command:

Error: `API unable to get the lock`

Resolution: Enter the array password in HP Command View EVA.

Losing communication with HP Command View EVA

Symptom: In rare instances, the utility loses communication with HP Command View EVA and reports that it is down, stopped, or restarting, even though it is possible to browse to the HP Command View EVA user interface.

Resolution: Restart HP Command View EVA.

Opening https connection error

Symptom: You open the utility and enter the manager, user name, and password, and the following error message appears:

Error opening https connection

Resolution: Check the following:

- The manager, user name and password are correct.
- The user name is a member of the HP Storage Admins or HP Storage Users group.
- The HP Command View EVA service is running on the server to which the utility is communicating.
- The current version of HP Command View EVA is running.
- If the utility is running on another server, ping the server on which HP Command View EVA is installed.

Resolving general errors

Symptom: The `No Object Found` error or `Neither Success or Failure` error appears.

Resolution: Do one of the following:

- Wait a few seconds and the problem may resolve itself.
- Close all open browser windows, including the HP Command View EVA user interface. You do not need to restart the utility. If the problem persists, restart HP Command View EVA.

4 Configuring an array using the utility

This chapter shows the process of configuring an array using the utility.

1. When you first open the utility, enter the following information:

```
Manager: cvevaserver
```

```
Username: evaadmin
```

```
Password: admintest
```

The utility validates the user credentials for the server and establishes an SSL connection with the server.

2. List the available arrays:

```
NoSystemSelected: ls system
```

```
Systems available on this Manager:
```

```
Uninitialized Storage System [5000-1FE1-0015-1F50]
```

3. Select an array (if the array is uninitialized, "Uninitialized Storage System" with the world wide name xxxx-xxxx-xxxx-xxxx is displayed):

```
NoSystemSelected: select system "Uninitialized Storage System [5000-1FE1-0015-1F50]"
```

4. Add the array Archive and display the options available with the ADD SYSTEM command:

```
Uninitialized Storage System [5000-1FE1-0015-1F50]: add system Archive ?
```

```
The options are:
```

```
COMMENT
```

```
CONSOLE_LUN_ID
```

```
DEVICE_COUNT
```

```
DISKGROUP_DISKTYPE
```

```
SPARE_POLICY
```

5. Add eight disks to the Archive array :

```
Uninitialized Storage System [5000-1FE1-0015-1F50]: add system Archive device_count=8
```

6. List the available arrays:

```
NoSystemSelected: ls system
```

```
Systems available on this Manager:
```

```
Archive
```

7. Select the Archive array :

```
NoSystemSelected: select system Archive
```

8. Add the virtual disk History with a size of 10 GB to the Archive array:

Archive: add vdisk History size=10

9. Add the host MainServer to the array, specifying the WWN and the operating system:

Archive: add host MainServer world_wide_name=1234-4321-1234-4231 operating_system=hpx

10. Present the virtual disk History as LUN 3 to MainServer:

Archive: add lun 3 vdisk=History host=MainServer

11. List the available virtual disks on MainServer:

Archive: ls vdisk

Vdisks available on this Cell:

\Virtual Disks\History\ACTIVE

12. View information about the virtual disk History:

Archive: ls vdisk History

\Virtual Disks\ history\ACTIVE information:

object

objectid: 00200710b4080560671f1000090000000005843

objectname: \Virtual Disks\ history\ACTIVE

objecttype: virtualdisk

objectwwn:

objecthexuid: 6005-08b4-0010-1f67-0000-9000-4358-0000

partitionname: ACTIVE

uid: 8192.7.16.1610942644.1056615.36864.1129840640

parentstoragecellinfo

storagecellname: HSV210_v5100_F670

storagecellid: 08000710b4080560671f100009000000000e942

storagecellwwn: 5005-08B4-0101-F670

objectparentuid: 0.7.16.1610942644.1056615.36864.1129775104

objectparenthexuid: 6005-08b4-0010-1f67-0000-9000-4357-0000

objectparentid: 00000710b4080560671f1000090000000005743

comments: active comments

creationdatetime: 13-Sep-2005 18:12:50

timestampmodify: 83969593

previousclonesourcevdiskid: 00

previousclonesourcevdiskhexuid: 0000-0000-0000-0000-0000-0000-0000-0000

familyname: history

wwlunid: 6005-08b4-0010-1f67-0000-9000-4358-0000

```

onlinecontroller
  controllername .....: Controller A
  controllerid .....: 00000708b4080550591f10000000000000000000
  operationalstate .....: good
  operationalstatedetail .....: operating_normally
  allocatedcapacity .....: 10
  allocatedcapacityblocks .....: 20971520
  virtualdisktype .....: original
  requestedcapacity .....: 10
  requestedcapacityblocks .....: 20971520
  sharingrelationship .....: none
  sharinginformation
  parentvdiskhexuid .....: n/a
  parentvdiskid .....: n/a
  parentvdiskname .....: n/a
  childvdiskhexuid .....: n/a
  childvdiskid .....: n/a
  childvdiskname .....: n/a
  redundancy .....: vraid0
  writecacheactual .....: writethrough
  writecache .....: writethrough
  vdisksecondarystate .....: none
  mirrorcache .....: mirrored
  readcache .....: enable
  iscsipresentationexists .....: yes
  iscsipresentations
  iscsipresentation
  iscsihostipaddress .....: 16.112.98.100
  iscsihostname .....:
  iqn.1991-05.com.microsoft:ait-test5.americas.hpqcorp.net
  iscsihostalias .....:
  iscsiscsireservation .....: none
  vdiskpresentedtoiscsihost .....: yes
  virtualdiskpresented .....: yes

```

```

presentations
presentation
hostid .....: 17800710b4080560591f100000a000000006701
lunnumber .....: 1
hostname .....: \Hosts\iSCSI Host
scsireservationtype .....: none
presentation
hostid .....: 00800710b4080560ae420100005002000000cb00
lunnumber .....: 3
hostname .....: \Hosts\MainServer
scsireservationtype .....: none
writeprotect .....: disable
osunitid .....: 10
diskgroupname .....: \Disk Groups\Default Disk Group
diskgroupid .....: 00010710b4080560671f1000009000000000eb42
preferredpath .....: no_preference

```

13. List the available hosts on MainServer:

```
Archive: ls host MainServer
```

```
Hosts available on this Cell:
```

```
\Hosts\MainServer information:
```

```
object
```

```

objectid .....: 00800710b4080560ae420100005002000000cb00
objectname .....: \Hosts\MainServer
objecttype .....: host
objecthexuid .....: 6005-08b4-0001-42ae-0002-5000-00cb-0000
hostname .....: MainServer
uid .....: 32768.7.16.1610942644.82606.151552.13303808
objectparentuid .....: 1028.4.4.67372036.67372036.67372036.67372036
objectparenthexuid .....: 0404-0404-0404-0404-0404-0404-0404-0404
ipaddress .....: dynamic_ip_assignment
presentations
presentation
lunnumber .....: 3

```

```

virtualdiskid .....: 00200710b4080560ae420100005002000000c700
virtualdiskname .....: \Virtual Disks\History\ACTIVE
operationalstate .....: good
operationalstatedetail .....: initialized_ok
fcadapterports
port
portwwn .....: 1234-4321-1234-4231
directeventing .....: enable
osmode .....: hpux
osmodebitmask .....: n/a

```

14. List the available LUNs on disk 3 of the array MainServer:

```
Archive: ls lun \Hosts\MainServer\3
```

LUNs available on this Cell:

```
\Hosts\MainServer\3 information:
```

```
object
```

```

objectid .....: 00880710b4080560ae420100005002000000cc00
objectname .....: \Hosts\MainServer\3
objecttype .....: presentedunit
objecthexuid .....: 6005-08b4-0001-42ae-0002-5000-00cc-0000
virtualdiskname .....: \Virtual Disks\History\ACTIVE
virtualdiskid .....: 00200710b4080560ae420100005002000000c700
hostname .....: \Hosts\MainServer
hostid .....: 00800710b4080560ae420100005002000000cb00
lunnumber .....: 3

```

15. List the available LUNs on disk 3 of the array MainServer with the output in XML format:

```
Archive: ls lun \Hosts\MainServer\3 xml
```

```
\Hosts\MainServer\3 information:
```

```
<object>
```

```
<objectid>00880710b4080560ae420100005002000000cc00</objectid>
```

```
<objectname>\Hosts\MainServer\3</objectname>
```

```
<objecttype>presentedunit</objecttype>
```

```
<objecthexuid>6005-08b4-0001-42ae-0002-5000-00cc-0000</objecthexuid>
```

```

<objectdiskname>\Virtual Disks\History\ACTIVE</objectdiskname>
<objectdiskid>00200710b4080560ae420100005002000000c700</objectdiskid>
<hostname>\Hosts\MainServer</hostname>
<hostid>00800710b4080560ae420100005002000000cb00</hostid>
<lunnumber>3</lunnumber>
</object>

```

16. View the preferred path connections between local and remote arrays:

Remote system connection information:

```
preferredportgeneral
```

```

remotestoragesystem
storagesystemname .....: Unknown
storagesystemnodewwn .....: 5000-1FE1-5001-B3C0
nbpaths .....: 2
drlicensed .....: N/A
dractive .....: No
managed .....: No
remotesystemportcheckinterval .....:
remotestoragesystem
storagesystemname .....: eva3028
storagesystemnodewwn .....: 5000-1FE1-5001-B350
nbpaths .....: 4
drlicensed .....: N/A
dractive .....: No
managed .....: No
remotesystemportcheckinterval .....:
remotestoragesystem
storagesystemname .....: Unknown
storagesystemnodewwn .....: 5000-1FE1-5005-E380
nbpaths .....: 4
drlicensed .....: N/A
dractive .....: No
managed .....: No
remotesystemportcheckinterval .....:
remotestoragesystem
storagesystemname .....: Unknown
storagesystemnodewwn .....: 5000-1FE1-5006-C0D0
nbpaths .....: 4
drlicensed .....: N/A
dractive .....: No
managed .....: No
remotesystemportcheckinterval .....:
remotestoragesystem
storagesystemname .....: reddy2
storagesystemnodewwn .....: 5000-1FE1-5003-AE50
nbpaths .....: 4
drlicensed .....: Yes
dractive .....: No
managed .....: Yes
remotesystemportcheckinterval .....:
remotestoragesystem
storagesystemname .....: Unknown
storagesystemnodewwn .....: 5000-1FE1-5001-B3B0
nbpaths .....: 4
drlicensed .....: N/A

```



```

dractive .....: No
managed .....: No
remotesystemportcheckinterval .....:

preferredportpathsdetails
remotesystempaths
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5001-B3C0
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 2
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5001-B3C0
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: B
remotehostport .....: 2
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: eva3028
remotestoragesystemnodewwn .....: 5000-1FE1-5001-B350
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 1
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: eva3028
remotestoragesystemnodewwn .....: 5000-1FE1-5001-B350
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: B
remotehostport .....: 1
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: eva3028
remotestoragesystemnodewwn .....: 5000-1FE1-5001-B350
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 2
remotecontrollername .....: B
remotesystempath
remotestoragesystemname .....: eva3028
remotestoragesystemnodewwn .....: 5000-1FE1-5001-B350
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: B
remotehostport .....: 2
remotecontrollername .....: B
remotesystempath

```

```

remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5005-E380
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 1
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5005-E380
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: B
remotehostport .....: 1
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5005-E380
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 1
remotecontrollername .....: B
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5005-E380
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: B
remotehostport .....: 1
remotecontrollername .....: B
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5006-C0D0
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 1
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5006-C0D0
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: B
remotehostport .....: 1
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5006-C0D0
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 2

```

```

remotecontrollername .....: B
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5006-C0D0
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: B
remotehostport .....: 2
remotecontrollername .....: B
remotesystempath
remotestoragesystemname .....: reddy2
remotestoragesystemnodewwn .....: 5000-1FE1-5003-AE50
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 1
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: reddy2
remotestoragesystemnodewwn .....: 5000-1FE1-5003-AE50
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: B
remotehostport .....: 1
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: reddy2
remotestoragesystemnodewwn .....: 5000-1FE1-5003-AE50
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 1
remotecontrollername .....: B
remotesystempath
remotestoragesystemname .....: reddy2
remotestoragesystemnodewwn .....: 5000-1FE1-5003-AE50
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: B
remotehostport .....: 1
remotecontrollername .....: B
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5001-B3B0
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 2
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5001-B3B0
hostportpaths
hostportpath
localhostport .....: 1

```

```
localcontrollername .....: B
remotehostport .....: 2
remotecontrollername .....: A
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5001-B3B0
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: A
remotehostport .....: 2
remotecontrollername .....: B
remotesystempath
remotestoragesystemname .....: Unknown
remotestoragesystemnodewwn .....: 5000-1FE1-5001-B3B0
hostportpaths
hostportpath
localhostport .....: 1
localcontrollername .....: B
remotehostport .....: 2
remotecontrollername .....: B
```

5 Command reference

Table 4 provides an overview of the utility commands. All of these commands may be executed by the HP Storage Administrator.

Table 4 Command reference

Command	Options
ADD CONTAINER	DISK_GROUP= REDUNDANCY= SIZE=
ADD COPY	CONTAINER= DISK_GROUP= NOWAIT_FOR_COMPLETION OS_UNIT_ID= REDUNDANCY VDISK= WAIT_FOR_COMPLETION WORLD_WIDE_LUN_NAME=
ADD DISK_GROUP	COMMENT= DEVICE_COUNT= DISKGROUP_DISKTYPE= OCCUPANCY_ALARM= SPARE_POLICY=
ADD DR_GROUP	ACCESSMODE= COMMENT= DESTINATION_DISK_GROUP= DESTINATION_SYSTEM= DESTINATION_VDISK_NAME= LINK_DOWN_AUTOSUSPEND= LOG_DESTINATION_DISK_GROUP= LOG_SOURCE_DISK_GROUP= MAX_LOG_SIZE= TARGETREDUNDANCY= VDISK= WRITEMODE=
ADD FOLDER	COMMENT=
ADD HOST	COMMENT=

Command	Options
	IP= OPERATING_SYSTEM= WORLD_WIDE_NAME=
ADD ISCSI_CONTROLLER	IP=
ADD ISCSI_HOST	ISCSI_IPHOST= COMMENT= OPERATING_SYSTEM=
ADD ISCSI_LUN	ISCSI_HOST= VDISK=
ADD LICENSES	
ADD LUN	HOST= VDISK=
ADD MIRRORCLONE	CONTAINER= VDISK=
ADD MULTISNAP	CONTAINER= SNAPCLONE SNAPSHOT VDISK=
ADD SNAPSHOT	ALLOCATION_POLICY= CONTAINER= OS_UNIT_ID= REDUNDANCY= VDISK= WORLD_WIDE_LUN_NAME
ADD SYSTEM	COMMENT= CONSOLE_LUN_ID= DEVICE_COUNT= DISKGROUP_DISKTYPE= SPARE_POLICY=
ADD VDISK	COMMENT= DISK_GROUP= MIRRORCACHE= WRITECACHE= NOPREFERRED_PATH NOREAD_CACHE NOWAIT_FOR_COMPLETION NOWRITE_PROTECT OS_UNIT_ID=

Command	Options
	PREFERRED_PATH= READ_CACHE REDUNDANCY= SIZE= WAIT_FOR_COMPLETION WORLD_WIDE_LUN_NAME= WRITE_PROTECT
CAPTURE CONFIGURATION	SAVE_ALL_WORLD_WIDE_LUN_NAME SAVE_DIFFERENT_WORLD_WIDE_LUN_NAME START_AT=
CAPTURE VALIDATE	
CHECK REDUNDANCY	
CLEAR LICENSES	BC CA CV ALL
CODELOAD	
CODELOAD DISK	DISK=
DELETE DISK_GROUP	
DELETE DR_GROUP	
DELETE FOLDER	
DELETE HOST	
DELETE ISCSI_CONTROLLER	
DELETE ISCSI_HOST	
DELETE ISCSI_LUN	ISCSI_HOST= VDISK=
DELETE LUN	
DELETE SYSTEM	
DELETE VDISK	NOWAIT_FOR_COMPLETION WAIT_FOR_COMPLETION
EMVERSION	
EXERCISE_DISK	START STOP

Command	Options
	SUMMARY
EXIT	
EXPORT LICENSES	
FILE	
FIND HOST	
FIND SYSTEM	
FIND VDISK	
HELP	
IMPORT LICENSES	
LOCATE	ON OFF
LOCATE ISCSI_CONTROLLER	ON OFF
LS	The LS command options are: FULL FULL XML NOFULL NOFULL XML Not all LS commands have the XML options.
LS CABINET	
LS CONTAINER	
LS CONTROLLER	
LS CONTROLLER_ENCLOSURE	
LS DISK	
LS DISK_GROUP	
LS DISKSHELF	
LS DR_GROUP	
LS FOLDER	
LS HOST	
LS ISCSI_CONTROLLER	
LS ISCSI_HOST	

Command	Options
LS ISCSI_IPHOST	
LS ISCSI_LUN	ISCSI_LUN_NAME
LS LICENSES	
LS LUN	
LS MANAGER	
LS OPTIONS	
LS PREFERRED_PATH	
LS SNAPSHOT	
LS SYSTEM	
LS TIME	
LS VDISK	
LS WORLD_WIDE_NAME	
MOVE HOST	SOURCE_HOST_NAME DESTINATION_HOST_FOLDER_NAME
MOVE VDISK	SOURCE_VIRTUAL_DISK_NAME DESTINATION_VIRTUAL_DISK_FOLDER_NAME
PAUSE	
REDISCOVER	
REFRESH	
RESTART	ALL_PEERS NOALL_PEERS
SELECT MANAGER	PASSWORD= USERNAME=
SELECT SYSTEM	
SET CABINET	COMMENT= NAME=
SET CONTROLLER	COMMENT= NAME=
SET DISK	COMMENT= NAME=
SET DISK_GROUP	ADD=

Command	Options
	COMMENT= DELETE= NAME= OCCUPANCY_ALARM= SPARE_POLICY=
SET DISKSHELF	COMMENT=
SET DR_GROUP	ACCESSMODE= ADD_VDISK= COMMENT= DELETE_VDISK= DETACH_VDISK= FAILOVER_RESUME FAILOVER_SUSPEND FAILSAFE FORCEFULLCOPY LINK_DOWN_AUTOSUSPEND= MAX_LOG_SIZE= NAME= NOFAILSAFE NOSUSPEND SUSPEND WRITEMODE=
SET FOLDER	COMMENT= NAME=
SET HOST	ADD_WORLD_WIDE_NAME= COMMENT= DELETE_WORLD_WIDE_NAME= IP= NAME= OPERATING_SYSTEM=
SET ISCSI_CONTROLLER	COMMENT= GATEWAY= IP= IP_MODE= NAME= SUBNET_MASK= PORT0_GATEWAY= PORT0_IP_ADDRESS= PORT0_ISNS_IP_ADDRESS= PORT0_ISNS_STATE= PORT0_LINK_REQUESTED=

Command	Options
	PORT0_SUBNET_MASK= PORT1_GATEWAY= PORT1_IP_ADDRESS= PORT1_ISNS_IP_ADDRESS= PORT1_ISNS_STATE= PORT1_LINK_REQUESTED= PORT1_SUBNET_MASK=
SET ISCSI_HOST	COMMENT= NAME= OPERATING_SYSTEM=
SET MULTIMIRRORS	FRACTURE DETACH RESYNC
SET OPTIONS	COMMAND_DELAY= DISPLAY_STATUS DISPLAY_TIME_OFF DISPLAY_TIME_ON DISPLAY_WIDTH= DISPLAY_XMLSTATUS HIDE_STATUS NOCOMMAND_DELAY NORETRIES NOSAFE_DELETE ON_ERROR= RETRIES= SAFE_DELETE
SET SYSTEM	COMMENT= CONSOLE_LUN_ID= MANAGE NAME=
SET VDISK	CHANGE_INTO_CONTAINER COMMENT= DETACH FRACTURE MIRRORCACHE= NAME= NOPREFERRED_PATH NOREAD_CACHE NOWRITE_PROTECT OS_UNIT_ID= PREFERRED_PATH=

Command	Options
	READ_CACHE RESTORE RESYNC SIZE= WORLD_WIDE_LUN_NAME= WRITE_PROTECT WRITECACHE=
SHUTDOWN	ALL_PEERS NOALL_PEERS
SSSU	-a -d -l

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