



NetApp® E-Series Storage Systems

Command Line Interface and Script Commands Quick Reference for SANtricity 11.10

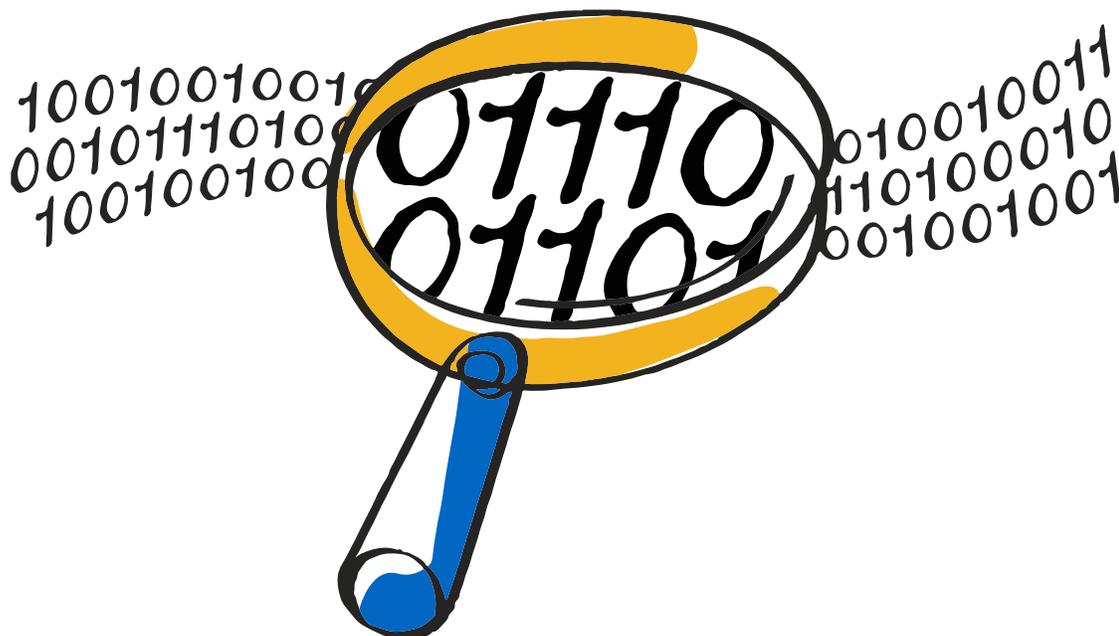


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Formatting the Commands

The command line interface (CLI) is a software application that provides a way to configure and monitor storage arrays. Using the CLI, you can run commands from an operating system prompt, such as the DOS `C:` prompt, a Linux operating system path, or a Solaris operating system path.

The script commands configure and manage a storage array. The script commands are distinct from the CLI commands. You can enter individual script commands, or you can run a file of script commands. When you enter an individual script command, you embed the script command in a CLI command. When you run a file of script commands, you embed the file name in the CLI command.

Some software features described in this document might not be available for your NetApp E-Series Storage System. For questions about available features, contact your NetApp account representative.

The CLI is a feature of the SANtricity® Storage Manager software. To access this product, go to the NetApp Support Site at support.netapp.com.

[Structure of a CLI Command](#)

[Structure of a Script Command](#)

[Naming Conventions](#)

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Structure of a CLI Command

The CLI commands are in the form of a command wrapper and elements embedded into the wrapper. A CLI command consists of these elements:

- A command wrapper identified by the term `SMcli`
- The storage array identifier
- Terminals that define the operation to be performed
- Script commands

The CLI command wrapper is a shell that identifies storage array controllers, embeds operational terminals, embeds script commands, and passes these values to the script engine.

All CLI commands have the following structure:

```
SMcli storageArray terminal script-commands;
```

- **SMcli** invokes the command line interface.
- *storageArray* is the name or the IP address of the storage array.
- *terminal* are CLI values that define the environment and the purpose for the command.
- *script-commands* are one or more script commands or the name of a script file that contains script commands. (The script commands configure and manage the storage array.)

If you enter an incomplete or inaccurate **SMcli** string that does not have the correct syntax, parameter names, options, or terminals, the script engine returns usage information.

[Interactive Mode](#)

[CLI Command Wrapper Syntax](#)

[Command Line Terminals](#)

Interactive Mode

If you enter **SMcli** and a storage array name but do not specify CLI parameters, script commands, or a script file, the command line interface runs in interactive mode. Interactive mode lets you run individual commands without prefixing the commands with **SMcli**.

In interactive mode, you can enter a single command, view the results, and enter the next command without typing the complete **SMcli** string. Interactive mode is useful for determining configuration errors and quickly testing configuration changes.

To end an interactive mode session, type the operating system-specific command for terminating a program, such as **Control-C** on the UNIX operating system or the Windows operating system. Typing the termination command (**Control-C**) while in interactive mode turns off interactive mode and returns operation of the command prompt to an input mode that requires you to type the complete **SMcli** string.

CLI Command Wrapper Syntax

General syntax forms of the CLI command wrappers are listed in this section. The general syntax forms show the terminals and the parameters that are used in each command wrapper. The conventions used in the CLI command wrapper syntax are listed in the following table.

Convention	Definition
a b	Alternative ("a" or "b")
<i>italicized-words</i>	A terminal that needs user input to fulfill a parameter (a response to a variable)
[...] (square brackets)	Zero or one occurrence (square brackets are also used as a delimiter for some command parameters)
{ ... } (curly braces)	Zero or more occurrences
(a b c)	Choose only one of the alternatives
bold	A terminal that needs a command parameter entered to start an action

ATTENTION To run all of the CLI command you must have administrator privileges. Some CLI commands will run without administrator privileges. Many commands, however, will not run. If the CLI command does not run because you do not have correct privilege, the CLI returns an exit code of 12.

```
SMcli host-name-or-IP-address [host-name-or-IP-address]  
[-c "command; {command2};"]  
[-n storage-system-name | -w wwID]  
[-ooutputfile] [-ppassword] [-R (admin | monitor)] [-e] [-S] [-quick]
```

```
SMcli host-name-or-IP-address [hostname-or-IP-address]  
[-fscriptfile]  
[-nstorage-system-name | -wwwID]  
[-ooutputfile] [-ppassword] [-R (admin | monitor)] [-e] [-S] [-quick]
```

```
SMcli (-n storage-system-name | -wwwID)  
[-c "command; {command2};"]  
[-ooutputfile] [-ppassword] [-R (admin | monitor)] [-e] [-S] [-quick]
```

```
SMcli (-nstorage-system-name -wwwID)  
[-fscriptfile]  
[-ooutputfile] [-R (admin | monitor)] [-ppassword] [-e] [-S] [-quick]
```

```
SMcli -aemail:email-address [host-name-or-IP-address1  
[host-name-or-IP-address2]]  
[-nstorage-system-name | -wwwID | -hhost-name]  
[-Iinformation-to-include] [-qfrequency] [-S]
```

```
SMcli -xemail:email-address [host-name-or-IP-address1  
[host-name-or-IP-address2]]  
[-nstorage-system-name | -wwwID | -hhost-name] [-S]
```

```
SMcli (-a | -x) trap:community, host-name-or-IP-address  
[host-name-or-IP-address1 [host-name-or-IP-address2]]  
[-nstorage-system-name | -wwwID | -hhost-name] [-S]
```

```
SMcli -d [-w] [-i] [-s] [-v] [-S]
```

```
SMcli -mhost-name-or-IP-address-Femail-address  
[-gcontactInfoFile] [-S]
```

```
SMcli -A [host-name-or-IP-address [host-name-or-IP-address]]  
[-S]
```

```
SMcli -X (-nstorage-system-name | -wwwID | -hhost-name)
```

```
SMcli -?
```

Command Line Terminals

Terminal	Definition
<i>host-name-or-IP-address</i>	<p>Specifies either the host name or the Internet Protocol (IP) address (<i>xxx.xxx.xxx.xxx</i>) of an in-band managed storage array or an out-of-band managed storage array.</p> <ul style="list-style-type: none"> ▪ If you are managing a storage array by using a host through in-band storage management, you must use the -n terminal or the -w terminal if more than one storage array is connected to the host. ▪ If you are managing a storage array by using out-of-band storage management through the Ethernet connection on each controller, you must specify the <i>host-name-or-IP-address</i> of the controllers. ▪ If you have previously configured a storage array in the Enterprise Management Window, you can specify the storage array by its user-supplied name by using the -n terminal. ▪ If you have previously configured a storage array in the Enterprise Management Window, you can specify the storage array by its World Wide Identifier (WWID) by using the -w terminal.
-A	<p>Adds a storage array to the configuration file. If you do not follow the -A terminal with a <i>host-name-or-IP-address</i>, auto-discovery scans the local subnet for storage arrays.</p>
-a	<p>Adds a Simple Network Management Protocol (SNMP) trap destination or an email address alert destination.</p> <ul style="list-style-type: none"> ▪ When you add an SNMP trap destination, the SNMP community is automatically defined as the community name for the trap, and the <i>host</i> is the IP address or Domain Name Server (DNS) host name of the system to which the trap should be sent. ▪ When you add an email address for an alert destination, the <i>email-address</i> is the email address to which you want the alert message to be sent.
-c	<p>Indicates that you are entering one or more script commands to run on the specified storage array. End each command with a semicolon (;). You cannot place more than one -c terminal on the same command line. You can include more than one script command after the -c terminal.</p>
-d	<p>Shows the contents of the script configuration file. The file content has this format:</p> <pre><i>storage-system-name host-name1 host-name2</i></pre>
-e	<p>Runs the commands without performing a syntax check first.</p>
-F (uppercase)	<p>Specifies the email address from which all alerts will be sent.</p>
-f (lowercase)	<p>Specifies a file name that contains script commands that you want to run on the specified storage array. The -f terminal is similar to the -c terminal in that both terminals are intended for running script commands. The -c terminal runs individual script commands. The -f terminal runs a file of script commands.</p> <p>By default, any errors that are encountered when running the script commands in a file are ignored, and the file continues to run. To override this behavior, use the set session errorAction=stop command in the script file.</p>
-g	<p>Specifies an ASCII file that contains email sender contact information that will be included in all email alert notifications. The CLI assumes that the ASCII file is text only, without delimiters or any expected format. Do not use the -g terminal if a <i>userdata.txt</i> file exists.</p>

Terminal	Definition
-h	Specifies the host name that is running the SNMP agent to which the storage array is connected. Use the -h terminal with these terminals: <ul style="list-style-type: none"> ▪ -a ▪ -x
-I (uppercase)	Specifies the type of information to be included in the email alert notifications. You can select these values: <ul style="list-style-type: none"> ▪ eventOnly – Only the event information is included in the email. ▪ profile – The event and array profile information is included in the email. You can specify the frequency for the email deliveries using the -q terminal.
-i (lowercase)	Shows the IP address of the known storage arrays. Use the -i terminal with the -d terminal. The file contents has this format: <p><i>storage-system-name IP-address1 IPaddress2</i></p>
-m	Specifies the host name or the IP address of the email server from which email alert notifications are sent.
-n	Specifies the name of the storage array on which you want to run the script commands. This name is optional when you use a <i>host-name-or-IP-address</i> . If you are using the in-band method for managing the storage array, you must use the -n terminal if more than one storage array is connected to the host at the specified address. The storage array name is required when the <i>host-name-or-IP-address</i> is not used. The name of the storage array that is configured for use in the Enterprise Management Window (that is, the name is listed in the configuration file) must not be a duplicate name of any other configured storage array.
-o	Specifies a file name for all output text that is a result of running the script commands. Use the -o terminal with these terminals: <ul style="list-style-type: none"> ▪ -c ▪ -f If you do not specify an output file, the output text goes to standard output (stdout). All output from commands that are not script commands is sent to stdout, regardless of whether this terminal is set.
-p	Defines the password for the storage array on which you want to run commands. A password is not necessary if a password has not been set on the storage array. If you set a monitor password for the storage array, the use of the -p parameter is mandatory. Users cannot run any of the non -destructive commands such as the show commands.

Terminal	Definition
-q	<p>Specifies the frequency that you want to receive event notifications and the type of information returned in the event notifications. An email alert notification containing at least the basic event information is always generated for every critical event.</p> <p>These values are valid for the -q terminal:</p> <ul style="list-style-type: none"> ▪ everyEvent – Information is returned with every email alert notification. ▪ 2 – Information is returned no more than once every two hours. ▪ 4 – Information is returned no more than once every four hours. ▪ 8 – Information is returned no more than once every eight hours. ▪ 12 – Information is returned no more than once every 12 hours. ▪ 24 – Information is returned no more than once every 24 hours. <p>Using the -I terminal you can specify the type of information in the email alert notifications.</p> <ul style="list-style-type: none"> ▪ If you set the -I terminal to eventOnly, the only valid value for the -q terminal is everyEvent. ▪ If you set the -I terminal to either the profile value or the supportBundle value, this information is included with the emails with the frequency specified by the -q terminal.
-quick	<p>Reduces the amount of time that is required to run a single-line operation. An example of a single-line operation is the recreate snapshot volume command. This terminal reduces time by not running background processes for the duration of the command.</p> <p>Do not use this terminal for operations that involve more than one single-line operation. Extensive use of this command can overrun the controller with more commands than the controller can process, which causes operational failure. Also, status updates and configuration updates that are collected usually from background processes will not be available to the CLI. This terminal causes operations that depend on background information to fail.</p>
-R (uppercase)	<p>Defines the user role for the password. The roles can be either:</p> <ul style="list-style-type: none"> ▪ admin – The user has privilege to change the storage array configuration. ▪ monitor – The user has privilege to view the storage array configuration, but cannot make changes. <p>The -R parameter is valid only when used with the -p parameter, which specifies that a you define a password for a storage array.</p> <p>The -R parameter is required only if the dual password feature is enabled on the storage array. The -R parameter is not necessary under these conditions:</p> <ul style="list-style-type: none"> ▪ The dual password feature is not enabled on the storage array. ▪ Only one admin role is set and the monitor role is not set for the storage array.

Terminal	Definition
-s (uppercase)	Suppresses informational messages describing the command progress that appear when you run script commands. (Suppressing informational messages is also called silent mode.) This terminal suppresses these messages: <ul style="list-style-type: none"> ▪ Performing syntax check ▪ Syntax check complete ▪ Executing script ▪ Script execution complete ▪ SMcli completed successfully
-s (lowercase)	Shows the alert settings in the configuration file when used with the -d terminal.
-v	Shows the current global status of the known devices in a configuration file when used with the -d terminal.
-w	Specifies the WWID of the storage array. This terminal is an alternate to the -n terminal. Use the -w terminal with the -d terminal to show the WWIDs of the known storage arrays. The file content has this format: <i>storage-system-name world-wide-ID IP-address1 IP-address2</i>
-x (uppercase)	Deletes a storage array from a configuration.
-x (lowercase)	Removes an SNMP trap destination or an email address alert destination. The <i>community</i> is the SNMP community name for the trap, and the <i>host</i> is the IP address or DNS host name of the system to which you want the trap sent.
-?	Shows usage information about the CLI commands.

Structure of a Script Command

All script commands have the following structure:

```
command operand-data (statement-data)
```

- *command* identifies the action to be performed.
- *operand-data* represents the objects associated with a storage array that you want to configure or manage.
- *statement-data* provides the information needed to perform the command.

The syntax for *operand-data* has the following structure:

```
(object-type | all object-types | [qualifier]  
(object-type [identifier] (object-type [identifier] | object-types [identifier-list]))
```

An object can be identified in four ways:

- Object type – Use when the command is not referencing a specific object.
- all parameter prefix – Use when the command is referencing all of the objects of the specified type in the storage array (for example, allVolumes).
- Square brackets – Use when performing a command on a specific object to identify the object (for example, volume [engineering]).
- A list of identifiers – Use to specify a subset of objects. Enclose the object identifiers in square brackets (for example, volumes [sales engineering marketing]).

A qualifier is required if you want to include additional information to describe the objects.

The object type and the identifiers that are associated with each object type are listed in this table.

Table 1. Script Command Object Type Identifiers

Object Type	Identifier
controller	a or b
drive	Tray ID and slot ID
replacementDrive	Tray ID and slot ID
driveChannel	Drive channel identifier
host	User label
hostChannel	Host channel identifier
hostGroup	User label
hostPort	User label
iscsiInitiator	User label or iSCSI Qualified Name (IQN)
iscsiTarget	User label or IQN
snapshot (legacy)	Volume user label
storageArray	Not applicable
tray	Tray ID
volume	Volume user label or volume World Wide Identifier (WWID) (set command only)
volumeCopy	Target volume user label and, optionally, the source volume user label
volumeGroup	User label Valid characters are alphanumeric, a hyphen, and an underscore.

Statement data is in the form of:

- Parameter = value (such as `raidLevel=5`)
- Parameter-name (such as `batteryInstallDate`)
- Operation-name (such as `redundancyCheck`)

A user-defined entry (such as user label) is called a variable. In the syntax, it is shown in italic (such as *trayID* or *volumeGroupName*).

[Synopsis of the Script Commands](#)

[Recurring Syntax Elements](#)

Synopsis of the Script Commands

Because you can use the script commands to define and manage the different aspects of a storage array (such as host topology, drive configuration, controller configuration, volume definitions, and volume group definitions), the actual number of commands is extensive. The commands, however, fall into general categories that are reused when you apply the commands to the different to configure or maintain a storage array. The following table lists the general form of the script commands and a definition of each command.

Table 2. General Form of the Script Commands

Syntax	Description
<code>accept object {statement-data}</code>	Perform the pending operation.
<code>activate object {statement-data}</code>	Sets up the environment so that an operation can take place or performs the operation if the environment is already set up correctly.
<code>autoConfigure storageArray {statement-data}</code>	Automatically creates a configuration that is based on the parameters that are specified in the command.
<code>check object {statement-data}</code>	Starts an operation to report on errors in the object, which is a synchronous operation.
<code>clear object {statement-data}</code>	Discards the contents of some attributes of an object. This operation is destructive and cannot be reversed.
<code>create object {statement-data}</code>	Creates an object of the specified type.
<code>deactivate object {statement-data}</code>	Removes the environment for an operation.
<code>delete object</code>	Deletes a previously created object.
<code>diagnose object {statement-data}</code>	Runs a test and shows the results.
<code>disable object {statement-data}</code>	Prevents a feature from operating.
<code>download object {statement-data}</code>	Transfers data to the storage array or to the hardware that is associated with the storage array.
<code>enable object {statement-data}</code>	Sets a feature to operate.
<code>load object {statement-data}</code>	Transfers data to the storage array or to the hardware that is associated with the storage array. This command is functionally similar to the <code>download</code> command.
<code>recopy object {statement-data}</code>	Restarts a volume copy operation by using an existing volume copy pair. You can change the parameters before the operation is restarted.
<code>recover object {statement-data}</code>	Re-creates an object from saved configuration data and the statement parameters. (This command is similar to the <code>create</code> command.)
<code>recreate object {statement-data}</code>	Restarts a snapshot (legacy) operation by using an existing snapshot (legacy) volume. You can change the parameters before the operation is restarted.
<code>remove object {statement-data}</code>	Removes a relationship from between objects.
<code>repair object {statement-data}</code>	Repairs errors found by the <code>check</code> command.
<code>replace object {statement-data}</code>	The specified object replaces an existing object in the storage array.
<code>reset object {statement-data}</code>	Returns the hardware or an object to an initial state.
<code>resume object</code>	Starts a suspended operation. The operation starts where it left off when it was suspended.
<code>revive object</code>	Forces the object from the Failed state to the Optimal state. Use this command only as part of an error recovery procedure.
<code>save object {statement-data}</code>	Writes information about the object to a file.
<code>set object {statement-data}</code>	Changes object attributes. All changes are completed when the command returns.
<code>show object {statement-data}</code>	Shows information about the object.

Recurring Syntax	Syntax Value
<i>drive-spec</i>	<i>trayID,slotID</i> or <i>trayID,drawerID,slotID</i> A drive is defined as two or three interger literal values separated by a comma. Low-density trays require two values. High-density trays, those trays that have drawers, require three values.
<i>drive-spec-list</i>	<i>drive-specdrive-spec</i>
<i>trayID-list</i>	<i>trayID {trayID}</i>
<i>esm-spec-list</i>	<i>esm-spec {esm-spec}</i>
<i>esm-spec</i>	<i>trayID, (left right)</i>
<i>hex-literal</i>	<i>0xhexadecimal-literal</i>
<i>volumeGroup-number</i>	<i>integer-literal</i>
<i>filename</i>	<i>string-literal</i>
<i>error-action</i>	(<i>stop continue</i>)
<i>drive-channel-identifier</i> (four drive ports per tray)	(<i>1 2 3 4</i>)
<i>drive-channel-identifier</i> (eight drive ports per tray)	(<i>1 2 3 4 5 6 7 8</i>)
<i>drive-channel-identifier-list</i>	<i>drive-channel-identifier {drive-channel-identifier}</i>
<i>host-channel-identifier</i> (four host ports per tray)	(<i>a1 a2 b1 b2</i>)
<i>host-channel-identifier</i> (eight host ports per tray)	(<i>a1 a2 a3 a4 b1 b2 b3 b4</i>)
<i>host-channel-identifier</i> (16 host ports per tray)	(<i>a1 a2 a3 a4 a5 a6 a7 a8 b1 b2 b3 b4 b5 b6 b7 b8</i>)
<i>drive-type</i>	(<i>fibre SATA SAS</i>)
<i>drive-media-type</i>	(<i>HDD SSD unknown allMedia</i>) HDD means hard disk drive. SSD means solid state disk.
<i>repository-spec</i>	<i>instance-based-repository-spec count-based-repository-spec</i>
<i>instance-based-repository-spec</i>	(<i>repositoryRAIDLevel =repository-raid-level repositoryDrives= (drive-spec-list [repositoryVolumeGroupUserLabel =user-label] [trayLossProtect=(TRUE FALSE)¹) [drawerLossProtect=(TRUE FALSE)²] (repositoryVolumeGroup=user-label [freeCapacityArea=integer-literal³)</i>) Specify the <i>repositoryRAIDLevel</i> parameter with the <i>repositoryDrives</i> parameter. Do not specify the RAID level or the drives with the volume group. Do not set a value for the <i>trayLossProtect</i> parameter when you specify a volume group.

Recurring Syntax	Syntax Value
<i>count-based-repository- spec</i>	repositoryRAIDLevel = <i>repository-raid-level</i> repositoryDriveCount= <i>integer-literal</i> [repositoryVolumeGroupUserLabel = <i>user-label</i>] [driveType= <i>drive-type</i> ⁴] [trayLossProtect=(TRUE FALSE) ¹] [drawerLossProtect=(TRUE FALSE) ²] [dataAssurance=(none enabled) ⁵]
<i>wwID</i>	<i>string-literal</i>
<i>gid</i>	<i>string-literal</i>
<i>host-type</i>	<i>string-literal</i> <i>integer-literal</i>
<i>host-card-identifier</i>	(1 2 3 4)
<i>backup-device-identifier</i>	(1 n all) n is a specific slot number. Specifying all includes all of the cache backup devices available to the entire storage array.
<i>nvsram-offset</i>	<i>hex-literal</i>
<i>nvsram-byte-setting</i>	<i>nvsram-value</i> = 0 <i>hexadecimal</i> <i>integer-literal</i> The 0 <i>hexadecimal</i> value is typically a value from 0x0000 to 0xFFFF.
<i>nvsram-bit-setting</i>	<i>nvsram-mask</i> , <i>nvsram-value</i> = 0 <i>hexadecimal</i> , 0 <i>hexadecimal</i> <i>integer-literal</i> The 0 <i>hexadecimal</i> value is typically a value from 0x0000 to 0xFFFF.
<i>ip-address</i>	(0-255).(0-255).(0-255).(0-255)
<i>ipv6-address</i>	(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF): (0-FFFF):(0-FFFF):(0-FFFF) You must enter all 32 hexadecimal characters.
<i>autoconfigure-vols-attr-value-list</i>	<i>autoconfigure-vols-attr-value-pair</i> { <i>autoconfigure-vols-attr-value-pair</i> }
<i>autoconfigure-vols-attr-value-pair</i>	driveType= <i>drive-type</i> driveMediaType= <i>drive-media-type</i> raidLevel= <i>raid-level</i> volumeGroupWidth= <i>integer-literal</i> volumeGroupCount= <i>integer-literal</i> volumesPerGroupCount= <i>integer-literal</i> ⁶ hotSpareCount= <i>integer-literal</i> segmentSize= <i>segment-size-spec</i> cacheReadPrefetch=(TRUE FALSE) securityType=(none capable enabled) ⁷ dataAssurance=(none enabled) ⁵
<i>create-volume-copy-attr-value-list</i>	<i>create-volume-copy-attr-value-pair</i> { <i>create-volume-copy-attr-value-pair</i> }
<i>create-volume-copy-attr-value-pair</i>	copyPriority=(highest high medium low lowest) targetReadOnlyEnabled=(TRUE FALSE) copyType=(offline online) repositoryPercentOfBase=(20 40 60 120 default) repositoryGroupPreference=(sameAsSource otherThanSource default)

Recurring Syntax	Syntax Value
<i>recover-raid-volume-attr-value-list</i>	<i>recover-raid-volume-attr-value-pair</i> { <i>recover-raid-volume-attr-value-pair</i> }
<i>recover-raid-volume-attr-value-pair</i>	owner=(a b) cacheReadPrefetch=(TRUE FALSE) dataAssurance=(none enabled)
<i>cache-flush-modifier-setting</i>	immediate, 0, .25, .5, .75, 1, 1.5, 2, 5, 10, 20, 60, 120, 300, 1200, 3600, infinite
<i>serial-number</i>	string-literal
<i>usage-hint-spec</i>	usageHint=(multiMedia database fileSystem)
<i>iscsiSession</i>	[<i>session-identifier</i>]
<i>iscsi-host-port</i>	(1 2 3 4) The host port number might be 2, 3, or 4 depending on the type of controller you are using.
<i>ethernet-port-options</i>	enableIPv4=(TRUE FALSE) enableIPv6=(TRUE FALSE) IPv6LocalAddress= <i>ipv6-address</i> IPv6RoutableAddress= <i>ipv6-address</i> IPv6RouterAddress= <i>ipv6-address</i> IPv4Address= <i>ip-address</i> IPv4ConfigurationMethod=(static dhcp) IPv4GatewayIP= <i>ip-address</i> IPv4SubnetMask= <i>ip-address</i> duplexMode=(TRUE FALSE) portSpeed=(autoNegotiate 10 100 1000)
<i>iscsi-host-port-options</i>	IPv4Address= <i>ip-address</i> IPv6LocalAddress= <i>ipv6-address</i> IPv6RoutableAddress= <i>ipv6-address</i> IPv6RouterAddress= <i>ipv6-address</i> enableIPv4=(TRUE FALSE) enableIPv6=(TRUE FALSE) enableIPv4Priority=(TRUE FALSE) enableIPv6Priority=(TRUE FALSE) IPv4ConfigurationMethod=(static dhcp) IPv6ConfigurationMethod=(static auto) IPv4GatewayIP= <i>ip-address</i> IPv6HopLimit= <i>integer</i> IPv6NdDetectDuplicateAddress= <i>integer</i> IPv6NdReachableTime= <i>time-interval</i> IPv6NdRetransmitTime= <i>time-interval</i> IPv6NdTimeOut= <i>time-interval</i> IPv4Priority= <i>integer</i> IPv6Priority= <i>integer</i> IPv4SubnetMask= <i>ip-address</i> IPv4VlanId= <i>integer</i> IPv6VlanId= <i>integer</i> maxFramePayload= <i>integer</i> tcpListeningPort= <i>tcp-port-id</i> portSpeed=(autoNegotiate 1 10)
<i>test-devices-list</i>	<i>test-devices</i> { <i>test-devices</i> }
<i>test-devices</i>	controller=(a b) esms=(<i>esm-spec-list</i>) drives=(<i>drive-spec-list</i>)
<i>snapshot (legacy)-schedule-attribute-value-list</i>	<i>snapshot (legacy)-schedule-attribute-value-pair</i> { <i>snapshot (legacy)-schedule-attribute-value-pair</i> }
<i>time-zone-spec</i>	(GMT+HH:MM GMT-HH:MM) [dayLightSaving=HH:MM]
<i>snapshot (legacy)-schedule-attribute-value-pair</i>	startDate=MM:DD:YY scheduleDay=(dayOfWeek all) startTime=HH:MM scheduleInterval= <i>interger</i> endDate=(MM:DD:YY noEndDate) timesPerDay= <i>interger</i>

¹For tray loss protection to work, each drive in a volume group must be in a separate tray. If you set the `trayLossProtect` parameter to **TRUE** and you have selected more than one drive from any one tray, the storage array returns an error. If you set `trayLossProtect` parameter to **FALSE**, the storage array performs operations, but the volume group that you create might not have tray loss protection.

If you set the `trayLossProtect` parameter to **TRUE**, the storage array returns an error if the controller firmware cannot find drives that will enable the new volume group to have tray loss protection. If you set the `trayLossProtect` parameter to **FALSE**, the storage array performs the operation even if it means that the volume group might not have tray loss protection.

²In trays that have drawers for holding the drives, drawer loss protection determines whether data on a volume is accessible or inaccessible if a drawer fails. To help make sure that your data is accessible, set the `drawerLossProtect` parameter to **TRUE**. For drawer loss protection to work, each drive in a volume group must be in separate drawers. If you have a storage array configuration in which a volume group spans several trays, you must make sure that the setting for drawer loss protection works with the setting for tray loss protection. If you set the `trayLossProtect` parameter to **TRUE**, you must set the `drawerLossProtect` parameter to **TRUE**. If you set the `trayLossProtect` parameter to **TRUE**, and you set the `drawerLossProtect` parameter to **FALSE**, the storage array returns an error message and a storage array configuration will not be created.

³To determine if a free capacity area exists, run the `show volumeGroup` command.

⁴The default drive (drive type) is **fibre** (Fibre Channel).

The `driveType` parameter is not required if only one type of drive is in the storage array. If you use the `driveType` parameter, you also must use the `hotSpareCount` parameter and the `volumeGroupWidth` parameter. If you do not use the `driveType` parameter, the configuration defaults to Fibre Channel drives.

⁵The `dataAssurance` parameter applies to the drives in a volume group. Using the `dataAssurance` parameter, you can specify that protected drives must be selected for a volume group. If you want to set the `dataAssurance` parameter to **enabled**, all of the drives in the volume group must be capable of data assurance. You cannot have a mix of drives that are capable of data assurance and drives that are not capable of data assurance in the volume group.

⁶The `volumesPerGroupCount` parameter is the number of equal-capacity volumes per volume group.

⁷The `securityType` parameter enables you to specify the security setting for a volume group that you are creating. All of the volumes are also set to the security setting that you choose. Available options for setting the security setting include:

- **none** – The volume group is not secure.
- **capable** – The volume group is security capable, but security has not been enabled.
- **enabled** – The volume group is security enabled.

NOTE A storage array security key must already be created for the storage array if you want to set `securityType=enabled`. (To create a storage array security key, use the `create storageArray securityKey` command).

Naming Conventions

- Names can have a maximum of 30 characters.

- You can use any combination of alphanumeric characters, hyphens, and underscores for the names of the following components:
 - Storage arrays
 - Host groups
 - Hosts
 - Volume groups
 - Volumes
 - HBA host ports
- You must use unique names. If you do not use unique names, the controller firmware returns an error.
- If the name contains more than one word, hyphens, or underscores, enclose the name in double quotation marks (" "). In some usages, you must also surround the name with square brackets ([]). The description of each parameter indicates whether you need to enclose a parameter in double quotation marks, square brackets, or both.
- The name character string cannot contain a new line.
- On Windows operating systems, you must enclose the name between two back slashes (\\) in addition to other delimiters. For example, the following name is used in a command that runs under a Windows operating system:

```
[ \\ "Engineering\\" ]
```

- For a UNIX operating system and, when used in a script file, the name appears as in the following example:

```
[ "Engineering" ]
```

- When you enter a World Wide Identifier (WWID) of an HBA host port, some usages require that you surround the WWID with double quotation marks. In other uses, you must surround the WWID with angle brackets (<>). The description of the WWID parameter indicates whether you need to enclose the WWID in double quotation marks or angle brackets.

Entering Numerical Names

When the storage management software automatically configures a storage array, the storage management software assigns names that consist of numerical characters. Names that consist only of numerical characters are valid names. Numerical character names, however, must be treated differently than names that start with alphabetic characters.

- Names that are only numbers, such as 1 or 2
- Names that start with a number, such as 1Disk or 32Volume
- [\\ "1\\"]
- [\\ "1Disk\\"]

NOTE If you have any doubt as to the validity of a name, use both double quotation marks and square brackets. Using both makes sure that the name will work, but will not cause any processing issues.

Formatting CLI Commands

Double quotation marks (" ") that are used as part of a name or label require special consideration when you run the CLI commands and the script commands on a Microsoft Windows operating system.

When double quotation marks (" ") are part of a name or value, you must insert a backslash (\) before each double quotation mark character. For example:

```
-c "set storageArray userLabel=\"Engineering\";"
```

In this example, "Engineering" is the storage array name. A second example is:

```
-n \"My\"_Array
```

In this example, "My"_Array is the name of the storage array.

You cannot use double quotation marks (" ") as part of a character string (also called string literal) within a script command. For example, you cannot enter the following string to set the storage array name to "Finance" Array:

```
-c "set storageArray userLabel=\"\"Finance\"Array\";"
```

In the Linux operating system and the Solaris operating system, the delimiters around names or labels are single quotation marks (' '). The UNIX versions of the previous examples are as follows:

```
-c 'set storageArray userLabel="Engineering";'
```

```
-n "My"_Array
```

In a Windows operating system, if you do not use double quotation marks (" ") around a name, you must insert a caret (^) before each special script character. Special characters are ^, |, <, and >.

Insert a caret before each special script character when used with the terminals **-n**, **-o**, **-f**, and **-p**. For example, to specify storage array CLI>CLIENT, enter this string:

```
-n CLI^>CLIENT
```

Insert one caret (^) before each special script character when used within a string literal in a script command. For example, to change the name of a storage array to FINANCE_|_PAYROLL, enter the following string:

```
-c "set storageArray userLabel=\"FINANCE_^|_PAYROLL\";"
```

Formatting Rules for Script Commands

Syntax unique to a specific script command is explained in the Notes section at the end of each script command description.

Case sensitivity – The script commands are not case sensitive. You can type the script commands in lowercase, uppercase, or mixed case. (In the following command descriptions, mixed case is used as an aid to reading the command names and understanding the purpose of the command.)

Spaces – You must enter spaces in the script commands as they are shown in the command descriptions.

Square brackets – Square brackets are used in two ways:

- As part of the command syntax.
- To indicate that the parameters are optional. The description of each parameter tells you if you need to enclose a parameter value in square brackets.

Parentheses – Parentheses shown in the command syntax enclose specific choices for a parameter. That is, if you want to use the parameter, you must enter one of the values enclosed in parentheses. Generally, you do not include parentheses in a script command; however, in some instances, when you enter lists, you must enclose the list in parentheses. Such a list might be a list of tray ID values and slot ID values. The description of each parameter tells you if you need to enclose a parameter value in parentheses.

Vertical bars – Vertical bars in a script command indicate “or” and separate the valid values for the parameter. For example, the syntax for the `raidLevel` parameter in the command description appears as follows:

```
raidLevel=(0 | 1 | 3 | 5 | 6)
```

To use the `raidLevel` parameter to set RAID Level 5, enter this value:

```
raidLevel=5
```

Drive locations – The CLI commands that identify drive locations support both high-capacity drive trays and low-capacity drive trays. A high-capacity drive tray has drawers that hold the drives. The drawers slide out of the drive tray to provide access to the drives. A low-capacity drive tray does not have drawers. For a high-capacity drive tray, you must specify the identifier (ID) of the drive tray, the ID of the drawer, and the ID of the slot in which a drive resides. For a low-capacity drive tray, you need only specify the ID of the drive tray and the ID of the slot in which a drive resides. For a low-capacity drive tray, an alternative method for identifying a location for a drive is to specify the ID of the drive tray, set the ID of the drawer to 0, and specify the ID of the slot in which a drive resides. Separate the ID values with a comma. If you enter more than one set of ID values, separate each set of values with a space. Enclose the set of values in parentheses. For example:

```
(1,1 1,2 1,3 1,4 2,1 2,2 2,3 2,4)
```

or, for a high-capacity drive tray, this example:

```
(1,1,1 1,2,2 1,3,3 1,4,4 2,1,1 2,2,2 2,3,3 2,4,4)
```

Italicized terms – Italicized terms in the command indicate a value or information that you need to provide. For example, when you encounter the italicized term:

numberOfDrives

Replace the italicized term with a value for the number of drives that you want to include with the script command.

Semicolon – Script commands must end with a semicolon (;). You can enter more than one script command on the command line or in a script file. For example, a semicolon is used to separate each script command in the following script file.

```
create volume drives=(0,2 0,3 1,4 1,5 2,6 2,7) raidLevel=5
userLabel="v1" capacity=2gb owner=a;
create volume volumeGroup=2 userLabel="v2" capacity=1gb owner=b;
create volume volumeGroup=2 userLabel="v3" capacity=1gb owner=a;
```

```
create volume drives=(0,4 0,5 1,6 1,7 2,8 2,9) raidLevel=5
userLabel="v4" capacity=2gb owner=b;
create volume volumeGroup=3 userLabel="v5" capacity=1gb owner=a;
create volume volumeGroup=3 userLabel="v6" capacity=1gb owner=b;
```

Formatting CLI Commands in Windows PowerShell

The Windows PowerShell is an interactive and scripting shell that provides access to command-line tools. The Windows PowerShell improves upon the Windows Command Prompt with a more robust set of commands and scripting capability. You can run all of the CLI and script commands in the Windows PowerShell; however, the Windows PowerShell has some unique formatting requirements. The requirements are these:

- Begin all SMcli commands with a period and a forward slash (./)
- SMcli wrapper must be identified as an executable command with the .exe extension (SMcli.exe)
- Enclose the script command in single quotation marks (' ')
- Double quotation marks that are part of a name, file path, or value must have a backslash before each double quotation mark character (\")

Following is an example of a CLI command to create a storage array name in the Windows Powershell. Note the use of the single quotation marks as delimiters for the script command and the backslash double quotation marks around the storage array name, identified as `userLabel` in the command syntax.

```
PS C:\...\StorageManager\client> ./SMcli.exe 123.45.67.88 123.45.67.89  
-c 'set storageArray userLabel=\"Engineering\";'
```

Following is an example of a CLI command to enable a premium feature in the Windows Powershell. Note the use of the backslash double quotation marks before the file path to the premium feature key.

```
PS C:\...\StorageManager\client> ./SMcli.exe 123.45.67.88 123.45.67.89  
-c 'enable storageArray feature file=\"C:\licenseKey.bin\";'
```

In the previous examples both upper case letters and lower case letters are used. This use is to help make clear how the commands are formatted. The Windows PowerShell is, however, not case sensitive and does not require the use specific cases.

Usage Guidelines

This list provides guidelines for writing script commands on the command line:

- You must end all commands with a semicolon (;).
- You can enter more than one command on a line, but you must separate each command with a semicolon (;).
- You must separate each base command and its associated primary parameters and secondary parameters with a space.
- The script engine is not case sensitive. You can enter commands by using uppercase letters, lowercase letters, or mixed-case letters.
- Add comments to your scripts to make it easier for you and future users to understand the purpose of the script commands. (For information about how to add comments, see [Adding Comments to a Script File.](#))

NOTE While the CLI commands and the script commands are not case sensitive, user labels (such as for volumes, hosts, or host ports) are case sensitive. If you try to map to an object that is identified by a user label, you must enter the user label exactly as it is defined, or the CLI commands and the script commands will fail.

Detailed Error Reporting

Data collected from an error encountered by the CLI is written to a file. Detailed error reporting under the CLI works as follows:

- If the CLI must abnormally end running CLI commands and script commands, error data is collected and saved before the CLI finishes.
- The CLI saves the error data by writing the data to a standard file name.
- The CLI automatically saves the data to a file. Special command line options are not required to save the error data.
- You are not required to perform any action to save the error data to a file.
- The CLI does not have any provision to avoid over-writing an existing version of the file that contains error data.

For error processing, errors appear as two types:

- Terminal errors or syntax errors that you might enter
- Exceptions that occur as a result of an operational error

When the CLI encounters either type of error, the CLI writes information that describes the error directly to the command line and sets a return code. Depending on the return code, the CLI also might write additional information about which terminal caused the error. The CLI also writes information about what it was expecting in the command syntax to help you identify any syntax errors that you might have entered.

When an exception occurs while a command is running, the CLI captures the error. At the end of processing the command (after the command processing information has been written to the command line), the CLI automatically saves the error information to a file.

The name of the file to which error information is saved is `excp rpt . txt`. The CLI tries to place the `excp rpt . txt` file in the directory that is specified by the system property `devmgr . datadir`. If for any reason the CLI cannot place the file in the directory specified by `devmgr . datadir`, the CLI saves the `excp rpt . txt` file in the same directory from which the CLI is running. You cannot change the file name or the location. The `excp rpt . txt` file is overwritten every time that an exception occurs. If you want to save the information in the `excp rpt . txt` file, you must copy the information to a new file or a new directory.

Exit Status

This table lists the exit statuses that might be returned and the meaning of each status.

Status Value	Meaning
0	The command terminated without an error.
1	The command terminated with an error. Information about the error also appears.
2	The script file does not exist.
3	An error occurred while opening an output file.
4	A storage array was not at the specified address.
5	Addresses specify different storage arrays.
6	A storage array name does not exist for the host agent that is connected.
7	The storage array name was not at the specified address.
8	The storage array name was not unique.

Status Value	Meaning
9	The storage array name was not in the configuration file.
10	A management class does not exist for the storage array.
11	A storage array was not found in the configuration file.
12	An internal error occurred. This exit status can indicated that you do not have priviledges for running a CLI command from the command line. You must have administrator priviledges to run all of the CLI commands from a command line.
13	Invalid script syntax was found.
14	The controller was unable to communicate with the storage array.
15	A duplicate argument was entered.
16	An execution error occurred.
17	A host was not at the specified address.
18	The WWID was not in the configuration file.
19	The WWID was not at the address.
20	An unknown IP address was specified.
21	The Event Monitor configuration file was corrupted.
22	The storage array was unable to communicate with the Event Monitor.
23	The controller was unable to write alert settings.
24	The wrong organizer node was specified.
25	The command was not available.
26	The device was not in the configuration file.
27	An error occurred while updating the configuration file.
28	An unknown host error occurred.
29	The sender contact information file was not found.
30	The sender contact information file could not be read.
31	The <code>userdata.txt</code> file exists.
32	An invalid <code>-I</code> value in the email alert notification was specified.
33	An invalid <code>-f</code> value in the email alert notification was specified.
34	The <code>-r</code> option is not supported anymore.
35	Invalid alert severity specified.
36	The operation needs either the Administrator or Monitor password to be set.
37	The operation cannot be completed because an invalid Monitor password was entered.
38	The operation cannot be completed because an invalid Administrator password was entered.
39	The password provided is exceeding the character limit.
40	The <code>-R</code> monitor is not supported for this array. Use a valid role and retry the operation.
42	Host address or mail server address is incorrect.

Adding Comments to a Script File

The script engine looks for certain characters or a command to show comments. You can add comments to a script file in three ways:

1. Add text after two forward slashes (//) as a comment until an end-of-line character is reached. If the script engine does not find an end-of-line character in the script after processing a comment, an error message appears, and the script operation is terminated. This error usually occurs when a comment is placed at the end of a script and you have forgotten to press the **Enter** key.

```
// Deletes the existing configuration.  
set storageArray resetConfiguration=true;
```

2. Add text between /* and */ as a comment. If the script engine does not find both a starting comment notation and an ending comment notation, an error message appears, and the script operation is terminated.

```
/* Deletes the existing configuration */  
set storageArray resetConfiguration=true;
```

3. Use the **show** statement to embed comments in a script file that you want to appear while the script file is running. Enclose the text that you want to appear by using double quotation marks (" ").

```
show "Deletes the existing configuration";  
set storageArray resetConfiguration=true;
```

Firmware Compatibility Levels

The script commands and the command parameters do not run under all versions of the controller firmware. The script commands in the following sections list the minimum firmware levels under which the script commands can run. In the script commands, the firmware levels are listed under the heading "Minimum Firmware Level." This list describes how to interpret the information about the firmware levels.

- If a script command does not list a minimum controller firmware level, the script command and all of the parameters associated with that script command can run under any level of controller firmware.
- A controller firmware number without any explanatory information indicates that the controller firmware level applies to the entire script command and all of the parameters for that script command.
- A controller firmware number that is associated with a parameter indicates the minimum controller firmware level under which the parameter can run.

NOTE The minimum controller firmware level indicates support by the software that releases the command, as well as support by all storage management software that picks up usage. CLI support capabilities depend on the hardware used. When an unsupported command is entered, an error message appears.

Examples of Firmware Compatibility Levels

The **create hostGroup** command has the following section.

Minimum Firmware Level

5.20

This level indicates that the entire script command runs under a minimum of controller firmware version 5.20.

The `show volume` command has the following section.

Minimum Firmware Level

5.00

5.43 adds the `summary` parameter

These notations indicate that the script command and all of the parameters except `summary` run under a minimum of controller firmware version 5.00. The `summary` parameter runs under a minimum of controller firmware version 5.43.

Command Reference

ATTENTION The script commands are capable of damaging a configuration and causing loss of data access if not used correctly – Command operations are performed as soon as you run the commands. Some commands can immediately delete configurations or data. Before using the script commands, make sure that you have backed up all data, and have saved the current configuration so that you can reinstall it if the changes you make do not work.

The description of each script command is intended to provide all of the information that you need to be able to use the command. If, however, you have questions about command usage, these sections provide additional information that can help you use the script commands:

- [“Naming Conventions”](#) lists the general rules for entering the names of storage array entities, such as volumes or drives, with the script commands.
- [“Formatting CLI Commands”](#) lists the general formatting rules that apply to the CLI command wrapper.
- [“Formatting Rules for Script Commands”](#) lists the general formatting rules that apply to the script command syntax.
- [“Commands Listed by Function”](#) lists the script commands organized into groups related to the physical features, the logical features, and the operational features of the storage array.
- [“Commands Listed Alphabetically”](#) lists the script commands alphabetically and, for each script command, includes script command name, syntax, and parameters.

IMPORTANT Terminology differences – The names of components and features change from time to time; however, the command syntax does not change at the same time. You will notice minor differences between the terminology used to describe components and features and the terminology used in the syntax to describe those same items when used in a command name, a parameter, or a variable.

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Commands Listed by Function

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AutoSupport Bundle Collection Commands

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[Enable AutoSupport at the EMW Level SMcli Version](#)

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Consistency Group Commands

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[Create Read-Only Snapshot Volume](#)

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[Create SSD Cache](#)
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[Resume SSD Cache](#)
[Set SSD Cache for a Volume](#)
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[Create Storage Array Security Key](#)

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[Change SSD Cache Application Type](#)

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Check Volume Parity
Clear Asynchronous Mirroring Fault
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Clear Storage Array Configuration
Clear Storage Array Core Dump
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Clear Storage Array Firmware Pending Area
Clear Storage Array Recovery Mode
Clear Volume Reservations
Clear Volume Unreadable Sectors
Configure Automatic Support Bundle Collection
Convert Snapshot (Legacy) Volume to Snapshot Group
Create Asynchronous Mirror Group
Create Consistency Group
Create Consistency Group Snapshot Image
Create Consistency Group Snapshot Volume
Create Consistency Group Snapshot Volume Mapping
Create Disk Pool
Create Host
Create Host Group
Create Host Port
Create iSCSI Initiator
Create RAID Volume (Automatic Drive Select)
Create RAID Volume (Free Extent Based Select)
Create RAID Volume (Manual Drive Select)
Create Read-Only Snapshot Volume
Create Snapshot (Legacy) Volume
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Create Snapshot Image
Create Snapshot Volume
Create SSD Cache
Create Storage Array Security Key
Create Synchronous Mirroring
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Create Volume Group
Create Volume in Disk Pool
Deactivate Asynchronous Mirroring
Deactivate Synchronous Mirroring

Delete Asynchronous Mirror Group
Delete Consistency Group
Delete Consistency Group Snapshot Image
Delete Consistency Group Snapshot Volume
Delete Disk Pool
Delete Host
Delete Host Group
Delete Host Port
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Delete Snapshot Image
Delete Snapshot Volume
Delete SSD Cache
Delete Volume
Delete Volume from Disk Pool
Delete Volume Group
Diagnose Controller
Diagnose Controller iSCSI Host Cable
Diagnose Synchronous Mirroring
Disable AutoSupport at the EMW Level SMcli Version
Disable External Security Key Management
Disable Snapshot (Legacy)
Disable Storage Array Feature
Display Automatic Support Bundle Collection Configuration
Display Automatic Support Bundle Collection Schedule
Download Drive Firmware
Download Environmental Card Firmware
Download Storage Array Drive Firmware
Download Storage Array Firmware/NVSRAM
Download Storage Array NVSRAM
Download Tray Configuration Settings
Enable AutoSupport at the EMW Level SMcli Version
Enable Controller Data Transfer
Enable Disk Pool Security
Enable External Security Key Management
Enable Storage Array Feature
Enable Volume Group Security
Establish Asynchronous Mirrored Pair

Export Storage Array Security Key
Import Storage Array Security Key
Increase Capacity of Volume in Disk Pool
Initialize Thin Volume
Load Storage Array DBM Database
Recopy Volume Copy
Recover SAS Port Mis-Wire
Re-create External Security Key
Re-create Snapshot (Legacy)
Re-create Synchronous Mirroring Repository Volume
Reduce Disk Pool Capacity
Remove Drives from SSD Cache
Remove Incomplete Asynchronous Mirrored Pair from Asynchronous Mirror Group
Remove Member Volume from Consistency Group
Remove Synchronous Mirroring
Remove Volume Copy
Remove Volume from Asynchronous Mirror Group
Remove Volume LUN Mapping
Rename Snapshot Volume
Rename SSD Cache
Repair Volume Parity
Replace Drive
Reset Asynchronous Mirror Group Statistics
Reset Controller
Reset iSCSI IP Address
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Resume Consistency Group Snapshot Volume
Resume Snapshot (Legacy) Rollback
Resume Snapshot Image Rollback
Resume Snapshot Volume
Resume SSD Cache

Resume Synchronous Mirroring
Revive Drive
Revive Snapshot Group
Revive Snapshot Volume
Revive Volume Group
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Save Controller NVSRAM
Save Drive Channel Fault Isolation Diagnostic Status
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Save Storage Array Support Data
Save Tray Log
Schedule Automatic Support Bundle Collection Configuration
Set Asynchronous Mirror Group
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Set Controller Service Action Allowed Indicator
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Set Disk Pool (Modify Disk Pool)
Set Drive Channel Status
Set Drive Hot Spare
Set Drive Service Action Allowed Indicator
Set Drive State
Set Event Alert Filtering
Set Foreign Drive to Native

Set Host
Set Host Channel
Set Host Group
Set Host Port
Set iSCSI Initiator
Set iSCSI Target Properties
Set Read-Only Snapshot Volume to Read/Write Volume
Set Session
Set Snapshot (Legacy) Volume
Set Snapshot Group Attributes
Set Snapshot Group Media Scan
Set Snapshot Group Repository Volume Capacity
Set Snapshot Group Schedule
Set Snapshot Volume Media Scan
Set Snapshot Volume Repository Volume Capacity
Set SSD Cache for a Volume
Set Storage Array
Set Storage Array AutoSupport Bundle Disable
Set Storage Array AutoSupport Bundle Enable
Set Storage Array ICMP Response
Set Storage Array iSNS Server IPv4 Address
Set Storage Array iSNS Server IPv6 Address
Set Storage Array iSNS Server Listening Port
Set Storage Array iSNS Server Refresh
Set Storage Array Learn Cycle
Set Storage Array Redundancy Mode
Set Storage Array Security Key
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Set Storage Array Unnamed Discovery Session
Set Synchronous Mirroring
Set Thin Volume Attributes
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Set Volume Attributes for a Volume in a Disk Pool
Set Volume Attributes for a Volume in a Volume Group
Set Volume Copy
Set Volume Group
Set Volume Group Forced State

Set Volume Mapping
Show Asynchronous Mirror Groups
Show Asynchronous Mirror Group Synchronization Progress
Show Blocked Events
Show Cache Backup Device Diagnostic Status
Show Cache Memory Diagnostic Status
Show Consistency Group
Show Consistency Group Snapshot Image
Show Controller
Show Controller Diagnostic Status
Show Controller NVSRAM
Show Current iSCSI Sessions
Show Disk Pool
Show Drive
Show Drive Channel Statistics
Show Drive Download Progress
Show Drive Performance Statistics
Show Host Interface Card Diagnostic Status
Show Host Ports
Show Snapshot Group
Show Snapshot Image
Show Snapshot Volumes
Show SSD Cache
Show SSD Cache Statistics
Show Storage Array
Show Storage Array Auto Configuration
Show Storage Array Core Dump
Show Storage Array DBM Database
Show Storage Array Host Topology
Show Storage Array LUN Mappings
Show Storage Array Negotiation Defaults
Show Storage Array Power Information
Show Storage Array Unconfigured iSCSI Initiators
Show Storage Array Unreadable Sectors
Show String
Show Synchronous Mirroring Volume Candidates
Show Synchronous Mirroring Volume Synchronization Progress
Show Thin Volume
Show Volume

Show Volume Action Progress
Show Volume Copy
Show Volume Copy Source Candidates
Show Volume Copy Target Candidates
Show Volume Group
Show Volume Group Export Dependencies
Show Volume Group Import Dependencies
Show Volume Performance Statistics
Show Volume Reservations
Start Asynchronous Mirroring Synchronization
Start Cache Backup Device Diagnostic
Start Cache Memory Diagnostic
Start Consistency Group Snapshot Rollback
Start Controller Diagnostic
Start Controller Trace
Start Disk Pool Locate
Start Drive Channel Fault Isolation Diagnostics
Start Drive Channel Locate
Start Drive Initialize
Start Drive Locate
Start Drive Reconstruction
Start Host Interface Card Diagnostic
Start iSCSI DHCP Refresh
Start Secure Drive Erase
Start Snapshot (Legacy) Rollback
Start Snapshot Image Rollback
Start SSD Cache Locate
Start SSD Cache Performance Modeling
Start Storage Array Configuration Database Diagnostic
Start Storage Array Core Dump
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Start Storage Array Locate
Start Synchronous Mirroring Synchronization
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Start Volume Group Defragment
Start Volume Group Export
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Start Volume Group Locate
Start Volume Initialization

Stop Cache Backup Device Diagnostic
Stop Cache Memory Diagnostic
Stop Consistency Group Snapshot Rollback
Stop Consistency Group Snapshot Volume
Stop Controller Diagnostic
Stop Disk Pool Locate
Stop Drive Channel Fault Isolation Diagnostics
Stop Drive Channel Locate
Stop Drive Locate
Stop Host Interface Card Diagnostic
Stop Pending Snapshot Images on Consistency Group
Stop Snapshot (Legacy)
Stop Snapshot (Legacy) Rollback
Stop Snapshot Group Pending Snapshot Images
Stop Snapshot Image Rollback
Stop Snapshot Volume
Stop SSD Cache Locate
Stop SSD Cache Performance Modeling
Stop Storage Array Configuration Database Diagnostic
Stop Storage Array Drive Firmware Download
Stop Storage Array iSCSI Session
Stop Storage Array Locate
Stop Tray Locate
Stop Volume Copy
Stop Volume Group Locate
Suspend Asynchronous Mirror Group
Suspend SSD Cache
Suspend Synchronous Mirroring
Test Asynchronous Mirror Group Connectivity
Validate Storage Array Security Key

Activate Asynchronous Mirroring

This command activates the Asynchronous Mirroring premium feature. After you activate the Asynchronous Mirroring premium feature, you must set up an asynchronous mirror group and an asynchronous mirrored pair.

Syntax

```
activate storageArray feature=asyncRemoteMirror
```

Activate iSCSI Initiator

This command activates an inactive iSCSI initiator that was created when the Host Context Agent (HCA) registered the iSCSI initiator to a host.

Syntax

```
activate iscsiInitiator "iscsiID"
```

Activate Storage Array Firmware

This command activates firmware that you have previously downloaded to the pending configuration area on the controllers in the storage array.

Syntax

```
activate storageArray firmware  
[healthCheckMelOverride=(TRUE | FALSE)]
```

Activate Synchronous Mirroring

This command creates the mirror repository volume and activates the Synchronous Mirroring premium feature. When you use this command, you can define the mirror repository volume in one of three ways:

- User-defined drives
- User-defined volume group
- User-defined number of drives

If you choose to define a number of drives, the controller firmware chooses which drives to use for the mirror repository volume.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax (User-Defined Drives)

```
activate storageArray feature=syncMirror  
repositoryRAIDLevel=(0 | 1 | 3 | 5 | 6)  
repositoryDrives=(trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn)  
repositoryVolumeGroupUserLabel="volumeGroupName"  
[trayLossProtect=(TRUE | FALSE)]  
[drawerLossProtect=(TRUE | FALSE)]  
[dataAssurance=(none | enabled)]
```

Syntax (User-Defined Volume Group)

```
activate storageArray feature=syncMirror  
repositoryVolumeGroup=volumeGroupName  
[freeCapacityArea=freeCapacityIndexNumber]
```

Syntax (User-Defined Number of Drives)

```
activate storageArray feature=syncMirror
repositoryRAIDLevel=(1 | 3 | 5 | 6)
repositoryDriveCount=numberOfDrives
repositoryVolumeGroupUserLabel=[volumeGroupName]
[trayLossProtect=(TRUE | FALSE)]
[drawerLossProtect=(TRUE | FALSE)]
[dataAssurance=(none | enabled)]
```

Add Drives to SSD Cache

Use this command to increase the capacity of an existing SSD cache by adding additional solid state disks (SSDs).

Syntax

```
set ssdCache [ssdCacheName]
addDrives=(trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn)
```

Add Member to Consistency Group

This command adds a new base volume as a member to an existing consistency group. You can specify an existing existing repository volume for the new consistency group member, or create a new repository volume. When you create a new repository volume, you identify an existing volume group or an existing disk pool where you want the repository volume.

Syntax for Use With an Existing Repository Volume

```
set consistencyGroup [consistencyGroupName]
addCGMemberVolume="baseVolumeName"
repositoryVolume="repos_XXXX"
```

Syntax for Use When Creating a New Repository Volume in a Volume Group

```
set consistencyGroup [consistencyGroupName]
addCGMemberVolume="baseVolumeName"
repositoryVolume=("volumeGroupName" capacity=capacityValue(KB|MB|GB|TB|bytes))
```

Syntax for Use When Creating a New Repository Volume in a Disk Pool

```
set consistencyGroup [consistencyGroupName]
addCGMemberVolume="baseVolumeName"
repositoryVolume=("diskPoolName" capacity=capacityValue(KB|MB|GB|TB|bytes))
```

Add Volume to Asynchronous Mirror Group

This command adds a primary volume to an asynchronous mirror group. This command is valid only on the local storage array that contains the asynchronous mirror group to which you want to add the primary volume. An

asynchronous mirror group has a repository volume that is used to save data for all of the point-in-time images that are part of the asynchronous mirror group. Each primary volume in the asynchronous mirror group has a corresponding mirror volume on a remote storage array.

Syntax

```
add volume=volumeName asyncMirrorGroup=asyncMirrorGroupName "  
remotePassword=password"  
(repositoryVolume=repos_xxxx |  
repositoryVolume=(volumeGroupName [capacity=capacityValue])  
repositoryVolume=(diskPoolName [capacity=capacityValue]))
```

Autoconfigure Storage Array

This command automatically configures a storage array. Before you enter the **autoConfigure storageArray** command, run the **show storageArray autoConfiguration** command. The **show storageArray autoConfiguration** command returns configuration information in the form of a list of valid drive types, RAID levels, volume information, and hot spare information. (This list corresponds to the parameters for the **autoConfigure storageArray** command.) The controllers audit the storage array and then determine the highest RAID level that the storage array can support and the most efficient volume definition for the RAID level. If the configuration that is described by the returned list is acceptable, you can enter the **autoConfigure storageArray** command without any parameters. If you want to modify the configuration, you can change the parameters to meet your configuration requirements. You can change a single parameter or all of the parameters. After you enter the **autoConfigure storageArray** command, the controllers set up the storage array by using either the default parameters or those you selected.

Syntax

```
autoConfigure storageArray  
[driveType=(fibre | SATA | SAS)]  
[driveMediaType=(hdd | ssd | allMedia | unknown)]  
[raidLevel=(0 | 1 | 3 | 5 | 6)]  
[volumeGroupWidth=numberOfDrives]  
[volumeGroupCount=numberOfVolumeGroups]  
[volumesPerGroupCount=numberOfVolumesPerGroup]  
[hotSpareCount=numberOfHotSpares]  
[segmentSize=segmentSizeValue]  
[cacheReadPrefetch=(TRUE | FALSE)]  
[readAheadMultiplier=multiplierValue]  
[securityType=(none | capable | enabled)]  
[dataAssurance=(none | enabled)]
```

Autoconfigure Storage Array Hot Spares

This command automatically defines and configures the hot spares in a storage array. You can run this command at any time. This command provides the best hot spare coverage for a storage array.

Syntax

```
autoConfigure storageArray hotSpares
```

Cancel Asynchronous Mirror Group Role Reversal

This command cancels a pending role reversal operation between asynchronous mirror groups.

Syntax

```
stop asyncMirrorGroup [asyncMirrorGroupName] rolechange
```

Change SSD Cache Application Type

This command changes the application type associated with the SSD cache. The application type can be web server, database, or multimedia. Changing the application type changes the block size, subblock size, populate on read threshold, and populate on write threshold for the volumes underlying the SSD cache.

Syntax

```
set ssdCache [ssdCacheName] usageHint=(webServer|dataBase|fileSystem)
```

Check Asynchronous Mirror Group Consistency

The command produces a report based on analysis of the data in the repository. This command applies to an asynchronous mirror group that has underlying repository volumes.

Syntax

```
check asyncMirrorGroup[asyncMirrorGroupName]  
repositoryConsistency localVolume=[localVolumeName]  
file="filePath"
```

Check Repository Consistency

This command applies to a number of objects that have underlying repository volumes. The command produces a report based on analysis of the data in the repository.

Syntax

```
check [snapGroup [snapGroupName] repositoryConsistency |  
snapVolume [snapVolumeName] repositoryConsistency |  
volume [volumeName] repositoryConsistency |  
volumeCopy target [targetName] repositoryConsistency |  
asyncMirrorGroup [asyncMirrorGroupName]  
repositoryConsistency localVolume="localVolumeName" ]  
file="filePath"
```

Check Storage Array Connectivity

This command verifies that the local storage array and the remote storage array have a communication path and displays the connection details between the local and remote storage array.

Before creating an asynchronous mirror group, you should check whether the local storage array and the remote storage array can communicate with each other. When you execute this command, the system queries for the remote storage array on all eligible host ports to determine what ports are connected to the remote storage array. The result of the test is a list of all ports on the local storage array along with a list of the remote storage array port addresses accessible through that port.

NOTE Connectivity is tested using all possible channels, and if it is a dual controller configuration, connectivity is checked from each controller. It might take up to 20 minutes to check connectivity between two storage arrays.

Syntax

```
check storageArray connectivity
(remoteStorageArrayName="storageArrayName" |
remoteStorageArrayWwid=<wwID>)
```

Check Synchronous Mirroring Status

This command returns the status of a remote-mirror volume. Use this command to determine when the status of the remote-mirror volume becomes Optimal.

Syntax

```
check syncMirror localVolume [volumeName] optimalStatus timeout=timeoutValue
```

Check Volume Parity

This command checks a volume for parity and media errors and writes the results of the check to a file.

Syntax

```
check volume [volumeName] parity
[parityErrorFile=filename | mediaErrorFile=filename]
[priority=(highest | high | medium | low | lowest)]
[startingLBA=LBValue | endingLBA=LBValue]|
[verbose=(TRUE | FALSE)]
```

Clear Asynchronous Mirroring Fault

This command clears an asynchronous mirroring "sticky" fault from one or more asynchronous mirror groups and one or more asynchronous mirror group member volumes.

An asynchronous mirror group and its member volumes can encounter asynchronous mirroring "sticky" faults, which occur at a single point-in-time but do not impact the functionality of the mirrors. These type of faults must be reviewed, but might or can? not require any changes to the configuration.

An asynchronous mirror group and its member volumes might or can have more than one associated sticky fault. This command clears all of the faults associated with the asynchronous mirror group and its member volume. However, if an asynchronous mirror group has a fault and one of its member volumes has a fault, clearing the fault on the asynchronous mirror group does not clear the fault on its member volume.

Syntax

```
clear asyncMirrorFault(all |
asyncMirrorGroup [asyncMirrorGroupName] |
asyncMirrorGroups ["asyncMirrorGroupName1"
... "asyncMirrorGroupNameN"] |
volume [volumeName] |
volumes ["volumeName1" ... "volumeNameN"])
```

Clear Drive Channel Statistics

This command resets the statistics for all of the drive channels.

Syntax

```
clear allDriveChannels stats
```

Clear Storage Array Configuration

Use this command to perform one of these operations:

- Clear the entire storage array configuration, and return it back to the initial installation state
- Clear the configuration except for security information and identification information
- Clear volume group configuration information and volume configuration information only

ATTENTION Possible damage to the storage array configuration – As soon as you run this command, the existing storage array configuration is deleted.

Syntax

```
clear storageArray configuration [all | volumeGroups]
```

Clear Storage Array Core Dump

This command sets a flag on a controller to allow a new core dump to overwrite an existing core dump.

Syntax

```
set storageArray coreDumpAllowOverWrite
```

Clear Storage Array Event Log

This command clears the Event Log in the storage array by deleting the data in the Event Log buffer.

ATTENTION Possible damage to the storage array configuration – As soon as you run this command, the existing Event Log in the storage array is deleted.

Syntax

```
clear storageArray eventLog
```

Clear Storage Array Firmware Pending Area

This command deletes a firmware image or NVSRAM values that you have previously downloaded from the pending area buffer.

ATTENTION Possible damage to the storage array configuration – As soon as you run this command, the contents of the existing pending area in the storage array are deleted.

Syntax

```
clear storageArray firmwarePendingArea
```

Clear Storage Array Recovery Mode

This command forces a storage array to exit recovery mode.

Syntax

```
clear storageArray recoveryMode
```

Clear Volume Reservations

This command clears persistent volume reservations.

Syntax

```
clear (allVolumes | volume [volumeName] |  
volumes ["volumeName1" ... "volumeNameN"]) reservations
```

Clear Volume Unreadable Sectors

This command clears unreadable sector information from one or more volumes.

Syntax

```
clear (allVolumes | volume [volumeName] |  
volumes ["volumeName1" ... "volumeNameN"]) unreadableSectors
```

Configure Automatic Support Bundle Collection

NOTE This command is an SMcli command, not a script command. You must run this command from a command line. You cannot run this command from the script editor in the storage management software

This command enables or disables the automatic collection of support bundles on one or more storage arrays when a critical MEL event is detected.

Syntax

```
SMcli -supportBundle auto (enable|disable)  
(all | storageArrayName)  
[data=fileName]
```

Convert Snapshot (Legacy) Volume to Snapshot Group

This command migrates from a snapshot (legacy) volume to a snapshot group, and converts from an existing snapshot (legacy) repository volume to a snapshot image repository volume. A maximum of four snapshots (legacy) can be converted to a snapshot group. The snapshots (legacy) must be in a Disabled state and must not be involved in a volume copy operation. The base volume can have only four snapshots (legacy). If the base volume has more than four snapshots (legacy), you must delete the extra snapshots (legacy) before running this command.

NOTE You must disable any snapshots (legacy) before attempting to convert from a snapshot (legacy) volume to a snapshot group. Use the `disableSnapshot` command to disable a snapshot (legacy).

Syntax

```
convert snapshotVolume baseVolume="baseVolumeName"
```

Create Asynchronous Mirror Group

This command creates a new, empty asynchronous mirror group on both the local storage array and the remote storage array. An asynchronous mirror group is a container that can house several mirrored pairs so that they can be managed as one entity. You create an asynchronous mirror group to define the synchronization settings for all mirrored pairs within the group. Each mirrored pair in an asynchronous mirror group share the same synchronization settings, primary and secondary role, and write mode.

The asynchronous mirror group is associated with the local storage array and remote storage array that is used for mirroring. The local storage array is the primary side of the asynchronous mirror group, while the remote storage array is the secondary side of the asynchronous mirror group. All volumes added to the asynchronous mirror group on the local storage array hold the primary role in the mirror relationship. Subsequently, all volumes added to the asynchronous mirror group on the remote storage array hold the secondary role in the mirror relationship.

Make sure that you execute the **Create Asynchronous Mirror Group** command on the local storage array. Asynchronous mirror group creation is initiated from the storage array that contains the volumes that hold the primary role in the mirror relationship. You use the **Create Asynchronous Mirror Group** command to specify the identity of the remote storage array that contains the volumes that hold the secondary role in the mirror relationship.

Syntax

```
create asyncMirrorGroup userLabel="asyncMirrorGroupName"
(remoteStorageArrayName="storageArrayName" | remoteStorageArrayWwn="wwID")
interfaceType=(FC | iSCSI)
[remotePassword="password"]
[syncInterval=integer (minutes | hours | days)]
[warningSyncThreshold=integer (minutes | hours | days)]
[warningRecoveryThreshold=integer (minutes | hours | days)]
[warningThresholdPercent=percentValue]
[autoResync=(TRUE | FALSE)]
```

Create Consistency Group

NOTE This command does not apply to the snapshot (legacy) commands.

This command creates a new, empty consistency group that can contain snapshot groups. You must add the snapshot groups using the **set consistencyGroup addCGMember** command.

Syntax

```
create consistencyGroup userLabel="consistencyGroupName"
[repositoryFullPolicy=(failBaseWrites | purgeSnapImages)]
[repositoryFullLimit=percentValue]
[autoDeleteLimit=numberOfSnapImages]
[enableSchedule=(TRUE | FALSE)]
[schedule (immediate | snapSchedule)]
[rollbackPriority=(lowest | low | medium | high | highest)]
```

Create Consistency Group Snapshot Image

This command creates a new snapshot image for each base volume that is a member of a snapshot consistency group.

Syntax

```
create cgSnapImage consistencyGroup="consistencyGroupName"
```

Create Consistency Group Snapshot Volume

This command creates a snapshot volume of specific images in the base volumes in a consistency group. You can select one base volume or more than one base volumes from the consistency group to include in the snapshot

volume. When you create a snapshot volume of a consistency group you are creating a volume with contents that you can view.

Syntax With User Specified Base Volumes

```
create cgSnapVolume userLabel="cgVolumeName"  
cgSnapImageID="snapCGID:imageID"  
members=(baseVolume1:repos_XXXX ... baseVolumen:repos_YYYY)
```

Syntax When Setting the Consistency Group Snapshot Volume to Read Only

```
create cgSnapVolume userLabel="cgVolumeName"  
cgSnapImageID="snapCGID:imageID"  
readOnly
```

Syntax When Setting the Repository Full Limit

```
create cgSnapVolume userLabel="cgVolumeName"  
cgSnapImageID="snapCGID:imageID"  
members=(baseVolume1:repos_XXXX |  
baseVolume1: (volumeGroupName [capacity=capacityValue]) |  
(baseVolume1:diskPoolName [capacity=capacityValue])  
... baseVolumen:repos_YYYY |  
baseVolumen: (volumeGroupName [capacity=capacityValue]) |  
baseVolumen: (diskPoolName [capacity=capacityValue]))  
repositoryFullLimit=percentValue
```

Create Consistency Group Snapshot Volume Mapping

This command creates a logical mapping from a consistency group snapshot volume to a host or a host group.

Syntax

```
create mapping cgSnapVolume="snapVolumeName"  
(host="hostName" | hostGroup=("hostGroupName" | defaultGroup))
```

Create Disk Pool

This command creates a new disk pool based on the specified parameters. You can create the disk pool by entering either a list of drives or a type of drive that you want to use for the disk pool.

NOTE If you enter a list of drives, make sure that all of the drives have the same capacity. If the drives do not have the same capacity each drive in the disk pool reports capacity equal to the smallest drive.

Syntax

```
create diskPool  
(drives=(trayID1,drawerID1,slotID1 ... trayIDN,drawerIDN,slotIDN) |  
driveType=(fibre|sas|sata))  
userLabel="diskPoolName"  
[driveCount=driveCountValue]
```

```
[warningThreshold=(warningThresholdValue | default)]  
[criticalThreshold=(criticalThresholdValue | default)]  
[criticalPriority=(highest|high|medium|low|lowest)]  
[backgroundPriority=(highest|high|medium|low|lowest)]  
[degradedPriority=(highest|high|medium|low|lowest)]  
[securityType=(none|capable|enabled)]  
[driveMediaType=(hdd | ssd | allMedia | unknown)]  
[dataAssurance=(none|enabled)]
```

Create Host

This command creates a new host. If you do not specify a host group in which to create the new host, the new host is created in the Default Group.

Syntax

```
create host userLabel="hostName"  
[hostGroup=("hostGroupName" | defaultGroup)]  
[hostType=(hostTypeIndexLabel | hostTypeIndexNumber)]
```

Create Host Group

This command creates a new host group.

Syntax

```
create hostGroup userLabel="hostGroupName"
```

Create Host Port

This command creates a new host port identification on a host bus adapter (HBA) or on a host channel adapter (HCA). The identification is a software value that represents the physical HBA or HCA host port to the controller. Without the correct host port identification, the controller cannot receive instructions or data from the host port.

Syntax

```
create hostPort identifier=("wwID" | "gid")  
userLabel="portLabel"  
[host="hostName"]  
[interfaceType=(FC | SAS | IB)]
```

Create iSCSI Initiator

This command creates a new iSCSI initiator object.

Syntax

```
create iscsiInitiator iscsiName="iscsiID"  
userLabel="name "  
host="hostName "  
[chapSecret="securityKey"]
```

Create RAID Volume (Automatic Drive Select)

This command creates a volume group across the drives in the storage array and a new volume in the volume group. The storage array controllers choose the drives to be included in the volume.

NOTE If you have drives with different capacities, you cannot automatically create volumes by specifying the `driveCount` parameter. If you want to create volumes with drives of different capacities, see "[Create RAID Volume \(Manual Drive Select\)](#)."

Syntax

```
create volume driveCount=numberOfDrives  
volumeGroupUserLabel="volumeGroupName "  
raidLevel=(0 | 1 | 3 | 5 | 6)  
userLabel="volumeName "  
driveMediaType=(HDD | SSD | unknown | allMedia)  
[driveType=(fibre | SATA | SAS)  
capacity=volumeCapacity  
owner=(a | b)  
cacheReadPrefetch=(TRUE | FALSE)  
segmentSize=segmentSizeValue  
usageHint=(fileSystem | dataBase | multiMedia)  
trayLossProtect=(TRUE | FALSE)  
drawerLossProtect=(TRUE | FALSE)  
dssPreAllocate=(TRUE | FALSE)  
securityType=(none | capable | enabled)  
dataAssurance=(none | enabled)]
```

Create RAID Volume (Free Extent Based Select)

This command creates a volume in the free space of a volume group.

Syntax

```
create volume volumeGroup="volumeGroupName "  
userLabel="volumeName "  
[freeCapacityArea=freeCapacityIndexNumber  
capacity=volumeCapacity  
owner=(a | b)  
cacheReadPrefetch=(TRUE | FALSE)  
segmentSize=segmentSizeValue  
usageHint=(fileSystem | dataBase | multiMedia)]  
[dssPreAllocate=(TRUE | FALSE)  
securityType=(none | capable | enabled)
```

```
dataAssurance=(none | enabled)]
```

Create RAID Volume (Manual Drive Select)

This command creates a new volume group and volume and lets you specify the drives for the volume.

NOTE You cannot use mixed drive types in the same volume group and volume. This command fails if you specify different types of drives for the RAID volume.

Syntax

```
create volume drives=(trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn)
volumeGroupUserLabel="volumeGroupName"
raidLevel=(0 | 1 | 3 | 5 | 6)
userLabel="volumeName"
[capacity=volumeCapacity
owner=(a | b)
cacheReadPrefetch=(TRUE | FALSE)
segmentSize=segmentSizeValue
usageHint=(fileSystem | dataBase | multiMedia)
trayLossProtect=(TRUE | FALSE)
drawerLossProtect=(TRUE | FALSE)
dssPreAllocate=(TRUE | FALSE)
securityType=(none | capable | enabled)
dataAssurance=(none | enabled)]
```

Create Read-Only Snapshot Volume

This command creates a read-only snapshot volume for the snapshot images of a base volume. To change a read-only snapshot volume to a read/write volume, use the `set snapVolume convertToReadWrite` command.

NOTE You cannot use this command for a snapshot image that is used in online volume copy.

Syntax

```
create snapVolume userLabel="snapVolumeName"
snapImageID="snapCGID:imageID"
readOnly
```

Create Snapshot (Legacy) Volume

This command creates a snapshot (legacy) volume of a base volume. You can also use this command to create a new repository volume group if one does not already exist, or if you would prefer a different repository volume group. This command defines three ways to create a snapshot (legacy) volume:

- In a new repository volume group created from user-defined drives
- In a new repository volume group created from a user-defined number of drives

- In an existing repository volume group

If you choose to define a number of drives, the controller firmware chooses which drives to use for the snapshot (legacy) volume.

Syntax (User-Defined Drives)

```
create snapshotVolume baseVolume="baseVolumeName"
[repositoryRAIDLevel=(1 | 3 | 5 | 6)]
[repositoryDrives=(trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn)]
[repositoryVolumeGroupUserLabel="repositoryVolumeGroupName"]
[trayLossProtect=(TRUE | FALSE)]
[drawerLossProtect=(TRUE | FALSE)]
[freeCapacityArea=freeCapacityIndexNumber]
[userLabel="snapshotVolumeName"]
[warningThresholdPercent=percentValue]
[repositoryPercentOfBase=percentValue]
[repositoryUserLabel="repositoryName"]
[repositoryFullPolicy=(failBaseWrites | failSnapshot)]
[enableSchedule=(TRUE | FALSE)]
[schedule (immediate | snapshotSchedule)]
```

Syntax (User-Defined Number of Drives)

```
create snapshotVolume baseVolume="baseVolumeName"
[repositoryRAIDLevel=(1 | 3 | 5 | 6)]
[repositoryDriveCount=numberOfDrives]
[repositoryVolumeGroupUserLabel="repositoryVolumeGroupName"]
[driveMediaType=(HDD | SSD | unknown | allMedia)]
[driveType=(fibre | SATA | SAS)]
[trayLossProtect=(TRUE | FALSE)]
[drawerLossProtect=(TRUE | FALSE)]
[userLabel="snapshotVolumeName"]
[warningThresholdPercent=percentValue]
[repositoryPercentOfBase=percentValue]
[repositoryUserLabel="repositoryName"]
[repositoryFullPolicy=(failBaseWrites | failSnapshot)]
[enableSchedule=(TRUE | FALSE)]
[schedule (immediate | snapshotSchedule)]
```

Syntax (Existing Repository Volume Group)

```
create snapshotVolume baseVolume="baseVolumeName"
[repositoryVolumeGroup="repositoryVolumeGroupName"]
[repositoryUserLabel="repositoryName"]
[freeCapacityArea=freeCapacityIndexNumber]
[userLabel="snapshotVolumeName"]
[warningThresholdPercent=percentValue]
[repositoryPercentOfBase=percentValue]
[repositoryFullPolicy=(failBaseWrites | failSnapshot)]
[enableSchedule=(TRUE | FALSE)]
[schedule (immediate | snapshotSchedule)]
```

Create Snapshot Group

This command creates a new snapshot group and the associated repository volume. A snapshot group contains a sequence of snapshot images of an associated base volume. A snapshot group has a repository volume that is used to save data for all of the snapshot images that are part of the snapshot group.

Syntax

```
create snapGroup userLabel="snapGroupName" sourceVolume="volumeName"
[(repositoryVolume="repos_xxxx" |
repositoryVolume=(volumeGroupName [capacity=capacityValue]) |
repositoryVolume=(diskPoolName [capacity=capacityValue]))]
[repositoryFullPolicy=(failBaseWrites | purgeSnapImages)]
[rollbackPriority=(highest | high | medium | low | lowest)]
[repositoryFullLimit=percentValue]
[autoDeleteLimit=numberOfSnapImages]
[enableSchedule=(TRUE | FALSE)]
[schedule (immediate | snapshotSchedule)]
```

Create Snapshot Image

This command creates a new snapshot image in one or more existing snapshot groups. Before you can create a snapshot image, you must first have at least one snapshot group into which you can place the snapshot image. To create a snapshot group use the `create snapGroup` command.

Syntax

```
create snapImage (snapGroup="snapGroupName" |
snapGroups=(" snapGroupName1" . . . " snapGroupName"))
```

Create Snapshot Volume

This command creates a snapshot volume with read-write capabilities for snapshot images of a base volume. You can map the snapshot volume to a host and all of the host writes reside in the repository volume associated with the snapshot volume. You can assign the new snapshot volume to an existing repository volume, or you can create a new repository volume in a volume group or disk pool.

NOTE You cannot use this command for a snapshot image that is used in online volume copy.

Syntax

```
create snapVolume userLabel="snapVolumeName" snapImageID="snapCGID:imageID"
[(repositoryVolume="repos_xxxx" |
[repositoryVolume=(volumeGroupName [capacity=capacityValue])]
[repositoryVolume=(diskPoolName [capacity=capacityValue]))]
[repositoryFullLimit=percentValue]
```

Create SSD Cache

This command creates a read cache for a storage array using Solid State Disks (SSDs). Using high performance SSDs to cache read data improves the application I/O performance and response times, and delivers sustained performance improvement across different workloads, especially for high-IOP workloads. SSD cache maximizes the use of expensive fast SSDs.

SSD cache works in addition to the primary cache in the controller DRAM. With controller cache, the data is stored in DRAM after a host read. With SSD cache, the data is copied from user-specified base volumes, and then cached on SSDs.

Syntax

```
create ssdCache userLabel="ssdCacheName"
drives=(trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn)
[updateExistingVolumes=(TRUE|FALSE)]
```

Create Storage Array Security Key

This command creates a new security key for a storage array that has full disk encryption (FDE) drives. This command also sets the security definitions and sets the state to Security Enabled. To use this command successfully, you need to have enough FDE drives to create at least one volume group or one disk pool.

NOTE Before you create a storage array security key, you must set the password for the storage array. Use the **set storageArray** command to set the password for the storage array.

Syntax

```
create storageArray securityKey
[keyIdentifier="keyIdentifierString" ]
[passPhrase="passPhraseString" ]
[file="fileName" ]
[commitSecurityKey=(TRUE | FALSE)]
```

Create Synchronous Mirroring

This command creates both the primary volume and the secondary volume for a synchronous remote mirrored pair. This command also sets the write mode (synchronous write mode or asynchronous write mode) and the synchronization priority.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax

```
create syncMirror primary="primaryVolumeName"
secondary="secondaryVolumeName"
(remoteStorageArrayName="storageArrayName" |
remoteStorageArrayWwn="wwID" )
[remotePassword="password" ]
```

```
[syncPriority=(highest | high | medium | low | lowest)]
[autoResync=(enabled | disabled)]
[writeOrder=(preserved | notPreserved)]
[writeMode=(synchronous | asynchronous)]
[role=(primary | secondary)]
[force=(TRUE | FALSE)]
```

Create Volume Copy

This command creates a volume copy and starts the volume copy operation. This command is valid for both snapshot (legacy) volume copy pairs and snapshot image volume copy pairs.

ATTENTION Starting a volume copy operation overwrites all existing data on the target volume, makes the target volume read-only to hosts, and fails all snapshot (legacy) volumes or snapshot image volumes associated with the target volume, if any exist. If you have used the target volume as a copy before, be sure you no longer need the data or have it backed up.

This command creates volume copies in two ways:

- Volume copy without snapshot (legacy) also called *offline* volume copy
- Volume copy with either snapshot (legacy) or snapshot image, also called *online* volume copy

If you use volume copy without either snapshot (legacy) or snapshot image, you cannot write to the source volume until the copy operation is complete. If you want to be able to write to the source volume before the copy operation is complete, use volume copy with snapshot (legacy) or snapshot image. You can select volume copy with snapshot (legacy) or snapshot image through the optional parameters in the command syntax.

After completion of the volume copy with snapshot (legacy) operation, the snapshot (legacy) is disabled. After completion of the volume copy with snapshot image operation, the snapshot image is deleted and the snapshot volume is disabled.

NOTE You can have a maximum of eight volume copies in progress at one time. If you try to create more than eight volume copies at one time, the controllers return a status of Pending until one of the volume copies that is in progress finishes and returns a status of Complete.

Syntax

```
create volumeCopy source="sourceName"
target="targetName"
[copyPriority=(highest | high | medium | low | lowest)]
[targetReadOnlyEnabled=(TRUE | FALSE)]
[copyType=(offline | online)]
[repositoryPercentOfBase=(20 | 40 | 60 | 120 | default)]
[repositoryGroupPreference=(sameAsSource | otherThanSource | default)]
```

Create Volume Group

This command creates either a free-capacity volume group or a volume group with one volume when you enter a set of unassigned drives.

Syntax

```
create volumeGroup
drives=(trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn)
raidLevel=(0 | 1 | 3 | 5 | 6)
userLabel="volumeGroupName"
[driveMediaType=(HDD | SSD | unknown | allMedia)]
[driveType=(fibre | SATA | SAS)]
[trayLossProtect=(TRUE | FALSE)]
[drawerLossProtect=(TRUE | FALSE)]
[securityType=(none | capable | enabled)]
[dataAssurance=(none | enabled)]
```

Create Volume in Disk Pool

This command creates a new standard RAID volume or a thin volume in an existing disk pool.

NOTE Some parameters for creating a standard RAID volume in a volume group are not compatible for creating volumes of any type in a disk pool. When using older scripts to create volumes in disk pools, make sure that all of the parameters are valid for disk pools. Invalid parameters prevent the scripts from running correctly and cause an error to be posted.

Syntax for Creating a Standard Volume

```
create volume diskPool="diskPoolName"
userLabel="volumeName"
capacity=volumeCapacity
[thinProvisioned=(TRUE | FALSE)]
[owner=(a|b)]
[mapping=(none|default)]
[dataAssurance=(none|enabled)]
[cacheReadPrefetch=(TRUE | FALSE)]
```

Syntax for Creating a Thin Provisioned Volume

```
create volume diskPool="diskPoolName"
userLabel="volumeName"
capacity=volumeCapacity
[thinProvisioned=(TRUE | FALSE)]
[owner=(a|b)]
[mapping=(none|default)]
[dataAssurance=(none|enabled)]
[(existingRepositoryLabel=existingRepositoryName |
newRepositoryCapacity=newRepositoryCapacityValue (KB | MB | GB | TB | Bytes))]
[repositoryMaxCapacity=repositoryMaxCapacityValue (KB|MB|GB|TB|Bytes)]
[warningThresholdPercent=warningThresholdPercentValue]
[repositoryExpansionPolicy=(automatic|manual)]
[cacheReadPrefetch=(TRUE | FALSE)]
```

Deactivate Asynchronous Mirroring

This command deactivates the Asynchronous Mirroring premium feature.

NOTE All existing asynchronous mirror groups or asynchronous mirrored pairs must be deleted from the local storage array and the remote storage array before the Asynchronous Mirroring feature can be deactivated.

Syntax

```
deactivate storageArray feature=asyncRemoteMirror
```

Deactivate Synchronous Mirroring

This command deactivates the Synchronous Mirroring premium feature, disassembles the mirror repository volume, and releases the controller owner of the secondary volume. The controller host port that is dedicated to the secondary volume is available for host data transfers.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax

```
deactivate storageArray feature=syncMirror
```

Delete Asynchronous Mirror Group

This command deletes one or more asynchronous mirror groups from the local storage array and the remote storage array.

NOTE The asynchronous mirror group must be empty before it can be successfully deleted. You must remove all asynchronous mirrored pairs from the asynchronous mirror group before using this command.

Syntax

```
delete (allAsyncMirrorGroups | asyncMirrorGroup["asyncMirrorGroupName"] |  
asyncMirrorGroups ["asyncMirrorGroupName_1" ... "asyncMirrorGroupName_n"])
```

Delete Consistency Group

This command deletes a snapshot consistency group. This command works in two ways:

- You can delete both the consistency group and the repository volumes contained by the consistency group.
- You can delete only the consistency group and leave the repository volumes that are contained by the consistency group intact.

Syntax

```
delete consistencyGroup ["consistencyGroupName"]  
[deleteRepositoryMembers=(TRUE | FALSE)]
```

Delete Consistency Group Snapshot Image

This command deletes the snapshot images in a consistency group.

Syntax

```
delete cgSnapImage consistencyGroup="consistencyGroupName"  
[(deleteCount=numberOfSnapImages)  
[retainCount=numberOfSnapImages)]  
[ignoreSnapVolume=(TRUE | FALSE)]
```

Delete Consistency Group Snapshot Volume

This command deletes the snapshot volume of a consistency group. Optionally, you can also delete the repository members.

Syntax

```
delete cgSnapVolume ["snapVolumeName"]  
[deleteRepositoryMembers=(TRUE | FALSE)]
```

Delete Disk Pool

ATTENTION Possible damage to the storage array configuration – All of the data in the disk pool is lost as soon as you run this command.

This command deletes a disk pool. Depending on your version of the storage management software, this command also deletes all of the volumes in the disk pool. If your version of the storage management software does not support automatic deletion of the volumes, you can force the deletion of the disk pool and volumes.

Syntax

```
delete diskPool [diskPoolName]  
[force=(TRUE | FALSE)]
```

Delete Host

This command deletes one or more hosts.

Syntax

```
delete (host [hostName] |
hosts ["hostName1" ... "hostNameN"])
```

Delete Host Group

This command deletes a host group.

ATTENTION Possible damage to the storage array configuration – This command deletes all of the host definitions in the host group.

Syntax

```
delete hostGroup [hostGroupName]
```

Delete Host Port

This command deletes a host port identification. The identification is a software value that represents the physical host port to the controller. By deleting the identification, the controller no longer recognizes instructions and data from the host port.

Syntax

```
delete hostPort [hostPortName]
```

Delete iSCSI Initiator

This command deletes a specific iSCSI initiator object.

Syntax

```
delete iscsiInitiator (<"iscsiID"> | ["name"])
```

Delete Snapshot (Legacy) Volume

This command deletes one or more snapshot (legacy) volumes or snapshot (legacy) repository volumes. You can also use this command to remove schedules for creating snapshots (legacy).

ATTENTION Possible damage to the storage array configuration – All of the data in the volume is lost as soon as you run this command.

Syntax

```
delete (volume [volumeName] |
```


Syntax

```
delete ssdCache [ssdCacheName]
```

Delete Volume

This command deletes one or more standard volumes, snapshot (legacy) volumes, or snapshot (legacy) repository volumes.

ATTENTION Possible damage to the storage array configuration – All of the data in the volume is lost as soon as you run this command.

Syntax

```
delete (allVolumes |  
volume [volumeName] |  
volumes [volumeName1 ... volumeNameN])  
[removeVolumeGroup=(TRUE | FALSE)]  
[force=(TRUE | FALSE)]
```

Delete Volume from Disk Pool

This command deletes either normal or thin volumes from a disk pool. You also can use this command to delete any schedules related to the volume. When you delete the schedule the volume is not deleted.

ATTENTION Possible damage to the storage array configuration – All of the data in the volume is lost as soon as you run this command.

Syntax

```
delete (allVolumes |  
volume [volumeName] |  
volumes ["volumeName1" ... "volumeNameN"]  
[removeVolumeGroup=(TRUE | FALSE)]  
[force=(TRUE | FALSE)]  
[schedule]  
[retainRepositoryMembers=(TRUE | FALSE)]
```

Delete Volume Group

ATTENTION Possible damage to the storage array configuration – All of the data in the volume group is lost as soon as you run this command.

This command deletes an entire volume group and its associated volumes.

Syntax

```
delete volumeGroup [volumeGroupName]
```

Diagnose Controller

This command runs diagnostic tests on the controller. The diagnostic tests consist of loopback tests in which data is written to the drives and read from the drives.

Syntax

```
diagnose controller [(a | b)]  
loopbackDriveChannel=(allchannels | (1 | 2 | 3 | 4 | 5 | 6 | 7 | 8))  
testID=(1 | 2 | 3 | discreteLines)  
[patternFile="filename"]
```

Diagnose Controller iSCSI Host Cable

This command runs diagnostic tests on the copper cables between iSCSI Host interface cards and a controller. You can run diagnostics on a selected port or all ports. The ports must be able to support the cable diagnostics. If the ports do not support cable diagnostics an error is returned.

Syntax

```
diagnose controller [(a | b)]  
iscsiHostPort [(all | 1 | 2 | 3 | 4)]  
testID=cableDiagnostics
```

Diagnose Synchronous Mirroring

This command tests the connection between the specified primary volumes and the mirror volumes on a storage array with the Synchronous Mirroring premium feature enabled.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax

```
diagnose syncMirror (primary [primaryVolumeName] |  
primaries ["primaryVolumeName1" ... "primaryVolumeNameN"])  
testID=connectivity
```

Disable AutoSupport at the EMW Level SMcli Version

NOTE This command is an SMcli command, not a script command. You must run this command from a command line. You cannot run this command from the script editor in the storage management software.

This command turns off the AutoSupport (ASUP) bundle collection feature for all managed storage arrays.

Syntax

```
SMcli disable autoSupportFeature
```

Disable External Security Key Management

This command disables external security key management for a storage array that has full disk encryption drives.

Syntax

```
disable storageArray externalKeyManagement  
file="fileName"  
passPhrase="passPhraseString"
```

Disable Snapshot (Legacy)

This command stops a copy-on-write operation. This command performs the same action as the legacy **stop snapshot** command.

Syntax

```
disableSnapshot (volume [volumeName] |  
volumes [volumeName1 ... volumeNameN])
```

Disable Storage Array Feature

This command disables a storage array premium feature. Run the **show storageArray** command to show a list of the feature identifiers for all enabled premium features in the storage array.

Syntax

```
disable storageArray (featurePack | feature=featureAttributeList)
```

The *featureAttributeList* can be one or more of these attribute values. If you enter more than one attribute value, separate the values with a space.

- volumeCopy
- snapshot
- asyncMirror
- syncMirror

- `mixedDriveTypes`
- `goldKey`
- `driveSecurity`
- `enterpriseSecurityKeyMgr`
- `thinProvisioning`
- `storagePartition[2|4|8|16|32|64|96|128|192|256|512|Max]`
- The form for this attribute value is a combination of the alphabetical term merged with the numerical value, as shown by this example: `storagePartition256`
- `driveSlotLimit[16|24|32|48|60|64|72|96|112|10|128|136|144|180|192|256|272|300|360|384|448|480|Max]`
- The form for this attribute value is a combination of the alphabetical term merged with the numerical value, as shown by this example: `driveSlotLimit360`
- `ssdCache`
- `dataAssurance`
- `SSDSupport`
- `highPerformanceTier`
- `raid6`

NOTE The following attribute is for enabling the snapshot (legacy) feature only.

- `snapshot[2|4|8|16]`
- The form for this attribute value is a combination of the alphabetical term merged with the numerical value, as shown by this example: `snapshot16`

NOTE The `remoteMirror` attribute is valid only for firmware versions before 7.84. Starting with firmware 7.84 the `remoteMirror` attribute is replaced by `syncMirror`.

- `remoteMirror[8|16|32|64|128]`
- The form for this attribute value is a combination of the alphabetical term merged with the numerical value, as shown by this example: `remoteMirror128`

Display Automatic Support Bundle Collection Configuration

NOTE This command is an SMcli command, not a script command. You must run this command from a command line. You cannot run this command from the script editor in the storage management software

This command displays the automatic support bundle collection settings.

Syntax

```
SMcli -supportBundle auto show
```

Display Automatic Support Bundle Collection Schedule

NOTE This command is an SMcli command, not a script command. You must run this command from a command line. You cannot run this command from the script editor in the storage management software

This command displays the schedule for collecting support bundles for all storage arrays.

Syntax

```
SMcli -supportBundle schedule show
```

Download Drive Firmware

This command downloads a firmware image to a drive.

ATTENTION Possible damage to the storage array configuration – Downloading drive firmware incorrectly can result in damage to the drives or a loss of data access.

This command is intended for downloading a firmware image to only one drive at a time. If you use this command in a script, make sure that you use this command only once. If you use this command more than once, the operation can fail. You can download firmware images to all of the drives in a storage array at one time by using the **download storageArray driveFirmware** command.

Syntax

```
download drive [trayID,drawerID,slotID] firmware file="filename"
```

Download Environmental Card Firmware

This command downloads environmental services module (ESM) firmware.

Syntax

```
download (allTrays | tray [trayID])  
firmware file="filename"
```

Download Storage Array Drive Firmware

This command downloads firmware images to all of the drives in the storage array.

Syntax

```
download storageArray driveFirmware file="filename"  
[file="filename2"... file="filenameN"]
```

Download Storage Array Firmware/NVSRAM

This command downloads firmware and, optionally, NVSRAM values for the storage array controller. If you want to download only NVSRAM values, use the `download storageArray NVSRAM` command.

Syntax

```
download storageArray firmware [, NVSRAM ]
file="filename" [, "NVSRAM-filename" ]
[downgrade=(TRUE | FALSE)
activateNow=(TRUE | FALSE)
healthCheckMelOverride=(TRUE | FALSE)]
```

Download Storage Array NVSRAM

This command downloads the NVSRAM values for the storage array controller.

Syntax

```
download storageArray NVSRAM file="filename"
[healthCheckMelOverride=(TRUE | FALSE)]
```

Download Tray Configuration Settings

This command downloads the factory default settings to all of the drive trays in a storage array or to a specific drive tray in a storage array.

Syntax

```
download (allTrays | tray [trayID]) configurationSettings
file="filename"
```

Enable AutoSupport at the EMW Level SMcli Version

NOTE This command is an SMcli command, not a script command. You must run this command from a command line. You cannot run this command from the script editor in the storage management software.

This command turns on the AutoSupport (ASUP) bundle collection feature for all managed storage array and makes it possible to transmit the bundle to a predesignated technical support site. After you enable the ASUP feature, any ASUP capable storage array is automatically prepared to collect and send support related data to Technical Support. The data can then be used for remote troubleshooting and problem analysis.

Syntax

```
SMcli enable autoSupportFeature
```

Enable Controller Data Transfer

This command revives a controller that has become quiesced while running diagnostics.

Syntax

```
enable controller [(a | b)] dataTransfer
```

Enable Disk Pool Security

This command converts a non-secure disk pool to a secure disk pool.

NOTE All of the drives that comprise the disk pool must be security capable.

Syntax

```
enable diskPool [diskPoolName] security
```

Enable External Security Key Management

This command enables external security key management for a storage array that has full disk encryption drives.

Syntax

```
enable storageArray externalKeyManagement  
file="fileName" |  
passPhrase="passPhraseString"
```

Enable Storage Array Feature

This command enables a premium feature for either a permanent upgrade to the storage array or a trial period. This command performs one of these actions:

- Enables a feature key for a permanent upgrade of a feature
- Enables a feature key for a permanent upgrade of a feature pack
- Enables a feature for a trial period

A feature pack is a predefined set of several premium features, such as Storage Partitioning and Synchronous Mirroring. These premium features are combined for the convenience of the users. When users install a feature pack, all of the premium features in the feature pack are installed at one time.

Each premium feature is managed by a license key that is generated for a specific feature or feature pack and a specific storage array. The license key is delivered as a file that you run to apply the license for the feature.

To determine which features are loaded on the storage array run the **show storageArray features** command. The **show storageArray features** command lists all of the premium features installed on the storage array,

which premium features can be evaluated for a trial period, which premium features are enabled, and which premium features are disabled.

Syntax to Enable a Feature Key

```
enable storageArray feature file="filename"
```

The `file` parameter identifies the file path and the file name of a valid feature key file. Enclose the file path and the file name in double quotation marks (" "). For example:

```
file="C:\Program Files\CLI\dnld\ftrkey.key"
```

Valid file names for feature key files end with a `.key` extension.

You will need a feature key file for each premium feature that you want to enable.

Syntax to Enable a Feature Pack

```
enable storageArray featurePack file="filename"
```

The `file` parameter identifies the file path and the file name of a valid feature pack file. Enclose the file path and the file name in double quotation marks (" "). For example:

```
file="C:\Program Files\CLI\dnld\ftrpk.key"
```

Valid file names for feature key files end with a `.key` extension.

Syntax to Enable a Feature for a Trial Period

```
enable storageArray feature=featureAttributeList
```

To evaluate a feature for a trial period, you can enter one or more of the following attribute values for the `featureAttributeList`. If you enter more than one attribute value, separate the values with a space.

- `asyncMirror`
- `syncMirror`
- `snapshot`
- `ssdCache`
- `volumeCopy`
- `thinProvisioning`

ATTENTION Before you enable the High Performance Tier premium feature, stop all host I/O operations to the storage array. When you enable the High Performance Tier premium feature, both controllers in the storage array will immediately reboot.

- `highPerformanceTier`
- `SSDSupport`

Enable Volume Group Security

This command converts a non-secure volume group to a secure volume group.

Syntax

```
enable volumeGroup [volumeGroupName] security
```

Establish Asynchronous Mirrored Pair

Use this command to complete an asynchronous mirrored pair on the remote storage array by adding a secondary volume to an existing asynchronous mirror group. Before you run this command, the asynchronous mirror group must exist and the primary volume must exist in the asynchronous mirror group. After this command successfully completes, asynchronous mirroring starts between the primary volume and the secondary volume.

The two volumes that comprise an asynchronous mirrored pair function as a single entity. Establishing an asynchronous mirrored pair allows you to perform actions on the entire mirrored pair versus the two individual volumes.

Syntax

```
establish asyncMirror volume="secondaryVolumeName"  
asyncMirrorGroup="asyncMirrorGroupName"  
primaryVolume="primayVolumeName"
```

Export Storage Array Security Key

This command saves a full disk encryption (FDE) security key to a file. You can transfer the file from one storage array to another storage array. The file enables you to move FDE drives between storage arrays.

Syntax

```
export storageArray securityKey  
passPhrase="passPhraseString"  
file="fileName"
```

Import Storage Array Security Key

This command unlocks one or more full disk encryption (FDE) drives that you have imported from one storage array to another storage array. Only the FDE drives with the matching security key from the imported storage array are unlocked. After they are unlocked, the security key for the new storage array is applied.

Syntax

```
import storageArray securityKey file="fileName"  
passPhrase="passPhraseString"
```

Increase Capacity of Volume in Disk Pool

This command increases the capacity of either a standard volume or a repository volume in a disk pool. In this command, a standard volume is also called a thick volume.

NOTE You cannot use this command to increase the capacity of a thin volume.

Syntax

```
start increaseVolumeCapacity volume="volumeName"
incrementalCapacity=volumeCapacity
[addDrives=(trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn)]
```

Initialize Thin Volume

This command initializes or re-initializes a thin volume.

- Used without any of the optional parameters, this command deletes the data on the thin volume. The repository volume capacity is not affected.
- Used with any of the optional parameters, this command cause reinitialization and repository volume actions.

NOTE Initializing a thin volume starts a long-running operation that you cannot stop.

Syntax

```
start volume [volumeName] initialize
[existingRepositoryLabel=existingRepositoryName]
[diskPool=diskPoolName capacity=capacityValue]
[retainRepositoryMembers=(TRUE|FALSE)]
```

Load Storage Array DBM Database

This command restores a Database Management (DBM) database image by retrieving the image from a file or from cache. This command restores a storage array DBM database to the exact configuration that existed when the database image was captured using the **save storageArray dbmDatabase** command. The data in a file can be just RAID configuration data or all data, including data for RAID configuration, volume groups and disk pools. The data in a cache location always includes all data.

Before using this command with the **file** option, you must first obtain a validator string (a security code) from your Technical Support Representative. To obtain a validator, use the **save storageArray dbmValidator** command to generate an XML file that contains validator information. Your Technical Support Representative uses the XML file to generate the validator string required for this command.

Syntax

```
load storageArray dbmDatabase
((file="filename" validator="validatorValue") | sourceLocation=onboard)
[controller [(a|b)]]
[contentType=(partial | all)]
```

Recopy Volume Copy

NOTE With firmware version 7.83 the `copyType=(online | offline)` parameter is no longer used.

This command reinitiates a volume copy operation using an existing volume copy pair. This command is valid for both snapshot (legacy) volume copy pairs and snapshot image volume copy pairs.

This command works with volume copy pairs that you created with a snapshot (legacy) volume or with a snapshot image volume.

ATTENTION Starting a volume copy operation overwrites all existing data on the target volume, makes the target volume read-only to hosts, and fails all snapshot (legacy) volumes or snapshot image volumes associated with the target volume, if any exist. If you have used the target volume as a copy before, be sure you no longer need the data or have it backed up.

Syntax

```
recopy volumeCopy target [targetName]  
[source [sourceName]]  
[copyPriority=(highest | high | medium | low | lowest)]  
[targetReadOnlyEnabled=(TRUE | FALSE)]
```

Recover SAS Port Mis-Wire

This command tells a controller that corrective action has been taken to recover from a mis-wire condition. The controller can then re-enable any SAS ports that were disabled because a mis-wire was detected. Run this command after you have corrected any SAS mis-wire conditions.

SAS Mis-wire conditions can be one of these:

- Invalid SAS topologies
- Controller host port to expansion tray connection
- Initiator to drive topology connection
- ESM mis-wire

Syntax

```
recover sasPort miswire
```

Re-create External Security Key

This command regenerates a storage array security key for use with the external security key management feature.

Syntax

```
recreate storageArray securityKey  
passPhrase="passPhraseString"  
file="fileName"
```

Re-create Snapshot (Legacy)

This command starts a fresh copy-on-write operation by using an existing snapshot (legacy) volume. You can re-create a single snapshot (legacy) volume or re-create multiple snapshot (legacy) volumes. If you choose to re-create multiple snapshot (legacy) volumes, you can re-create from two to the maximum number of snapshot (legacy) volumes that your storage array can support.

Syntax

```
recreate snapshot (volume [volumeName] |  
volumes [volumeName1 ... volumeNameN])  
[userLabel="snapshotVolumeName"  
warningThresholdPercent=percentValue  
repositoryFullPolicy (failBaseWrites | failSnapshot)]
```

Re-create Synchronous Mirroring Repository Volume

NOTE With firmware version 7.80, the **recreate storageArray mirrorRepository** command is deprecated. This command is no longer supported in either the GUI or the CLI. If you attempts to run this command, an error message will be returned indicating that this functionality is no longer supported and that no changes will be made to the specified remote mirror repositories.

This command creates a new Synchronous Mirroring repository volume (also called a mirror repository volume) by using the parameters defined for a previous mirror repository volume. The underlying requirement is that you have previously created a mirror repository volume. When you use this command, you can define the mirror repository volume in one of three ways: user-defined drives, user-defined volume group, or user-defined number of drives for the mirror repository volume. If you choose to define a number of drives, the controller firmware chooses which drives to use for the mirror repository volume.

Syntax (User-Defined Drives)

```
recreate storageArray mirrorRepository  
repositoryRAIDLevel=(1 | 3 | 5 | 6)  
repositoryDrives=(trayID1,drawerID1,slotID1 ... trayIDN,drawerIDN,slotIDN)  
[trayLossProtect=(TRUE | FALSE)]  
[dataAssurance=(none | enabled)]
```

Syntax (User-Defined Volume Group)

```
recreate storageArray mirrorRepository  
repositoryVolumeGroup=volumeGroupName [freeCapacityArea=freeCapacityIndexNumber]
```

Syntax (User-Defined Number of Drives)

```
recreate storageArray mirrorRepository  
repositoryRAIDLevel=(1 | 3 | 5 | 6)  
repositoryDriveCount=numberOfDrives  
[driveType=(fibre | SATA | SAS)]  
[trayLossProtect=(TRUE | FALSE)]  
[dataAssurance=(none | enabled)]
```

Reduce Disk Pool Capacity

This command reduces the capacity of the disk pool by logically removing the drives from the pool. This command uses the Dynamic Capacity Reduction (DCR) feature, which enables you to remove selected drives from a disk pool and re-use the removed drives as needed.

The maximum number of drives that you can remove from a disk pool in a single DCR operation is 12. You cannot reduce the disk pool to below the minimum disk pool size.

Syntax

```
set diskPool [diskPoolName]  
removeDrives=[trayID1,drawerID1,slotID1  
... trayIDn,drawerIDn,slotIDn]
```

Remove Drives from SSD Cache

This command decreases the capacity of the SSD cache by removing Solid State Disks (SSDs).

Syntax

```
set ssdCache [ssdCacheName]  
removeDrives=(trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn)
```

Remove Incomplete Asynchronous Mirrored Pair from Asynchronous Mirror Group

This command removes an orphaned mirrored pair volume on the storage array. An orphaned mirrored pair volume exists when a member volume in an asynchronous mirror group has been removed on one side of the asynchronous mirror group (either the primary side or secondary side) but not on the other side.

Orphan mirrored pair volumes are detected when inter-controller communication is restored and the two sides of the mirror configuration reconcile mirror parameters.

Use this command when the mirror relationship is successfully removed on the local or remote storage array, but cannot be removed on the corresponding storage array because of a communication problem.

Syntax

```
remove asyncMirrorGroup ["asyncMirrorGroupName"]  
incompleteMirror volume="volumeName"
```

Remove Member Volume from Consistency Group

This command removes a member volume from a an existing snapshot consistency group. Optionally, you can delete the repository volume members from the consistency group.

Syntax

```
set consistencyGroup ["consistencyGroupName"]
removeCGMemberVolume="memberVolumeName"
[deleteRepositoryMembers=(TRUE | FALSE)]
```

Remove Synchronous Mirroring

This command removes the mirror relationship between the primary volume and the secondary volume in a remote-mirrored pair.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax

```
remove syncMirror (localVolume [volumeName] |
localVolumes [volumeName1 ... volumeNameN])
```

Remove Volume Copy

NOTE With firmware version 7.83 the `copyType=(online | offline)` parameter is no longer used.

This command removes a volume copy pair. This command is valid for both snapshot (legacy) volume copy pairs and new snapshot volume copy pairs.

Syntax

```
remove volumeCopy target [targetName]
[source [sourceName]]
```

Remove Volume from Asynchronous Mirror Group

This command removes a member volume from an existing asynchronous mirror group. Optionally, you can delete the repository volume members from the asynchronous mirror group.

This command is valid only on the local storage array that contains the asynchronous mirror group whose member volume that you want to remove.

Syntax

```
remove volume ["volumeName"] asyncMirrorGroup="asyncMirrorGroupName"
[deleteRepositoryMembers=(TRUE | FALSE)]
```

Remove Volume LUN Mapping

This command removes the logical unit number (LUN) mapping from one or more volumes.

Syntax for Removing LUN Mapping from One Volume

```
remove (volume ["volumeName"] | accessVolume) lunMapping  
(host="hostName" | hostGroup=("hostGroupName" | defaultGroup))
```

Syntax for Removing LUN Mapping from More Than One Volume LUN Mapping

```
remove (allVolumes | volumes [volumeName1 ... volumeNameN])  
lunMapping
```

Rename Snapshot Volume

This command renames an existing snapshot volume.

Syntax

```
set snapVolume ["snapVolumeName"]  
userLabel="snapImageVolumeName"
```

Rename SSD Cache

This command changes the name of the SSD cache.

Syntax

```
set ssdCache [old_ssdCacheName] userLabel="new_ssdCacheName"
```

Repair Volume Parity

This command repairs the parity errors on a volume.

Syntax

```
repair volume [volumeName] parity  
parityErrorFile="filename"  
[verbose=(TRUE | FALSE)]
```

Replace Drive

This command replaces a drive in a volume group. Replacing a drive in a volume group redefines the composition of a volume group. You can use this command to replace a drive with either an unassigned drive or a fully integrated hot spare.

Syntax

```
replace drive([trayID,drawerID,slotID] | <"wwID">)  
replacementDrive=trayID,drawerID,slotID
```

Reset Asynchronous Mirror Group Statistics

This command resets the synchronization statistics for one or more member volumes in an asynchronous mirror group to a relative 0.

Syntax

```
reset storageArray arvmStats asyncMirrorGroup [asyncMirrorGroupName]  
volume="volumeName" sampleType=(all | mostRecent | longestSyncTime | errors)
```

Reset Controller

This command resets a controller, and it is disruptive to I/O operations.

ATTENTION When you reset a controller, the controller is removed from the data path and is not available for I/O operations until the reset operation is complete. If a host is using volumes that are owned by the controller being reset, the I/O directed to the controller is rejected. Before resetting the controller, either make sure that the volumes that are owned by the controller are not in use or make sure that a multi-path driver is installed on all of the hosts that use these volumes.

Syntax

```
reset controller [(a | b)]
```

Notes

The controller that receives the reset controller command resets the controller specified. For example, if the reset controller command is sent to controller A to request a reset of controller A, then controller A reboots itself by doing a soft reboot. If the reset controller command is sent to controller A to request a reset of controller B, then controller A holds controller B in reset and then releases controller B from reset, which is a hard reboot. A soft reboot in some products only resets the IOC chip. A hard reboot resets both the IOC and the expander chips in the controller.

Reset iSCSI IP Address

This command resets the IP address of the remote storage array to re-establish connection with the local storage array. You can use this command to notify the local storage array that the iSCSI IP address of the remote storage array have changed and need to be updated.

When establishing an asynchronous mirroring relationship with an iSCSI connection, both the local and the remote storage arrays store a record of the IP address of the remote storage array in the asynchronous mirroring configuration. If the IP address of an iSCSI port changes, the remote storage array that is attempting to use that port encounters a communication error.

The storage array with the changed IP address sends a message to each remote storage array associated with the asynchronous mirror groups that are configured to mirror over an iSCSI connection. Storage arrays that receive this message automatically update their remote-target IP address.

If the storage array with the changed IP address is unable to send its inter-controller message to a remote storage array, the system sends you an alert of the connectivity issue. Use the **reset** command to re-establish connection with the local storage array.

Syntax

```
reset (remoteStorageArrayName="storageArrayName" | remoteStorageArrayWwid=<wwID>)
iscsiIpAddress
```

Reset Storage Array Battery Install Date

This command resets the age of the batteries in a storage array to zero days. You can reset the age of the batteries for an entire storage array or the age of a battery in a specific controller or in a specific battery pack.

This command resets the age of the batteries in a storage array to zero days.

Syntax

```
reset storageArraybatteryInstallDate
(controller=[(a | b)] | batteryPack [left | right])

reset storageArraybatteryInstallDate
(controller=[(a | b)])
```

Reset Storage Array Diagnostic Data

This command resets the NVSRAM that contains the diagnostic data for the storage array. This command does not delete the diagnostic data. This command replaces the Needs Attention status with the Diagnostic Data Available status. The old diagnostic data is written over automatically when new data is captured. The memory that contains the diagnostic data is also cleared when the controllers reboot. Before you reset the diagnostic data, use the **save storageArray diagnosticData** command to save the diagnostic data to a file.

ATTENTION Run this command only with the assistance of your Technical Support Representative.

Syntax

```
reset storageArray diagnosticData
```

Reset Storage Array Infiniband Statistics Baseline

This command resets the Infiniband statistics baseline to 0 for the storage array.

Syntax

```
reset storageArray ibStatsBaseline
```

Reset Storage Array iSCSI Baseline

This command resets the iSCSI baseline to 0 for the storage array.

Syntax

```
reset storageArray iscsiStatsBaseline
```

Reset Storage Array RLS Baseline

This command resets the read link status (RLS) baseline for all devices by setting all of the RLS counts to 0.

Syntax

```
reset storageArray RLSBaseline
```

Reset Storage Array SAS PHY Baseline

This command resets the SAS physical layer (SAS PHY) baseline for all devices, and removes the list of errors from the `.csv` file. The `.csv` file is generated when you run the `save storageArray SASPHYCounts` command.

NOTE The previous release of the `reset storageArray SASPHYBaseline` command cleared error counts for all devices except the drives. The `reset storageArray SASPHYBaseline` command now resets the SAS PHY baseline for the drives as well as the other devices. All errors are deleted from the `.csv` file.

Syntax

```
reset storageArray SASPHYBaseline
```

Reset Storage Array SOC Baseline

This command resets the baseline for all switch-on-a-chip (SOC) devices that are accessed through the controllers. This command resets the baseline by setting all of the SOC counts to 0. This command is valid only for Fibre Channel devices in an arbitrated loop topology.

Syntax

```
reset storageArray SOCBaseline
```

Reset Storage Array Volume Distribution

This command reassigns (moves) all of the volumes to their preferred controller.

Syntax

```
reset storageArray volumeDistribution
```

Resume Asynchronous Mirror Group

This command resumes data transfer between all mirrored pairs in an asynchronous mirror group. Data written to the primary volumes while the asynchronous mirror group was suspended is written to the secondary volumes immediately. Periodic synchronization resumes if an automatic synchronization interval has been set.

Syntax

```
resume asyncMirrorGroup ["asyncMirrorGroupName"]  
[deleteRecoveryPointIfNecessary]
```

Resume Consistency Group Snapshot Volume

This command restarts a copy-on-write operation for creating a consistency group snapshot volume that you stopped using the `stop cgSnapVolume` command.

Syntax

```
resume cgSnapVolume ["snapVolumeName"]  
cgSnapImage="snapImageName"
```

Resume Snapshot (Legacy) Rollback

NOTE With firmware version 7.83 the order of the terms in the syntax is changed to be consistent with other commands. Replace the deprecated command syntax with the new command syntax.

This command resumes a rollback operation that has entered a paused state. A rollback operation can enter a paused state due to processing errors, which will trigger a Needs Attention condition for the storage array.

If the rollback operation cannot be resumed, the selected snapshot (legacy) volume reverts to a paused state, and the Needs Attention condition is displayed.

Syntax (Deprecated)

```
resume rollback volume [snapshotVolumeName]
```

Syntax (New)

```
resume volume [snapshotVolumeName] rollback
```

Resume Snapshot Image Rollback

This command resumes a rollback operation that has entered a paused state. A rollback operation can enter a paused state due to processing errors, which causes a Needs Attention condition for the storage array.

If the rollback operation cannot be resumed, the selected snapshot image reverts to a paused state, and the Needs Attention condition is displayed.

NOTE You cannot use this command for snapshot images involved in online volume copy.

Syntax

```
resume snapImage [snapImageName] rollback
```

Resume Snapshot Volume

This command resumes a snapshot volume operation that was stopped.

Syntax

```
resume snapVolume ["snapVolumeName"] snapImage="snapCGID: imageID"
```

Resume SSD Cache

This command restarts the caching for all of the volumes using the SSD cache that was temporarily stopped with the **suspend *ssdCache*** command.

Syntax

```
resume ssdCache [ssdCacheName]
```

Resume Synchronous Mirroring

This command resumes a suspended Synchronous Mirroring operation.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax

```
resume syncMirror (primary [volumeName] |  
primaries [volumeName1 ... volumeNameN])  
[writeConsistency=(TRUE | FALSE)]
```

Revive Drive

This command forces the specified drive to the Optimal state.

ATTENTION Possible loss of data access – Correct use of this command depends on the data configuration on all of the drives in the volume group. Never try to revive a drive unless you are supervised by your Technical Support Representative.

Syntax

```
revive drive [trayID,drawerID,slotID]
```

Revive Snapshot Group

This command forces the specified snapshot group to the Optimal state. If the snapshot group is not in a Failed state, the firmware displays an error message and does not run this command.

Syntax

```
revive snapGroup [snapGroupName]
```

Revive Snapshot Volume

This command forces a specified snapshot volume to the Optimal state. The snapshot volume can be one of these:

- A standalone snapshot volume
- A snapshot volume that is a member of a consistency group

If the snapshot volume is not in a Failed state, the firmware displays an error message and does not run this command.

NOTE You cannot use this command for a snapshot volume that is used in online volume copy.

Syntax

```
revive snapVolume [snapVolumeName]
```

Revive Volume Group

This command forces the specified volume group and its associated failed drives to the Optimal state.

ATTENTION Possible loss of data access – Correct use of this command depends on the data configuration on all of the drives in the volume group. Never try to revive a drive unless you are supervised by your Technical Support Representative.

Syntax

```
revive volumeGroup [volumeGroupName]
```

Save Asynchronous Mirror Group Statistics

This command saves to a file the synchronization statistics for one or more member volumes in an asynchronous mirror group. The statistics collected are available only for asynchronous mirror group member volumes in a primary role on the local storage array.

A set of data is collected during the synchronization process that can be used to evaluate how well the mirror configuration is functioning. The data is collected as a set of *samples*. A sample is created at the beginning of a synchronization process and updated regularly while the synchronization process proceeds.

A sample collects data until the synchronization process completes or until a disruption to the synchronization process occurs such as a volume ownership transfer or a **read-write** error. When a synchronization process disruption is resolved (for example, the volume is transferred to the alternate controller), a new sample is created and updated as the synchronization process continues.

Syntax

```
save storageArray arvmStats asyncMirrorGroup [asyncMirrorGroupName]
arvmStats file="filename"
[volume="volumeName"]
[sampleType=(all | mostRecent | longestSyncTime | errors)]
[recordLimit=(1-90)]
```

Save Controller NVSRAM

This command saves a copy of the controller NVSRAM values to a file. This command saves all of the regions.

Syntax

```
save controller [(a | b)] NVSRAM file="filename"
```

Save Drive Channel Fault Isolation Diagnostic Status

This command saves the drive channel fault isolation diagnostic data that is returned from the **start driveChannel faultDiagnostics** command. You can save the diagnostic data to a file as standard text or as XML.

See "[Start Drive Channel Fault Isolation Diagnostics](#)" for more information.

Syntax

```
save driveChannel faultDiagnostics file="filename"
```

Save Drive Log

This command saves the log sense data to a file. Log sense data is maintained by the storage array for each drive.

Syntax

```
save allDrives logFile="filename"
```

Save Storage Array Configuration

This command creates a script file that you can use to re-create the current storage array volume configuration.

Syntax

```
save storageArray configuration file="filename"  
[allconfig]  
[globalSettings=(TRUE | FALSE)]  
[volumeConfigAndSettings=(TRUE | FALSE)]  
[hostTopology=(TRUE | FALSE)]  
[lunMappings=(TRUE | FALSE)]
```

Save Storage Array Core Dump

This command saves a core dump to a specified file on a host.

Syntax

```
save storageArray coreDump file="filename"
```

Save Storage Array DBM Database

Use this command to back up RAID configuration data or all data to a file on the host. You can specify multiple data locations and controller.

Syntax

```
save storageArray dbmDatabase  
file="fileName"  
[sourceLocation=(disk | onboard)]  
[controller [(a|b)]]
```

```
[contentType=(partial | all)]
```

Save Storage Array DBM Validator Information File

This command saves the database management (DBM) validation information for a storage array in an XML file. A Technical Support Representative can use this XML file to generate a validator string (a security code). The validator string must be included in the `load storageArray dbmDatabase` command when restoring a storage array back to a pre-existing configuration.

Syntax

```
save storageArray dbmValidatorInfo file="filename" dbmDatabase="filename"
```

Save Storage Array Diagnostic Data

This command saves the storage array diagnostic data from either the controllers or the environmental services modules (ESMs) to a file. You can review the file contents at a later time. You can also send the file to your Technical Support Representative for further review.

After you have saved the diagnostic data, you can reset the NVSRAM registers that contain the diagnostic data so that the old data can be overwritten. Use the `reset storageArray diagnosticData` command to reset the diagnostic data registers.

ATTENTION Run this command only with the assistance of your Technical Support Representative.

Syntax

```
save storageArray diagnosticData [(controller | tray)]  
file="filename"
```

Save Storage Array Events

This command saves events from the Major Event Log to a file. You can save these events:

- **Critical events** – An error occurred on the storage array that needs to be addressed immediately. Loss of data access might occur if you do not immediately correct the error.
- **Warning events** – An error occurred on the storage array that results in degraded performance or reduced ability to recover from another error. Access to data has not been lost, but you must correct the error to prevent possible loss of data access if another error would occur.
- **Informational events** – An event occurred on the storage array that does not impact normal operations. The event is reporting a change in configuration or other information that might be useful in evaluating how well the storage array is performing.
- **Debug events** – An event occurred on the storage array that provides information that you can use to help determine the steps or states that led to an error. You can send a file with this information to your Technical Support Representative to help determine the cause of an error.

NOTE Some storage arrays might not be able to support all four types of events.

Syntax

```
save storageArray (allEvents | criticalEvents |  
warningEvents | infoEvents | debugEvents)  
file="filename"  
[count=numberOfEvents]  
[forceSave=(TRUE | FALSE)]
```

Save Storage Array Firmware Inventory

This command saves a report to a file of all of the firmware currently running on the storage array. The report lists the firmware for these components:

- Controllers
- Drives
- Drawers (if applicable)
- Environmental services modules (ESMs)

You can use the information to help identify out-of-date firmware or firmware that does not match the other firmware in your storage array. You can also send the report to your Technical Support Representative for further review.

Syntax

```
save storageArray firmwareInventory file="filename"
```

Save Storage Array InfiniBand Statistics

This command saves the InfiniBand performance statistics of the storage array to a file.

Syntax

```
save storageArray ibStats [raw | baseline]  
file="filename"
```

Save Storage Array iSCSI Statistics

This command saves the iSCSI performance of the storage array to a file.

Syntax

```
save storageArray iscsiStatistics [raw | baseline] file="filename"
```

Save Storage Array Performance Statistics

This command saves the performance statistics to a file. Before you use this command, run the `set session performanceMonitorInterval` command and the `set session performanceMonitorIterations` command to specify how often statistics are collected.

Syntax

```
save storageArray performanceStats file="filename"
```

Save Storage Array RLS Counts

This command saves the read link status (RLS) counters to a file.

Syntax

```
save storageArray RLSCounts file="filename"
```

Save Storage Array SAS PHY Counts

This command saves the SAS physical layer (SAS PHY) counters to a file. To reset the SAS PHY counters, run the `reset storageArray SASPHYBaseline` command.

Syntax

```
save storageArray SASPHYCounts file="filename"
```

Save Storage Array SOC Counts

This command saves the SOC error statistics to a file. This command is valid only for Fibre Channel devices in an arbitrated loop topology.

Syntax

```
save storageArray SOCCounts file="filename"
```

Save Storage Array State Capture

This command saves the state capture of a storage array to a file.

Syntax

```
save storageArray stateCapture file="filename"
```

Save Storage Array Support Data

This command saves the support-related information of the storage array to a file. Support-related information includes these items:

- The storage array profile
- The Major Event Log information
- The read link status (RLS) data
- The NVSRAM data
- Current problems and associated recovery information
- The performance statistics for the entire storage array
- The persistent registration information and the persistent reservation information
- Detailed information about the current status of the storage array
- The diagnostic data for the drive
- A recovery profile for the storage array
- The unreadable sectors that are detected on the storage array
- The state capture data
- An inventory of the versions of the firmware running on the controllers, the drives, the drawers, and the environmental services modules (ESMs)

Syntax

```
save storageArray supportData file="filename"
```

Save Tray Log

This command saves the log sense data to a file. Log sense data is maintained by the environmental cards for each tray. Not all of the environmental cards contain log sense data.

Syntax

```
save allTrays logFile="filename"
```

Schedule Automatic Support Bundle Collection Configuration

NOTE This command is an SMcli command, not a script command. You must run this command from a command line. You cannot run this command from the script editor in the storage management software

This command creates or removes a schedule for saving a support bundle on one or more storage arrays. You collect system and configuration information in support bundles to transmit the information to Technical Support for analysis and diagnostics. You can create two types of schedules:

- Daily/Weekly - Use this schedule when you need to frequently collect data to monitor new configurations or troubleshoot an existing configuration.

- Monthly/Yearly - Use this schedule when you are collecting data for evaluating the long term operation of your storage array.

Syntax for Creating a Daily/Weekly Schedule

```
SMcli -supportBundle schedule enable
(all | storageArrayName)
startTime=HH:MM
startDate=MM:DD:YYYY
endDate=MM:DD:YYYY
daysOfWeek=[Sunday Monday Tuesday Wednesday Thursday Friday Saturday]
data=pathName
```

Syntax for Creating a Monthly/Yearly Schedule

```
SMcli -supportBundle schedule enable
(all | storageArrayName)
startTime=HH:MM
startDate=MM:DD:YYYY
endDate=MM:DD:YYYY
months=[January February March April May June July August September October
November December]
weekNumber=(First | Second | Third | Fourth | Last)
dayOfWeek=( Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday ) |
onDays=[1-31] |
data=pathName
```

Syntax for Removing a Schedule

NOTE This command completely removes the schedule for the storage array. To start saving support bundle information again, you will need to create a new schedule.

```
SMcli -supportBundle schedule disable
(all | storageArrayName)
```

Set Asynchronous Mirror Group

Use this command to change the synchronization settings and warning thresholds that the controller owner of the primary side of the asynchronous mirror group uses when it performs an initial synchronization or resynchronization. Changing the synchronization settings affects the synchronization operations of all mirrored pairs within the asynchronous mirror group.

Syntax

```
set asyncMirrorGroup [asyncMirrorGroupName]
[volume="repos_xxxx" increaseRepositoryCapacity (repositoryVolume="repos_xxxx")]
[syncInterval=integer (minutes | hours | days)]
[warningSyncThreshold=integer (minutes | hours | days)]
[warningRecoveryThreshold=integer (minutes | hours | days)]
[userLabel="New_asyncMirrorGroupName"]
[warningThresholdPercent=percentValue]
[role=(primary | secondary)]
[autoResync=(TRUE | FALSE)]
```

Set Consistency Group Attributes

This command defines the properties for a snapshot consistency group.

Syntax

```
set consistencyGroup ["consistencyGroupName"]
[userLabel="consistencyGroupName"]
[repositoryFullPolicy=(failBaseWrites | purgeSnapImages)]
[repositoryFullLimit=percentValue]
[autoDeleteLimit=numberOfSnapImages]
[rollbackPriority=(lowest | low | medium | high | highest)]
```

Set Consistency Group Snapshot Volume

This command creates a unique name for a snapshot volume of a consistency group.

Syntax

```
set cgSnapVolume [cgSnapVolumeName]
userLabel="cgSnapVolumeName"
```

Set Controller

This command defines the attributes for the controllers.

Syntax

```
set controller [(a | b)]
[availability=(online | offline | serviceMode)]
[ethernetPort [(1 | 2)] ethernetPortOptions]
[globalNVSramByte [nvsramOffset]=(nvsramByteSetting | nvsramBitSetting)]
[hostNVSramByte [hostType, nvsramOffset]=(nvsramByteSetting | nvsramBitSetting)]
[IPv4GatewayIP=ipAddress]
[IPv6RouterAddress=ipv6Address]
[iscsiHostPort [(3 | 4 | 5 | 6)] iscsiHostPortOptions] [rloginEnabled=(TRUE | FALSE)]
[serviceAllowedIndicator=(on | off)]
```

Set Controller Service Action Allowed Indicator

This command turns on or turns off the Service Action Allowed indicator light on a controller in a controller tray or a controller-drive tray. If the storage array does not support the Service Action Allowed indicator light feature, this command returns an error. If the storage array supports the command but is unable to turn on or turn off the indicator light, this command returns an error. (To turn on or turn off the Service Action Allowed indicator light on the power-fan canister or the interconnect-battery canister, use the **set tray serviceAllowedIndicator** command.)

Syntax

```
set controller [(a | b)]
serviceAllowedIndicator=(on | off)
```

Set Disk Pool

This command sets the attributes associated with a disk pool based on the specified parameters.

Syntax

```
set (diskPool [diskPoolName] |
diskPools [diskPoolName1 ... diskPoolNameN] | allDiskPools)
[reservedDriveCount=reservedDriveCountValue]
[warningThreshold=(warningThresholdValue | default)]
[criticalThreshold=(criticalThresholdValue | default)]
[criticalPriority=(highest | high | medium | low | lowest)]
[degradedPriority=(highest | high | medium | low | lowest)]
[backgroundPriority=(highest | high | medium | low | lowest)]
[userLabel=diskPoolName]
```

Set Disk Pool (Modify Disk Pool)

This command adds capacity to a disk pool or changes the controller ownership for the entire disk pool. These two operations are mutually exclusive.

Syntax

```
set diskPool [diskPoolName]
(addDrives=[trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn] |
addCapacity=(diskPoolCapacity))
[owner=(a | b)]
```

Set Drive Channel Status

This command defines how the drive channel performs.

Syntax

```
set driveChannel [(1 | 2 | 3 | 4 | 5 | 6 | 7 | 8)]
status=(optimal | degraded)
```

Set Drive Hot Spare

This command assigns or unassigns one or more drives as a hot spare.

Syntax

```
set (drive [trayID,drawerID,slotID] |
drives [trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn])
hotSpare=(TRUE | FALSE)
```

Set Drive Service Action Allowed Indicator

This command turns on or turns off the Service Action Allowed indicator light on a drive in drive trays that support the Service Action Allowed indicator light feature. If the storage array does not support the Service Action Allowed indicator light feature, this command returns an error. If the storage array supports the command but is unable to turn on or turn off the indicator light, this command returns an error.

Syntax

```
set (drive [trayID,drawerID,slotID] |
drives [trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn])
serviceAllowedIndicator=(on | off)
```

Set Drive State

This command sets a drive to the Failed state. (To return a drive to the Optimal state, use the **revive drive** command.)

Syntax

```
set drive [trayID,drawerID,slotID]
operationalState=failed
```

Set Event Alert Filtering

The set event alert commands manage alert event notification by either disabling a specific critical event alert from being sent, or by enabling notification about a specific critical event alert to be sent. To prevent notification about a specific critical event alert from being sent, you *block* it. To enable notification about a specific critical event alert to be sent, you *unblock* it.

The storage management software supports different priorities of events (such as Informational, Warning, Critical). When you define your storage array, you can configure alerts and define how the event alerts are managed. If you have configured the storage array to send alerts, then a notification is sent to a designated recipient when a Critical event occurs. That notification can be one or all of the following types:

- email
- syslog
- trap notifications

The set event alert CLI commands work on a single storage array. When you run the commands on a storage array, only that storage array is affected by the commands. Other storage arrays that have not had the CLI command run against them have the default behavior.

Blocking an event alert does not prevent the event from being posted to the system event log. All events will continue to be posted to the event log.

Syntax to Block an Event Alert

```
set blockEventAlert eventType
```

Syntax to Unblock an Event Alert

```
set unBlockEventAlert eventType
```

Set Foreign Drive to Native

A drive is considered to be native when it is a part of a volume group in a storage array. A drive is considered to be foreign when it does not belong to a volume group in a storage array or when it fails to be imported with the drives of a volume group that are transferred to a new storage array. The latter failure creates an incomplete volume group on the new storage array.

Run this command to add the missing (foreign) drives back into their original volume group and to make them part of the volume group in the new storage array.

Use this operation for emergency recovery only: when one or more drives need to be changed from a foreign drive status and returned to a native status within their original volume group.

ATTENTION Possible data corruption or data loss – Using this command for reasons other than what is stated previously might result in data loss without notification.

Syntax

```
set (drive [trayID,drawerID,slotID] |  
    drives [trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn] |  
    allDrives) nativeState
```

Set Host

This command assigns a host to a host group or moves a host to a different host group. You can also create a new host group and assign the host to the new host group with this command. The actions performed by this command depend on whether the host has individual mappings or does not have individual mappings.

Syntax

```
set host [hostName]  
hostGroup=("hostGroupName" | none | defaultGroup)  
userLabel="newHostName"  
hostType=(hostTypeIndexLabel | hostTypeIndexNumber)
```

Set Host Channel

This command defines the loop ID for the host channel.

Syntax

```
set hostChannel [hostChannelNumber]  
preferredID=portID
```

Set Host Group

This command renames a host group.

Syntax

```
set hostGroup [hostGroupName]  
userLabel="newHostGroupName"
```

Set Host Port

This command changes the host type for a host port. You can also change a host port label with this command.

Syntax

```
set hostPort [portLabel] host="hostName" userLabel="newPortLabel"
```

Set iSCSI Initiator

This command sets the attributes for an iSCSI initiator.

Syntax

```
set iscsiInitiator (["iscsiID"] | <"wwID">]  
(userLabel="newName" |  
host="newHostName" |  
chapSecret="newSecurityKey")
```

Set iSCSI Target Properties

This command defines properties for an iSCSI target.

Syntax

```
set iscsiTarget ["userLabel"]  
authenticationMethod=(none | chap) |
```

```
chapSecret=securityKey |  
targetAlias="userLabel"
```

Set Read-Only Snapshot Volume to Read/Write Volume

This command changes a snapshot volume that is a read-only volume to a snapshot volume that is read/write volume. You also can use this command to identify a new repository volume for the read/write volume, or to set a full limit warning level for the repository volume.

Syntax

```
set snapVolume [snapshotVolumeName] convertToReadWrite  
[(repositoryVolume="repos_xxxx" |  
repositoryVolume=(volumeGroupName [capacity=capacityValue])  
repositoryVolume=(diskPoolName [capacity=capacityValue]))]  
[repositoryFullLimit=percentValue]
```

Set Session

This command defines how you want the current script engine session to run. For the purpose of this command a session is the duration for the running of the commands. This command does not permanently set the parameters for the storage array.

Syntax

```
set session errorAction=(stop | continue)  
password="storageArrayPassword"  
userRole=(admin | monitor)  
performanceMonitorInterval=intervalValue  
performanceMonitorIterations=iterationValue
```

Set Snapshot (Legacy) Volume

This command defines the properties for a snapshot (legacy) volume and lets you rename a snapshot (legacy) volume.

Syntax

```
set (volume [volumeName] | volumes [volumeName1 ... volumeNameN])  
userLabel="snapshotVolumeName"  
warningThresholdPercent=percentValue  
repositoryFullPolicy=(failBaseWrites | failSnapshot)  
enableSchedule=(TRUE | FALSE)  
schedule (immediate | snapshotSchedule)  
rollbackPriority=(0 | 1 | 2 | 3 | 4)
```

Set Snapshot Group Attributes

This command defines the properties for a snapshot group.

Syntax

```
set snapGroup ["snapGroupName"]  
[userLabel="snapGroupName"] |  
[repositoryFullPolicy=(failBaseWrites | purgeSnapImages) |  
[repositoryFullLimit=percentValue |  
[autoDeleteLimit=numberOfSnapImages] |  
[rollbackPriority=(lowest | low | medium | high | highest)]
```

Set Snapshot Group Media Scan

This command runs a media scan on a snapshot group.

Syntax

```
set snapGroup ["snapGroupName"]  
mediaScanEnabled=(TRUE | FALSE)  
redundancyCheckEnabled=(TRUE | FALSE)
```

Set Snapshot Group Repository Volume Capacity

This command increases or decreases the capacity of a snapshot group repository volume.

Syntax for Increasing Capacity

```
set snapGroup ["snapGroupName"] increaseRepositoryCapacity  
(repositoryVolumes="repos_XXXX" | repositoryVolumes=((volumeGroupName  
[capacity=capacityValue])) | repositoryVolumes=((diskPoolName  
[capacity=capacityValue])))
```

Syntax for Decreasing Capacity

```
set snapGroup ["snapGroupName"]  
decreaseRepositoryCapacity  
count=numberOfVolumes
```

Set Snapshot Group Schedule

This command defines the the schedule for taking snapshot images for a snapshot group.

Syntax

```
set snapGroup ["snapGroupName"]  
enableSchedule=(TRUE | FALSE)
```

```
schedule (immediate | snapshotSchedule)
```

Set Snapshot Volume Media Scan

This command runs a media scan on the drives used for a snapshot volume. Optionally, you also can perform a redundancy check on the data.

Syntax

```
set snapVolume [snapshotVolumeName]  
mediaScanEnabled=(TRUE | FALSE)  
[redundancyCheckEnabled=(TRUE | FALSE)]
```

Set Snapshot Volume Repository Volume Capacity

This command increases or decreases the capacity of a snapshot volume repository volume.

Syntax for Increasing Capacity

```
set snapVolume["snapshotVolumeName"] increaseRepositoryCapacity  
repositoryVolumes=("repos_XXXX" | repositoryVolumes=(volumeGroupName  
[capacity=capacityValue]) repositoryVolumes=(diskPoolName  
[capacity=capacityValue]))
```

Syntax for Decreasing Capacity

```
set snapVolume [snapshotVolumeName] decreaseRepositoryCapacity  
count=numberOfVolumes
```

Set SSD Cache for a Volume

This command turns on or off caching using the SSD cache feature for a specific volume. The volume can be one of these:

- Standard volume, identified by either a name or a WWID
- Snapshot volume
- Consistency group snapshot volume

Syntax Applicable to a Standard Volume

```
set volume ([volumeName] | <"WWID">) ssdCacheEnabled=(TRUE | FALSE)
```

Syntax Applicable to a Snapshot Volume

```
set snapVolume [snapshotVolumeName] ssdCacheEnabled=(TRUE | FALSE)
```

Syntax Applicable to a Consistency Group Snapshot Volume

```
set cgSnapVolume ["cgSnapVolumeName"] ssdCacheEnabled=(TRUE | FALSE)
```

Set Storage Array

This command defines the properties of the storage array.

Syntax

```
set storageArray (autoSupportConfig (enable | disable) |
cacheBlockSize=cacheBlockSizeValue |
cacheFlushStart=cacheFlushStartSize |
cacheFlushStop=cacheFlushStopSize |
defaultHostType=("hostTypeName" | "hostTypeIdentifier")
failoverAlertDelay=delayValue |
mediaScanRate=(disabled | 1-30) |
userRole=(admin | monitor)
password="password" |
userLabel="storageArrayName"
isnsRegistration=(TRUE | FALSE))
```

Set Storage Array AutoSupport Bundle Disable

This command turns off the AutoSupport (ASUP) bundle collection and transmission for the storage array. You can run this version of the command from the script editor or in a script file.

Syntax

```
set storageArray autoSupportFeature disable
```

Set Storage Array AutoSupport Bundle Enable

This command turns on the AutoSupport (ASUP) bundle collection and transmission for the storage array.

Syntax

```
set storageArray autoSupportFeature enable
```

Set Storage Array ICMP Response

This command returns the default values for negotiable settings for sessions and connections, which represent the starting point for the storage array for negotiations.

Syntax

```
set storageArray icmpPingResponse=(TRUE | FALSE)
```

Set Storage Array iSNS Server IPv4 Address

This command sets the configuration method and address for an IPv4 Internet Storage Name Service (iSNS).

Syntax

```
set storageArray isnsIPv4ConfigurationMethod=[static | dhcp]  
isnsIPv4Address=ipAddress
```

Set Storage Array iSNS Server IPv6 Address

This command sets the IPv6 address for the iSNS server.

Syntax

```
set storageArray isnsIPv6Address=ipAddress
```

Set Storage Array iSNS Server Listening Port

This command sets the iSNS server listening port.

Syntax

```
set storageArray isnsListeningPort=listeningPortIPAddress
```

Set Storage Array iSNS Server Refresh

This command refreshes the network address information for the iSNS server. This command is valid for only IPv4.

Syntax

```
set storageArray isnsServerRefresh
```

Set Storage Array Learn Cycle

This command sets the learn cycle for the battery backup unit. The learn cycle enables the storage management software to predict the remaining battery life. Learn cycles run at set intervals and store the results for software analysis.

Syntax

```
set storageArray learnCycleDate  
(daysToNextLearnCycle=numberOfDays |  
day=dayOfTheWeek) time=HH:MM
```

Set Storage Array Redundancy Mode

This command sets the redundancy mode of the storage array to either simplex or duplex.

Syntax

```
set storageArray redundancyMode=(simplex | duplex)
```

Set Storage Array Security Key

Use this command to set the security key that is used throughout the storage array to implement the Drive Security premium feature. When any security-capable drive in the storage array is assigned to a secured volume group or disk pool, that drive will be security-enabled using the security key. Before you can set the security key, you must use the **create storageArray securityKey** command to create the security key.

Syntax

```
set storageArray securityKey
```

Set Storage Array Time

This command sets the clocks on both controllers in a storage array by synchronizing the controller clocks with the clock of the host from which you run this command.

Syntax

```
set storageArray time
```

Set Storage Array Tray Positions

This command defines the position of the trays in a storage array. You must include all of the trays in the storage array when you enter this command.

Syntax

```
set storageArray trayPositions=(controller | trayID ... trayIDn)
```

Set Storage Array Unnamed Discovery Session

This command enables the storage array to participate in unnamed discovery sessions.

Syntax

```
set storageArray unnamedDiscoverySession=(TRUE | FALSE)
```

Set Synchronous Mirroring

This command defines the properties for a remote-mirrored pair.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax

```
set syncMirror (localVolume [volumeName] |
localVolumes [volumeName1 ... volumeNameN])
[role=(primary | secondary)]
[syncPriority=(highest | high | medium | low | lowest)]
[autoResync=(enabled | disabled)]
[writeOrder=(preserved | notPreserved)]
[writeMode=(synchronous | asynchronous)]
[force=(TRUE | FALSE)]
```

Set Thin Volume Attributes

This command defines the properties for a thin volume. You can use the parameters to define properties for one or more thin volumes.

Syntax

```
set (volume [volumeName] |
volumes [volumeName1 ... volumeNameN] | volume <"wwID">)
[newCapacity=capacityValue]
[repositoryMaxCapacity=capacityValue]
[repositoryExpansionPolicy=(automatic | manual)]
[warningThresholdPercent=warningThresholdPercentValue]
[addRepositoryCapacity=capacity-spec]
```

Set Tray Identification

This command sets the tray ID of a controller tray, a controller-drive tray, or a drive tray in a storage array. This command is valid only for controller trays, controller-drive trays, or drive trays that have tray IDs that you can set through the controller firmware. You cannot use this command for controller trays, controller-drive trays, or drive trays that have a tray ID that you set with a switch.

Syntax

```
set tray ["serialNumber"] id=trayID
```

Set Tray Service Action Allowed Indicator

This command turns on or turns off the Service Action Allowed indicator light on a power-fan canister, an interconnect-battery canister, or an environmental services module (ESM) canister. If the storage array does not support the Service Action Allowed indicator light feature, this command returns an error. If the storage array supports the command but is unable to turn on or turn off the indicator light, this command returns an error.

To turn on or turn off the Service Action Allowed indicator light on the controller canister, use the **set controller serviceAllowedIndicator** command.

Syntax

```
set tray [trayID]
(powerFan [(left | right | top | bottom)] |
interconnect |
esm [(left | right | top | bottom)]) |
battery [(left | right)] |
serviceAllowedIndicator=(on | off)
```

Set Volume Attributes for a Volume in a Disk Pool

This command defines the properties for a volume in a disk pool.

NOTE In configurations where disk pools consist of more than 32 volumes, the operation can result in host I/O errors or internal controller reboots due to the expiration of the timeout period before the operation completes. If you experience host I/O errors or internal controller reboots, bring the host to a quiescent state and try the operation again.

Syntax

```
set (allVolumes | volume [volumeName] |
volumes [volumeName1 ... volumeNameN] | volume <"wwID">)
addCapacity = capacityValue[KB|MB|GB|TB|Bytes] |
addDrives = (drive-spec-list)|
cacheFlushModifier=cacheFlushModifierValue |
cacheReadPrefetch = (TRUE | FALSE) |
cacheWithoutBatteryEnabled=(TRUE | FALSE) |
mediaScanEnabled=(TRUE | FALSE) |
mirrorCacheEnabled=(TRUE | FALSE) |
preReadRedundancyCheck = (TRUE | FALSE) |
readCacheEnabled=(TRUE | FALSE) |
redundancyCheckEnabled = (TRUE | FALSE) |
segmentSize = segmentSizeValue
userLabel = userlabelValue
writeCacheEnabled=(TRUE | FALSE) |
dataAssuranceDisabled=(TRUE | FALSE)
```

Set Volume Attributes for a Volume in a Volume Group

This command defines the properties for volumes in a volume group. You can use most parameters to define properties for one or more volumes. You also can use some parameters to define properties for only one volume. The syntax definitions are separated to show which parameters apply to several volumes and which apply to only one volume.

NOTE In configurations where volume groups consist of more than 32 volumes, the operation can result in host I/O errors or internal controller reboots due to the expiration of the timeout period before the operation completes. If you experience host I/O errors or internal controller reboots, quiesce the host I/O and try the operation again.

Syntax Applicable to One or More Volumes

```
set (allVolumes | volume [volumeName] |  
volumes [volumeName1 ... volumeNameN] | volume <"wwID">)  
cacheFlushModifier=cacheFlushModifierValue  
cacheWithoutBatteryEnabled=(TRUE | FALSE)  
mediaScanEnabled=(TRUE | FALSE)  
mirrorCacheEnabled=(TRUE | FALSE)  
modificationPriority=(highest | high | medium | low | lowest)  
owner=(a | b)  
preReadRedundancyCheck=(TRUE | FALSE)  
readCacheEnabled=(TRUE | FALSE)  
writeCacheEnabled=(TRUE | FALSE)  
cacheReadPrefetch=(TRUE | FALSE)  
dataAssuranceDisabled=(TRUE | FALSE)
```

Syntax Applicable to Only One Volume

```
set (volume [volumeName] | volume <wwID>)  
addCapacity=volumeCapacity  
[addDrives=(trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn)]  
redundancyCheckEnabled=(TRUE | FALSE)  
segmentSize=segmentSizeValue  
userLabel=volumeName  
preReadRedundancyCheck=(TRUE | FALSE)
```

Set Volume Copy

NOTE With firmware version 7.83 the `copyType=(online | offline)` parameter is no longer used.

This command defines the properties for a volume copy pair. This command is valid for both snapshot (legacy) volume copy pairs and new snapshot volume copy pairs.

Syntax

```
set volumeCopy target [targetName]  
source [sourceName]  
[copyPriority=(highest | high | medium | low | lowest)]  
[targetReadOnlyEnabled=(TRUE | FALSE)]  
[copyType=(online | offline)]
```

Set Volume Group

This command defines the properties for a volume group.

Syntax

```
set volumeGroup [volumeGroupName]
addDrives=(trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn)
raidLevel=(0 | 1 | 3 | 5 | 6)
owner=(a | b)
```

Set Volume Group Forced State

This command moves a volume group into a Forced state. Use this command if the `start volumeGroup import` command does not move the volume group to an Imported state or if the import operation does not work because of hardware errors. In a Forced state, the volume group can be imported, and you can then identify the hardware errors.

Syntax

```
set volumeGroup [volumeGroupName] forcedState
```

Set Volume Mapping

This command defines the logical unit number (LUN) mapping between a volume a host or host group. This command is applicable to volumes in either a volume group or disk pools.

NOTE You cannot use this command for a snapshot volume that is used in online volume copy.

Syntax

```
set (volume [volumeName] | volume <"wwID"> | accessVolume)
logicalUnitNumber=lun
(host="hostName" |
hostGroup=("hostGroupName" | defaultGroup)
```

Show Asynchronous Mirror Groups

This command displays configuration information for one or more asynchronous mirror groups. This command also displays the asynchronous mirrored pairs associated with each asynchronous mirror group, including incomplete asynchronous mirrored pairs.

You also can use this command to show the progress of periodic data synchronization on all of the mirrored pairs within the asynchronous mirror group.

Syntax

```
show (allAsyncMirrorGroups |
asyncMirrorGroups [asyncMirrorGroupName])
```

[summary]

Show Asynchronous Mirror Group Synchronization Progress

This command displays the progress of *periodic* synchronization of the asynchronous mirror group between the local and remote storage array. This command returns the progress of data synchronization on all of the mirrored pairs within the asynchronous mirror group. This command shows the progress as a percentage of data synchronization that has been completed.

NOTE There are two types of synchronization: initial synchronization and periodic synchronization. Initial asynchronous mirror group synchronization progress is displayed in the **Long Running Operations** dialog and by executing the `show storageArray longRunningOperations` command.

Syntax

```
show asyncMirrorGroup ["asyncMirrorGroupName"]  
[synchronizationProgress]  
[summary]
```

Show Blocked Events

This command returns a list of events that are currently blocked by the `set blockEventAlert` command. The events in this list are the events that will not send any notifications that you have configured using the alert terminals and parameters; that is, the email, syslog, and trap notifications.

The output has one line for each event that is blocked, listing the type of event in a hexadecimal format followed by a description of the event. Following is an example of the output:

```
Executing Script...  
0x280D Enclosure Failure  
0x282B Tray Redundancy Lost  
Script execution complete.
```

Syntax

```
show blockedEventAlertList
```

Show Cache Backup Device Diagnostic Status

This command returns the status of backup device diagnostic tests started by the `start cacheBackupDevice diagnostic` command. If the diagnostics have finished, all of the results of the diagnostic tests are shown. If the diagnostics have not finished, only the results of the diagnostic tests that finished are shown. The results of the test are shown on the terminal, or you can write the results to a file.

Syntax

```
show cacheBackupDevice controller [(a | b)] diagnosticStatus [file="fileName"]
```

Show Cache Memory Diagnostic Status

This command returns the status of cache memory diagnostics started by the `start controller diagnostic` command. If the diagnostics have finished, all of the results of the diagnostic tests are shown. If all of the diagnostics have not finished, only the results of the diagnostic tests that finished are shown.

Syntax

```
show cacheMemory controller [(a | b)] diagnosticStatus file="fileName"
```

Show Consistency Group

This command returns information about one or more consistency groups.

Syntax

```
show (allConsistencyGroups | consistencyGroup [consistencyGroupName] |  
consistencyGroups [consistencyGroupName1 ... consistencyGroupNameN])  
[(summary | schedule)]
```

Show Consistency Group Snapshot Image

This command shows one snapshot image or several snapshot images that are in one or more snapshot consistency groups.

Syntax

```
show ((CGSnapImage [(CGSnapImageName | CGSnapImageSequenceNumber)]) |  
(CGSnapImages [(CGSnapImageNumber1 ... CGSnapImageNumberN |  
CGSnapImageSequenceNumber1 ... CGSnapImageSequenceNumberN)])) |  
allCGSnapImages  
[summary]
```

Show Controller

For each controller in a storage array, this command returns the following information:

- The status (Online or Offline)
- The current firmware and NVSRAM configuration
- The pending firmware configuration and NVSRAM configuration (if any)
- The board ID
- The product ID
- The product revision
- The serial number
- The date of manufacture

- The cache size or the processor size
- The date and the time to which the controller is set
- The associated volumes (including the preferred owner)
- The Ethernet port
- The physical disk interface
- The host interface, which applies only to Fibre Channel host interfaces

Syntax

```
show (allControllers | controller [(a | b)]) [summary]
```

Show Controller Diagnostic Status

This command returns the status of controller diagnostics started by the **start controller diagnostic** command. If the diagnostics have finished, the entire results of the diagnostic tests are shown. If the diagnostic tests have not finished, only the results of the of the tests that are finished are shown. The results of the test are shown on the terminal, or you can write the results to a file.

Syntax

```
show controller [(a | b)] diagnosticStatus [file=filename]
```

Show Controller NVSRAM

This command returns a list of the NVSRAM byte values for the specified host type. If you do not enter the optional parameters, this command returns a list of all of the NVSRAM byte values. To view an example of a table of NVSRAM values that are returned by this command, refer to the "Examples of Information Returned by the Show Command" appendix in *Configuring and Maintaining a Storage Array Using the Command Line Interface* document.

Syntax

```
show (allControllers | controller [(a | b)])  
NVSRAM [hostType=hostTypeIndexLabel | host="hostName"]
```

Show Current iSCSI Sessions

This command returns information about an iSCSI session for either an iSCSI initiator or an iSCSI target.

Syntax

```
show iscsiInitiator [initiatorName] iscsiSessions
```

```
show iscsiTarget [targetName] iscsiSessions
```

Show Disk Pool

This command returns this information about a disk pool:

- The status (such as optimal, online, offline)
- The total capacity
- The preservation capacity, usable capacity and unusable capacity
- The current owner (the controller in slot A or the controller in slot B)
- The drive media (Fibre Channel, SATA, or SAS)
- The drive interface (Fibre Channel, SATA, or SAS)
- The associated volumes and free capacity
- The associated drives

Syntax

```
show diskPool [diskPoolName]
```

Show Drive

For each drive in the storage array, this command returns the following information:

- The total number of drives
- The type of drive (Fibre Channel, SATA, or SAS)
- Information about the basic drive:
 - The tray location and the slot location
 - The status
 - The capacity
 - The data transfer rate
 - The product ID
 - The firmware level
- Information about the drive channel:
 - The tray location and the slot location
 - The preferred channel
 - The redundant channel
- Hot spare coverage
- Details for each drive

Depending on the size of your storage array, this information can be several pages long. To view an example of the drive information that is returned by the **show drives** command, refer to the "Examples of Information Returned by the Show Commands" topic in "Configuring and Maintaining a Storage Array Using the Command Line Interface." In addition, the drive information is returned for the **show storageArray profile** command.

Syntax

```
show (allDrives
```

```
[driveMediaType=(HDD | SSD | unknown | allMedia)] |
[driveType=(fibre | SATA | SAS)] |
drive [trayID,drawerID,slotID] |
drives [trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn])
summary
```

Show Drive Channel Statistics

This command shows the cumulative data transfer for the drive channel and error information. If the controller has automatically degraded a drive channel, this command also shows interval statistics. When you use this command, you can show information about one specific drive channel, several drive channels, or all drive channels.

Syntax

```
show (driveChannel [(1 | 2 | 3 | 4 | 5 | 6 | 7 | 8)] |
driveChannels [1 2 3 4 5 6 7 8] |
allDriveChannels) stats
```

Show Drive Download Progress

This command returns the status of firmware downloads for the drives that are targeted by the **download drive firmware** command or the **download storageArray driveFirmware** command.

Syntax

```
show allDrives downloadProgress
```

Show Drive Performance Statistics

For each drive in the storage array, this command returns the following information:

- The storage array in which has the drive or drives
- The current I/O latency
- The maximum I/O latency
- The minimum I/O latency
- The average I/O latency

Syntax

```
show (allDrives
drive [trayID,drawerID,slotID] |
drives [trayID1,drawerID1,slotID1 ... trayIDn,drawerIDn,slotIDn])
performanceStats
```

Show Host Interface Card Diagnostic Status

This command returns the status of running, interrupted, or completed host interface card diagnostics started by the `start hostCard diagnostic` command. If the diagnostics have finished, the entire results of the diagnostic tests are shown. If the diagnostics have not finished, only the results of the tests that are finished are shown. The results of the test are shown on the terminal, or you can write the results to a file.

Syntax

```
show hostCard controller [(a | b)] diagnosticStatus [progressOnly] [file=filename]
```

Show Host Ports

For all of the host ports that are connected to a storage array, this command returns this information:

- The host port identifier
- The host port name
- The host type

Syntax

```
show allHostPorts
```

Show Snapshot Group

This command returns this information about one or more snapshot image groups.

Syntax

```
show (allSnapGroups | snapGroup [snapGroupName] |  
snapGroups ["snapGroupName1" ... "snapGroupName"])  
[summary | schedule]
```

Show Snapshot Image

This command returns information about the snapshot images that a user had previously created.

Syntax for Showing a Specific Snapshot Image

```
show (allSnapImages | snapImage ["snapImageName"] |  
snapImages ["snapImageName1" ... "snapImageName"]])  
[summary]
```

Show Snapshot Volumes

This command returns information about one or more snapshot volumes.

Syntax

```
show (allSnapVolumes | snapVolume ["snapVolumeName"] |
snapVolumes ["snapVolumeName1" ... "snapVolumeNameN"])
[summary]
```

Show SSD Cache

This command displays information about the SSD cache.

Syntax

```
show ssdCache [ssdCacheName]
```

Show SSD Cache Statistics

This command displays data about the SSD cache usage.

Syntax

```
show ssdCache [ssdCacheName] ssdCacheStatistics
[controller=(a|b|both)]
[file="filename"]
```

Show Storage Array

This command returns configuration information about the storage array. The parameters return lists of values for the components and features in the storage array. You can enter the command with a single parameter or more than one parameter. If you enter the command without any parameters, the entire storage array profile is shown (which is the same information as if you entered the `profile` parameter).

Syntax

```
show storageArray [autoSupportConfig | profile |
batteryAge | connections | defaultHostType | healthStatus |
hostTypeTable | hotSpareCoverage | features | time |
volumeDistribution | longRunningOperations | summary]
```

Show Storage Array Auto Configuration

This command shows the default auto-configuration that the storage array creates if you run the **autoConfigure storageArray** command. If you want to determine whether the storage array can support specific properties, enter the parameter for the properties when you run this command. You do not need to enter any parameters for this command to return configuration information.

Syntax

```
show storageArray autoConfiguration
[driveType=(fibre | SATA | SAS)
driveMediaType=(HDD | SSD | unknown | allMedia)
raidLevel=(0 | 1 | 3 | 5 | 6)
volumeGroupWidth=numberOfDrives
volumeGroupCount=numberOfVolumeGroups
volumesPerGroupCount=numberOfVolumesPerGroup
hotSpareCount=numberOfHotspares
segmentSize=segmentSizeValue
cacheReadPrefetch=(TRUE | FALSE)
securityType=(none | capable | enabled)]
```

Show Storage Array Core Dump

This command show details of the core dump on the controller cache, if a core dump is available.

Syntax

```
show storageArray coreDump
```

Show Storage Array DBM Database

This command retrieves and shows metadata for the on-board backup locations of a storage array. When there are multiple backup locations, metadata is shown for each location.

Syntax

```
show storageArray dbmDatabase
```

Show Storage Array Host Topology

This command returns the storage partition topology, the host type labels, and the host type index for the host storage array.

Syntax

```
show storageArray hostTopology
```

Show Storage Array LUN Mappings

This command returns information from the storage array profile about the logical unit number (LUN) mappings in the storage array. Default group LUN mappings are always shown. If you run this command without any parameters, this command returns all of the LUN mappings.

Syntax

```
show storageArray lunMappings [host ["hostName"] |
hostgroup ["hostGroupName"]]
```

Show Storage Array Negotiation Defaults

This statement returns information about connection-level settings that are subject to initiator-target negotiation.

Syntax

```
show storageArray iscsiNegotiationDefaults
```

Show Storage Array Power Information

This command returns information about the amount of power consumed by the entire storage array and each tray in the storage array.

Syntax

```
show storageArray powerInfo
```

Show Storage Array Unconfigured iSCSI Initiators

This command returns a list of initiators that have been detected by the storage array but are not yet configured into the storage array topology.

Syntax

```
show storageArray unconfiguredIscsiInitiators
```

Show Storage Array Unreadable Sectors

This command returns a table of the addresses of all of the sectors in the storage array that cannot be read. The table is organized with column headings for the following information:

- Volume user label
- Logical unit number (LUN)

- Accessible by (host or host group)
- Date/time
- Volume-relative logical block address (hexadecimal format – 0xn timer)
- Drive location (tray t, slot s)
- Drive-relative logical block address (hexadecimal format – 0xn timer)
- Failure type

The data is sorted first by the volume user label and second by the logical block address (LBA). Each entry in the table corresponds to a single sector.

Syntax

```
show storageArray unreadableSectors
```

Show String

This command shows a string of text from a script file. This command is similar to the `echo` command in MS-DOS and UNIX.

Syntax

```
show "textString"
```

Show Synchronous Mirroring Volume Candidates

This command returns information about the candidate volumes on a remote storage array that you can use as secondary volumes in a Synchronous Mirroring configuration.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax

```
show syncMirror candidates primary="volumeName"  
remoteStorageArrayName="storageArrayName"
```

Show Synchronous Mirroring Volume Synchronization Progress

This command returns the progress of data synchronization between the primary volume and the secondary volume in a Synchronous Mirroring configuration. This command shows the progress as a percentage of data synchronization that has been completed.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax

```
show syncMirror (localVolume [volumeName] |
localVolumes [volumeName1 ... volumeNameN])
synchronizationProgress
```

Show Thin Volume

This command returns the expansion history or the consumed capacity for the specified thin volume or volumes.

Syntax

```
show (allVolumes | volume [volumeName] |
volumes ["volumeName1" ... "volumeNameN"])
(consumedCapacity |
(expansionHistory [file=fileName]))
```

Show Volume

For the volumes in a storage array, this command returns the following information:

- The number of volumes
- The name
- The status
- The capacity
- The RAID level
- The volume group where the volume is located
- Details:
 - The volume ID
 - The subsystem ID
 - The drive type (Fibre Channel, SATA, or SAS)
 - Tray loss protection
 - The preferred owner
 - The current owner
 - The segment size
 - The modification priority
 - The read cache status (enabled or disabled)
 - The write cache status (enabled or disabled)
 - The write cache without batteries status (enabled or disabled)
 - The write cache with mirror status (enabled or disabled)
 - The flush write cache after time
 - The cache read prefetch setting (TRUE or FALSE)

- The enable background media scan status (enabled or disabled)
- The media scan with redundancy check status (enabled or disabled)
- The snapshot (legacy) repository volumes
- The mirror repository volumes
- The snapshot (legacy) volumes
- The snapshot (legacy) copies

To see an example of the information returned by this command, refer to the topic "Examples of Information Returned by the Show Commands" in *Configuring and Maintaining a Storage Array Using the Command Line Interface*.

Syntax

```
show (allVolumes | volume [volumeName] |
volumes [volumeName1 ... volumeNameN]) summary
```

Show Volume Action Progress

NOTE With firmware version 7.77, the `show volume actionProgress` command is deprecated. Replace this command with `show storageArray longRunningOperations`.

For a long-running operation that is currently running on a volume, this command returns information about the volume action and amount of the long-running operation that is completed. The amount of the long-running operation that is completed is shown as a percentage (for example, 25 means that 25 percent of the long-running operation is completed).

Syntax

```
show volume [volumeName] actionProgress
```

Show Volume Copy

This command returns this information about volume copy operations:

- The copy status
- The start time stamp
- The completion time stamp
- The copy priority
- The source volume World Wide Identifier (WWID) or the target volume WWID
- The target volume Read-Only attribute setting

You can retrieve information about a specific volume copy pair or all of the volume copy pairs in the storage array. This command is valid for both snapshot (legacy) volume copy pairs and new snapshot volume copy pairs.

Syntax

```
show volumeCopy (allVolumes | source ["sourceName"] |
```

```
target ["targetName"])
```

Show Volume Copy Source Candidates

This command returns information about the candidate volumes that you can use as the source for a volume copy operation. This command is valid for both snapshot (legacy) volume copy pairs and new snapshot volume copy pairs.

Syntax

```
show volumeCopy sourceCandidates
```

Show Volume Copy Target Candidates

This command returns information about the candidate volumes that you can use as the target for a volume copy operation. This command is valid for both snapshot (legacy) volume copy pairs and new snapshot volume copy pairs.

Syntax

```
show volumeCopy source ["sourceName"] targetCandidates
```

Show Volume Group

This command returns this information about a volume group:

- The status (Online or Offline)
- The drive type (Fibre Channel, SATA, or SAS)
- Tray loss protection (yes or no)
- The current owner (the controller in slot A or the controller in slot B)
- The associated volumes and free capacity
- The associated drives

Syntax

```
show volumeGroup [volumeGroupName]
```

Show Volume Group Export Dependencies

This command shows a list of dependencies for the drives in a volume group that you want to move from one storage array to a second storage array.

Syntax

```
show volumeGroup [volumeGroupName] exportDependencies
```

Show Volume Group Import Dependencies

This command shows a list of dependencies for the drives in a volume group that you want to move from one storage array to a second storage array.

Syntax

```
show volumeGroup [volumeGroupName] importDependencies  
[cancelImport=(TRUE | FALSE)]
```

Show Volume Performance Statistics

For each volume in the storage array, this command returns the following information:

- Storage Arrays
- Total IOs/s
- Read %
- Primary Read Cache Hit %
- Primary Write Cache Hit %
- SSD Cache Hit %
- Current MBs/s
- Maximum MBs/s
- Current IOs/s
- Maximum IOs/s
- Minimum IOs/s
- Average IOs/s
- Minimum MBs/s
- Average MBs/s
- Current IO Latency
- Maximum IO Latency
- Minimum IO Latency
- Average IO Latency

Syntax

```
show (allVolumes | volume [volumeName]  
volumes [volumeName1 ... volumeNameN]) performanceStats
```

Show Volume Reservations

This command returns information about the volumes that have persistent reservations.

Syntax

```
show (allVolumes | volume [volumeName] |  
volumes [volumeName1 ... volumeNameN]) reservations
```

Start Asynchronous Mirroring Synchronization

This command starts Asynchronous Mirroring synchronization.

Syntax

```
start asyncMirrorGroup ["asyncMirrorGroupName"] synchronize  
[deleteRecoveryPointIfNecessary]
```

Start Cache Backup Device Diagnostic

ATTENTION Before you run this diagnostic test, make sure that the cache backup device has a status of Optimal.

This command runs diagnostic tests to evaluate the functionality of the device that you use to backup the data in the cache if you lose power to the controller. The diagnostic tests are specific to the backup device that is in the controller. Before you run these tests, make these changes to the controller that has the backup device on which you want to run diagnostics:

- Place the controller into service mode (use the `set controller [(a | b)] availability=serviceMode` command).
- Attach the management client directly to the controller through the management Ethernet port.

NOTE In a dual-controller configuration, you must run these diagnostic tests through the controller that you want to evaluate. You cannot run these diagnostic tests through the partner controller.

Syntax

```
start cacheBackupDevice [(1 | n | all)]  
controller [(a | b)]  
diagnostic diagnosticType=(basic | extended)  
[extendedTestID=(writePatterns | random)]
```

Start Cache Memory Diagnostic

This command runs extended diagnostic tests to evaluate the functionality of the cache memory in a controller. Before you run these tests, you must make these changes to the controller on which you want to run diagnostics:

- Place the controller into Service mode (use the `set controller [(a | b)] availability=serviceMode` command).
- Attach the management client directly to the controller through the management Ethernet port.

NOTE In a dual controller configuration, you must run these diagnostic tests through the controller that you want to evaluate. You cannot run these diagnostic tests through the partner controller.

Syntax

```
start cacheMemory controller [(a | b)] diagnostic
diagnosticType=(basic | extended)
[extendedTestID=(marchC | patterns | psuedoRndm| DMACopy)]
```

Start Consistency Group Snapshot Rollback

This command starts a rollback operation to the member base volumes in a snapshot consistency group. The content of the base volumes changes immediately to match the point-in-time content of the consistency group snapshot volume. The base volumes immediately becomes available for read/write requests after the rollback operation has successfully completed.

The repository volume that is associated with the consistency group snapshot volume continues to track any new changes between the base volume and the consistency group snapshot volume that occur after the rollback operation is completed.

To stop a rollback operation to the member base volumes use the `stop cgSnapImage rollback` command.

Syntax

```
start cgSnapImage ["snapCGID:imageID"] rollback
[memberVolumeSet ["memberVolumeName1" ... "memberVolumeNameN"]]
```

Start Controller Diagnostic

This command runs diagnostic tests to evaluate the functionality of the controller card. Before you run these tests, you must make these changes to the controller on which you want to run diagnostics:

- Place the controller into Service Mode (use the `set controller [(a | b)] availability=serviceMode` command).
- Attach the management client directly to the controller through the management Ethernet port.

NOTE In a dual controller configuration, you must run these diagnostic tests through the controller that you want to evaluate. You cannot run these diagnostic tests through the partner controller.

Syntax

```
start controller [(a | b)] diagnostic diagnosticType=(basic | extended)
[extendedTestID=(SRAM | FIFO | dataCopy| RAID5Parity | RAID6Parity)]
```

Start Controller Trace

This command starts an operation that saves debug trace information to a compressed file. The debug trace information can be used by a Technical Support Representative to help analyze how well a storage array is running.

Syntax

```
start controller [(a | b | both)] trace
dataType=(current | flushed | currentFlushed | all)
forceFlush=(TRUE | FALSE)
file="fileName"
```

Start Disk Pool Locate

This command identifies the drives that are logically grouped together to form the specified disk pool by blinking the indicator lights on the drives. (Use the **stop diskPool locate** command to turn off the indicator lights on the drives.)

Syntax

```
start diskPool [diskPoolName] locate
```

Start Drive Channel Fault Isolation Diagnostics

This command runs the drive channel fault isolation diagnostics and stores the results.

Syntax

```
start driveChannel [(1 | 2 | 3 | 4 | 5 | 6 | 7 | 8)]
controller [(a | b)] faultDiagnostics
(testDevices=[all |
controller=(a | b) |
esms=[trayID1 (left | right), ... , trayIDN (left | right)] |
drives=[trayID1,slotID1, ... , trayIDn,slotIDN]] |
dataPattern=(fixed | pseudoRandom) |
patternNumber=[(0xhexadecimal | number)] |
maxErrorCount=integer |
testIterations=integer |
timeout=timeInterval)
```

Start Drive Channel Locate

This command identifies the drive trays that are connected to a specific drive channel by turning on the indicator lights for the drive tray that is connected to the drive channel. (Use the **stop driveChannel locate** command to turn off the indicator lights on the drive tray.)

Syntax

```
start driveChannel [(1 | 2 | 3 | 4 | 5 | 6 | 7 | 8)] locate
```

Start Drive Initialize

This command starts a drive initialization.

ATTENTION Possible damage to the storage array configuration – As soon as you enter this command, all user data is destroyed.

Syntax

```
start drive [trayID,drawerID,slotID] initialize
```

Start Drive Locate

This command locates a drive by turning on an indicator light on the drive. (Run the `stop drive locate` command to turn off the indicator light on the drive.)

Syntax

```
start drive [trayID,drawerID,slotID] locate
```

Start Drive Reconstruction

This command starts reconstructing a drive.

Syntax

```
start drive [trayID,drawerID,slotID] reconstruct
```

Start Host Interface Card Diagnostic

This command runs diagnostic tests to evaluate the functionality of the controller host interface card. The diagnostic tests that this command runs are specific to the host interface card that is in the controller. Before you run these tests, you must make these changes to the controller that has the host interface card on which you want to run diagnostics:

- Place the controller into service mode (use the `set controller [(a | b)] availability=serviceMode` command).
- Attach the management client directly to the controller through the management Ethernet port.

NOTE In a dual controller configuration, you must run these diagnostic tests through the controller that you want to evaluate. You cannot run these diagnostic tests through the partner controller.

Syntax

```
start hostCard [(1 | 2 | 3 | 4)] controller [(a | b)] diagnostic
diagnosticType=(basic | extended)
[extendedTestID=(EDC | DMA | RAM | internalLoopback)]
```

Start iSCSI DHCP Refresh

This command initiates a refresh of the DHCP parameters for the iSCSI interface. If the configuration method for the interface is not set to DHCP, the procedure returns an error.

Syntax

```
start controller [(a | b)] iscsiHostPort [(1 | 2 | 3 | 4)] dhcpRefresh
```

Start Secure Drive Erase

This command erases all of the data from one or more full disk encryption (FDE) drives so that they can be reused as FDE drives. Run this command only when the FDE drives are no longer part of a secure volume group or disk pool, or when the security key is unknown.

Syntax

```
start secureErase (drive [trayID,slotID] |
drives [trayID1,slotID1 ... trayIDn,slotIDn])
```

Start Snapshot (Legacy) Rollback

NOTE With firmware version 7.83 the order of the terms in the syntax is changed to be consistent with other commands. Replace the deprecated command syntax with the new command syntax.

This command starts a rollback operation for one or more snapshot (legacy) volumes. The content of the base volume changes immediately to match the point-in-time content of the selected snapshot (legacy) volume. The base volume immediately becomes available for read/write requests after the rollback operation has successfully completed. To stop a snapshot (legacy) rollback operation, use the **stop rollback volume** command.

The repository volume that is associated with the snapshot (legacy) continues to track any new changes between the base volume and the snapshot (legacy) volume that occur after the rollback operation is completed.

Syntax (Deprecated)

```
start rollback (volume [snapshotVolumeName] |
volumes ["snapshotVolumeName1" ... "snapshotVolumeNameN"])
```

Syntax (New)

```
start (volume ["snapshotVolumeName"] |
volumes ["snapshotVolumeName1" ... "snapshotVolumeNameN"]) rollback
```

Start Snapshot Image Rollback

This command starts a rollback operation for a set of snapshot images. The content of the base volume changes immediately to match the point-in-time content of the selected snapshot image volume. The base volume immediately becomes available for read/write requests after the rollback operation has successfully completed. To stop a snapshot image rollback operation, use the `stop rollback snapImage` command.

The repository volume that is associated with the snapshot image continues to track any new changes between the base volume and the snapshot image volume that occur after the rollback operation is completed.

NOTE You cannot use this command for snapshot images involved in online volume copy.

Syntax

```
start snapImage ["snapImageName"] rollback
```

Start SSD Cache Locate

This command identifies the Solid State Disks (SSDs) that are logically grouped together to form the SSD cache by blinking the indicator lights on the SSDs. (Use the `stop ssdCache locate` command to turn off the indicator lights on the drives.)

Syntax

```
start ssdCache [ssdCacheName] locate
```

Start SSD Cache Performance Modeling

This command starts performance modeling for the SSD cache. Performance modeling monitors and measures I/O activity for a period of time and estimates performance for various SSD cache sizes. Performance is estimated using two metrics: cache hit percentage and average response time. The performance modeling data is not available until you stop the operation using the `stop ssdCache performanceModeling` command.

Syntax

```
start ssdCache [ssdCacheName] performanceModeling
```

Start Storage Array Configuration Database Diagnostic

This command runs a consistency check against a configuration database.

Syntax

```
start storageArray configDbDiagnostic  
[sourceLocation=(disk | onboard) |  
diagnosticType=(fileSystem | mirror) |  
controller[(a | b)]]
```

Start Storage Array Core Dump

This command produces a storage array core dump.

Syntax

```
start storageArray coreDump controller [(a|b)]
```

Start Storage Array iSNS Server Refresh

This command initiates a refresh of the network address information for the iSNS server. If the DHCP server is marginal or unresponsive, the refresh operation can take from two to three minutes to complete.

NOTE This command is for IPv4 only.

Syntax

```
start storageArray isnsServerRefresh
```

Start Storage Array Locate

This command locates a storage array by turning on the indicator lights for the storage array. (Use the `stop storageArray locate` command to turn off the indicator lights for the storage array.)

Syntax

```
start storageArray locate
```

Start Synchronous Mirroring Synchronization

This command starts Synchronous Mirroring synchronization.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax

```
start syncMirror primary ["volumeName"] synchronize
```

Start Tray Locate

This command locates a tray by turning on the indicator light. (Use the `stop tray locate` command to turn off the indicator light for the tray.)

Syntax

```
start tray [trayID] locate
```

Start Volume Group Defragment

This command starts a defragment operation on the specified volume group.

NOTE Defragmenting a volume group starts a long-running operation that you cannot stop.

Syntax

```
start volumeGroup [volumeGroupName] defragment
```

Start Volume Group Export

This command moves a volume group into an Exported state. Then you can remove the drives that comprise the volume group and reinstall the drives in a different storage array.

NOTE Within the volume group, you cannot move volumes that are associated with the premium features from one storage array to another storage array.

Syntax

```
start volumeGroup [volumeGroupName] export
```

Start Volume Group Import

This command moves a volume group into a Complete state to make a newly introduced volume group available to its new storage array. The volume group must be in an Exported state or a Forced state before you run this command. Upon successfully running the command, the volume group is operational.

NOTE Within the volume group, you cannot move volumes that are associated with the premium features from one storage array to another storage array.

Syntax

```
start volumeGroup [volumeGroupName] import
```

Start Volume Group Locate

This command identifies the drives that are logically grouped together to form the specified volume group by blinking the indicator lights on the drives. (Use the `stop volumeGroup locate` command to turn off the indicator lights on the drives.)

Syntax

```
start volumeGroup [volumeGroupName] locate
```

Start Volume Initialization

This command starts the formatting of a volume in a storage array.

NOTE Formatting a volume starts a long-running operation that you cannot stop.

Syntax

```
start volume [volumeName] initialize
```

Stop Cache Backup Device Diagnostic

This command stops the cache backup device diagnostic tests that were started by the **start cacheBackupDevice diagnostic** command.

Syntax

```
stop cacheBackupDevice controller [(a | b)] diagnostic
```

Stop Cache Memory Diagnostic

This command stops the cache memory diagnostic tests that were started by the **start cacheMemory diagnostic** command.

Syntax

```
stop cacheMemory controller [(a | b)] diagnostic
```

Stop Consistency Group Snapshot Rollback

This command stops a rollback operation to the member base volumes in a snapshot consistency group that was initiated by the **start cgSnapImage rollback** command.

NOTE Canceling a consistency group snapshot rollback operation leaves the base volume in an indeterminate state with potentially invalid or inconsistent data. The related consistency group snapshot volume becomes disabled and unusable.

Syntax

```
stop cgSnapImage["snapCGID:imageID"] | rollback  
[memberVolumeSet ["memberVolumeName1" ... "memberVolumeNameN"]]
```

Stop Consistency Group Snapshot Volume

This command stops the copy-on-write operation for creating a consistency group snapshot volume. To restart the copy-on-write operation use the `resume cgSnapVolume` command.

NOTE This command does not delete a consistency group snapshot volume. To delete a consistency group snapshot volume use the `delete cgSnapVolume` command.

Syntax

```
stop cgSnapVolume [snapVolumeName]
```

Stop Controller Diagnostic

This command stops the controller diagnostic tests that were started by the `start controller diagnostic` command.

Syntax

```
stop controller [(a | b)] diagnostic
```

Stop Disk Pool Locate

This command turns off the indicator lights on the drives that were turned on by the `start diskPool locate` command.

Syntax

```
stop diskPool locate
```

Stop Drive Channel Fault Isolation Diagnostics

This command stops the drive channel fault isolation diagnostics, which stops the `start drive channel fault isolation diagnostics` command before it completes.

Syntax

```
stop driveChannel faultDiagnostics
```

Stop Drive Channel Locate

This command turns off the indicator lights on the drive trays that were turned on by the `start driveChannel locate` command.

Syntax

```
stop driveChannel locate
```

Stop Drive Locate

This command turns off the indicator light on the drive that was turned on by the `start drive locate` command.

Syntax

```
stop drive locate
```

Stop Host Interface Card Diagnostic

This command stops the host interface card diagnostic tests that were started by the `start host card diagnostic` command.

Syntax

```
stop hostCard controller [(a | b)] diagnostic
```

Stop Pending Snapshot Images on Consistency Group

This command stops all of the pending snapshot images that are to be created on a snapshot consistency group. If the snapshot consistency group does not have any pending snapshot images, the storage management software displays an error message and does not run the command.

Syntax

```
stop consistencyGroup [consistencyGroupName] pendingSnapImageCreation
```

Stop Snapshot (Legacy)

This command stops a copy-on-write operation.

Syntax

```
stop snapshot (volume [volumeName] |  
volumes [volumeName1 ... volumeNameN])
```

Stop Snapshot (Legacy) Rollback

NOTE With firmware version 7.83 the order of the terms in the syntax is changed to be consistent with other commands. Replace the deprecated command syntax with the new command syntax.

This command stops a snapshot (legacy) rollback operation that was initiated by the `start rollback volume` command.

NOTE Canceling a rollback operation leaves the base volume in an indeterminate state with potentially invalid or inconsistent data. The related snapshot (legacy) volume becomes disabled and unusable.

Syntax (Deprecated)

```
stop rollback (volume [snapshotVolumeName |  
volumes [snapshotVolumeName1 ... snapshotVolumeNameN])
```

Syntax (New)

```
stop (volume [snapshotVolumeName |  
volumes [snapshotVolumeName1 ... snapshotVolumeNameN]) rollback
```

Parameter	Description
volume	The name of the snapshot (legacy) volume for which you want to stop a rollback operation. Enclose the volume name in square brackets ([]). If the volume name has special characters or numbers, you must enclose the volume name in double quotation marks (" ") inside square brackets.
volumes	The names of several snapshot (legacy) volumes for which you want to stop a rollback operation. Enter the names of the volumes using these rules: <ul style="list-style-type: none">▪ Enclose all of the names in square brackets ([]).▪ Separate each of the names with a space. If the volume names have special characters or numbers, enter the names using these rules: <ul style="list-style-type: none">▪ Enclose all of the names in square brackets ([]).▪ Enclose each of the names in double quotation marks (" ").▪ Separate each of the names with a space.

Stop Snapshot Group Pending Snapshot Images

This command cancels all of the pending snapshot images that are to be created on a snapshot group. If the snapshot group does not have any pending snapshot images, the firmware displays an error message and does not run the command. You can run this command on a snapshot group or a snapshot consistency group.

Syntax

```
stop (snapGroup [snapGroupName] |  
consistencyGroup [snapConsistencyGroupName])  
pendingSnapImageCreation
```

Stop Snapshot Image Rollback

This command stops a snapshot image rollback operation that was initiated by the **start snapImage rollback** command.

NOTE Canceling a snapshot image rollback operation leaves the base volume in an indeterminate state with potentially invalid or inconsistent data. The related snapshot image volume becomes disabled and unusable.

Syntax

```
stop snapImage [snapCGID:imageID] rollback
```

Stop Snapshot Volume

This command stops a snapshot volume operation.

Syntax

```
stop snapVolume ["snapVolumeName"]
```

Stop SSD Cache Locate

This command turns off the indicator lights on the Solid State Disks (SSDs) that were turned on by the **start ssdCache locate** command.

Syntax

```
stop ssdCache locate
```

Stop SSD Cache Performance Modeling

This command stops the performance modeling operation and displays the performance modeling data for the SSD cache. Before running this command, you must start the performance modeling operation with the **start ssdCache performanceModeling** command. Optionally, you can save the data to a file.

Syntax

```
stop ssdCache [ssdCacheName] performanceModeling [file="filename"]
```

Stop Storage Array Configuration Database Diagnostic

This command stops the diagnostic test to validate the configuration database in the controller firmware that was started by the **start storageArray configDbDiagnostic** command.

Syntax

```
stop storageArray configDbDiagnostic
```

Stop Storage Array Drive Firmware Download

This command stops a firmware download to the drives in a storage array that was started with the **download storageArray driveFirmware** command. This command does not stop a firmware download that is already in progress to a drive. This command stops all firmware downloads to drives that are waiting for the download.

Syntax

```
stop storageArray driveFirmwareDownload
```

Stop Storage Array iSCSI Session

This command forces the termination of a storage array iSCSI session.

Syntax

```
stop storageArray iscsiSession [sessionNumber]
```

Stop Storage Array Locate

This command turns off the indicator lights on the storage array that were turned on by the **start storageArray locate** command.

Syntax

```
stop storageArray locate
```

Stop Tray Locate

This command turns off the indicator light on the tray that was turned on by the **start tray locate** command.

Syntax

```
stop tray locate
```

Stop Volume Copy

This command stops a volume copy operation. This command is valid for both snapshot (legacy) volume copy pairs and new snapshot volume copy pairs.

Syntax

```
stop volumeCopy target [targetName] source [sourceName]
```

Stop Volume Group Locate

This command turns off the indicator lights on the drives that were turned on by the `start volumeGroup locate` command.

Syntax

```
stop volumeGroup locate
```

Suspend Asynchronous Mirror Group

This command suspends the synchronization of data on all mirrored pairs at the asynchronous mirror group level. This `suspend` command helps to reduce any performance impact to the host application that might occur while any changed data on the local storage array is copied to the remote storage array.

Syntax

```
suspend asyncMirrorGroup [asyncMirrorGroupName]
```

Suspend SSD Cache

This command temporarily stops caching for all of the volumes that are using the SSD cache. While caching is stopped, host reads are serviced from the base volumes instead of from the SSD cache.

Syntax

```
suspend ssdCache [ssdCacheName]
```

Suspend Synchronous Mirroring

This command suspends a Synchronous Mirroring operation.

NOTE In previous versions of this command the feature identifier was `remoteMirror`. This feature identifier is no longer valid and is replaced by `syncMirror`.

Syntax

```
suspend syncMirror (primary [primaryVolumeName]  
primaries [primaryVolumeName1 ... primaryVolumeNameN])  
[writeConsistency=(TRUE | FALSE)]
```

Test Asynchronous Mirror Group Connectivity

This command tests possible communication problems between the local storage array and the remote the storage array associated with an asynchronous mirror group.

Syntax

```
diagnose asyncMirrorGroup [asyncMirrorGroupName]  
testID=(all | connectivity | latency | bandwidth | portConnections)
```

Validate Storage Array Security Key

This command validates the security key for a storage array that has full disk encryption (FDE) drives to make sure that the security key is not corrupt.

Syntax

```
validate storageArray securityKey  
file="fileName"  
passPhrase="passPhraseString"
```

Changes to the CLI and Script Commands in This Release

This topic provides the following tables that lists the changes in the SANtricity Storage Manager 11.10 (firmware 8.10) release of the CLI commands and Script commands.

- [Changes That Affect All Commands](#) lists changes that affect all of the commands.
- [New Commands](#) lists commands that are new with this release of SANtricity Storage Manager.
- [Revised Commands](#) lists commands that are changed to add new parameters or to revise information in the command description.
- [Deprecated Commands](#) lists commands that are no longer supported in this level of software, and the new commands that replaced them.
- [Deprecated Parameters](#) lists the parameters that are no longer supported in this level of software and the new parameters that replaced them.

Table 4. Changes That Affect All Commands

Change	Description
Reformat the presentation of optional parameters.	All of the commands with optional parameters were revised to meet industry standards for presentation. Previously the presentation was this: <pre>[(parameter1 parameter2)]</pre> The presentation is now this: <pre>[parameter1] [parameter2]</pre>

Table 5. New Commands

New Command	Description
Disk Pool Command	
set diskPool removeDrive (Reduce Disk Pool Capacity)	This command reduces the capacity of the disk pool by removing the drives from the disk pool.
Embedded SNMP Commands	
create snmpCommunity (Register SNMP Community)	This command creates a new Simple Network Management Protocol (SNMP) community.
create snmpTrapDestination (Register SNMP Trap Destination)	This command creates a new Simple Network Management Protocol (SNMP) trap destination.
show snmpCommunity	This command returns information about the Simple Network Management Protocol (SNMP) communities defined for the storage array.
show snmpSystemVariable	This command returns information about the Simple Network Management Protocol (SNMP) system variables.
start snmpTrapDestination (Test SNMP Trap Destination)	This command tests the connection and identification of the trap receiver for a specific Simple Network Management Protocol (SNMP) community.
delete snmpCommunity (Unregister SNMP Community)	This command deletes an existing Simple Network Management Protocol (SNMP) community that you previously created and registered using the create snmpCommunity command.
delete snmpTrapDestination (Unregister SNMP Trap Destination)	This command deletes an existing Simple Network Management Protocol (SNMP) trap destination that you previously created and registered using the create snmpTrapDestination command.
set snmpCommunity (Update SNMP Community)	This command creates a new name for an existing Simple Network Management Protocol (SNMP) community.
set snmpSystemVariable (Update SNMP MIB II System Group Variables)	This command changes the system variables for the Simple Network Management Protocol (SNMP).
set snmpTrapDestination (Update SNMP Trap Destination)	This command turns on or turns off sending authentication failure messages for an SNMP trap destination.
Event Alert Commands	
set blockEventAlert (Set Event Alert)	This command blocks an event alert.
set unBlockEventAlert (Set Event Alert)	This command unblocks an event alert.
show blockedEventAlertList	This command returns a list of events that are currently blocked by the set blockEventAlert command.
SAS Port Command	
recover sasPort miswire	This command tells a controller that corrective action has been taken to recover from a mis-wire condition.
Storage Array Command	

New Command	Description
<code>show storageArray powerInfo</code>	This command returns information about the amount of power consumed by the entire storage array and each tray in the storage array.

Table 6. Revised Commands

Revised Command	Description
<code>download storageArray NVSRAM</code>	Added this parameter: <ul style="list-style-type: none"> ▪ <code>[healthCheckMelOverride</code>
<code>resume asyncMirrorGroup</code>	Added this parameter: <ul style="list-style-type: none"> ▪ <code>deleteRecoveryPointIfNecessary</code>
<code>set syncMirror</code>	In the last paragraph of the Notes section, "asynchronous mirrorings" was changed to "asynchronous write mode".
<code>start asyncMirrorGroup</code>	Added these parameters: <ul style="list-style-type: none"> ▪ <code>synchronize</code> ▪ <code>deleteRecoveryPointIfNecessary</code>

Table 7. Deprecated Commands

Deprecated Command	New Command
<code>activate hostPort</code>	This command was removed in SANtricity 10.84, firmware 7.84.
<code>resume rollback volume</code>	This command is deprecated because the sequence of the syntax was revised. The new command is: <code>resume volume rollback</code>
<code>stop rollback volume</code>	This command is deprecated because the sequence of the syntax was revised. The new command is: <code>stop volume rollback</code>

Table 8. Deprecated Parameters

Deprecated Parameter	Revision
<code>alarm</code>	This parameter was removed from the <code>set storageArray</code> command.
<code>driveMediaType</code>	This parameter was removed from the <code>activate storageArray feature=syncMirror</code> command.

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