NetApp

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SANtricity commands

NetApp
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Table of Contents

S

save …

Save drive log

The `save allDrives logFile` command saves the drive logs to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Drive log data is maintained by the storage array for each drive.

> ⓘ   Do not run this command unless you are instructed to do so by technical support.

Syntax

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

Parameter

Parameter	Description
`logFile`	The file path and the file name to which you want to save the drive logs. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\drive01.zip"` > ⓘ This command does not automatically append a file extension to the saved file. You must specify the .zip file extension when entering the file name.

Minimum firmware level

6.10

Save tray log

The `save allTrays logFile` command saves the log sense data to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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"
```

Parameter

Parameter	Description
logFile	The file path and the file name to which you want to save the log sense data. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\traylogdat.txt"` This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.

Minimum firmware level

6.50

Save audit log records

The `save auditLog` command retrieves the audit log records.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
save auditLog (all | (beginDate=date | endDate=date)
|(beginRecord=timestamp | endRecord=timestamp)) file="filename"
```

Parameters

Parameter	Description
`all`	Allows you to retrieve all audit log records.
`beginDate`	Allows you to specify the beginning date to retrieve. The format for entering the date is MM:DD:YY in the client time zone. The first audit log record retrieved will be the first record that was posted on or after the specified date. (i) The midnight-to-midnight range is based on the client's time zone.
`endDate`	Allows you to specify the ending date to retrieve. If not specified, then the last record in the log will be retrieved. The format for entering the date is MM:DD:YY in the client time zone. The last audit log record retrieved will be the last record that was posted on or before the specified date. (i) The midnight-to-midnight range is based on the client's time zone.
`beginRecord`	Allows you to specify the beginning record to retrieve. The value is the integral value that represents the time stamp of the first audit log record, inclusive. If not specified, the first record in the log will be retrieved.
`endRecord`	Allows you to specify the ending record to retrieve. The value is the integral value that represents the time stamp of the last audit log record, inclusive. If not specified, then the last record in the log will be retrieved.

Parameter	Description
`file`	Allows you to specify the audit log's output filename.
	ⓘ The audit log records are saved in the file in descending order, from newest to oldest.

Examples

```
SMcli -n Array1 -c "save auditLog all file="myAuditLog.txt";"

SMcli -n Array1 -c "save auditLog endRecord=1493070393313
file="myAuditLog.txt";"

SMcli -n Array1 -c "save auditLog beginDate=12:12:16 endDate=04:01:17
file="myAuditLog.txt";"


SMcli completed successfully.
```

Minimum firmware level

8.40

Save check volume parity job parity errors

The `save check volume parity job parity errors` command saves the parity errors logged by a check volume parity job to the specified file. The output file is written in the same format as the deprecated check volume parity command, and therefore can be used as input to the existing repair volume parity command.

Supported Arrays

This command applies to any individual storage array, including the EF600 and EF300 arrays; as long as all SMcli packages are installed.

Roles

To execute this command on an EF600 and EF300 storage array, you must have the Storage Admin role.

Syntax

```
save check volume parity job parityErrors jobId=<job_id>
parityErrorFile=<parity_error_file>;
```

Parameters

Parameter	Description
`jobId`	The job id for which to retrieve and save logged parity errors. This value is required.
`parityErrorFile`	The file specified by the user to indicate where the logged parity errors should be saved. This value is required.

Minimum firmware level

11.80

Generate web server Certificate Signing Request (CSR)

The `save controller arrayManagementCSR` command generates a Certificate Signing Request (CSR) for the controller.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

The CSR must be signed by a Certificate Authority (CA). The resulting signed certificate is installed on the controller's web server so that browsers can automatically trust the controller's web server when trying to manage the array. Perform this action for each controller.

Syntax

```
save controller [(a|b)] arrayManagementCSR
     commonName="ipOrDnsName"
     [alternateIPAddresses=(ipvX1...ipvXN)]
     [alternateDnsNames=("dnsName1"..."dnsNameN")]
     organization="organizationName"
     [organizationalUnit="organizationalUnitName"]
     locality="cityOrLocality"
     [stateProvince="stateOrRegion"]
     country="string"
     file="filename"
```

Parameters

Parameter	Description
`controller`	Allows you to specify the controller on which you want to create the CSR for. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
`commonName`	Allows you to specify the IP address or DNS name of the controller. This must match exactly what will be typed in the browser to access System Manager (do not include http:// nor https://) or there will be a name mismatch error.
`alternateIPAddresses`	Allows you to specify additional IP addresses or aliases for the controller. Enclose all the IP addresses in parentheses. If you enter more than one IP address, separate them with a space.
`alternateDnsNames`	Allows you to specify additional DNS names for the controller. Enclose all the DNS names in parentheses. If you enter more than one name, separate them with a space.
`organization`	Allows you to specify the organization's full legal name that the storage array belongs to. Do not abbreviate it and include any suffixes such as Inc, Corp, or LLC.
`organizationalUnit`	Allows the user to specify the organization's division that handles the certificate.
`locality`	Allows you to specify the city or locality where the storage array is located.
`stateProvince`	Allows you to specify the state or region where the storage array is located. This should not be abbreviated.
`country`	Allows you to specify your country's two-digit ISO (International Organization for Standardization) code, such as US.
`file`	Allows you to specify the file for which to save the controller's CSR file.

```
SMcli -n Array1 -c "save controller [a] arrayManagementCSR
   commonName="ictd0702s05c01-a.ict.englab.xyz.com"
   alternateIPAddresses=(10.113.174.190 10.113.174.191)
   alternateDnsNames=("ictd0702s05c01-b.ict.englab.xyz.com")
   organization="Company"
   locality="Wichita"
   stateProvince="Kansas"
   country="US"
   file="C:\storage_array_csr.csr";"

SMcli completed successfully.
```

Minimum firmware level

8.40

Retrieve installed server certificate

The `save controller arrayManagementSignedCertificate` command retrieves the installed server certificate for the controller so you can view certificate details.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

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

Parameters

Parameter	Description
controller	Allows you to specify the controller on which you want to download the signed certificate from. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
file	Allows you to specify the file for which to save the controller's signed certificate file.

Examples

```
SMcli -n Array1 -c "save controller [a] arrayManagementSignedCertificate
    file="C:\controllerAcertificate.cer";"

SMcli -n Array1 -c "save controller [b] arrayManagementSignedCertificate
    file="C:\controllerBcertificate.cer";"

SMcli completed successfully.
```

Minimum firmware level

8.40

Retrieve installed CA certificates

The `save controller caCertificate` command retrieves the installed CA certificates from the specified controller. Included in the retrieved certificates are any requested CA certificates from the controller's web server.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
save controller[(a|b)] caCertificate [all | aliases=("alias1" ... "
aliasN")]
 path="fileLocation"
```

Parameters

Parameter	Description
controller	Allows you to specify the controller on which you want to retrieve the root/intermediate certificates. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
all	Allows you to specify the retrieval of all certificates that were imported to resolve the signed certificate chain. User-installed certificates include key management certificates.
aliases	Allows you to specify which user installed root/intermediate certificate to retrieve by alias. Enclose all the aliases in parentheses. If you enter more than one alias, separate them with a space.
path	Allows you to specify the local location to save the controllers' root/intermediate certificates.

Examples

```
SMcli -n Array1 -c "save controller[a] caCertificate all path="C:\";"

SMcli -n Array1 -c "save controller[b] caCertificate aliases=("myAlias"
"anotherAlias") path="C:\";"

SMcli completed successfully.
```

Minimum firmware level

8.40

Save controller NVSRAM

The `save controller NVSRAM file` command saves a selected set of controller NVSRAM regions to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

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

Parameters

Parameter	Description
controller	The controller with the NVSRAM values that you want to save. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
file	The file path and the file name to which you want to save the NVSRAM values. Enclose the NVSRAM file name in double quotation marks (" "). For example: file="C:\Program Files\CLI\logs\nvsramb.txt" The default name of the file that contains the NVSRAM values is nvsram-data.txt. This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.

Minimum firmware level

6.10

Save drive channel fault isolation diagnostic status

The `save driveChannel faultDiagnostics file` command saves the drive channel fault isolation diagnostic data that is returned from the `start driveChannel faultDiagnostics` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

ⓘ With firmware version 8.10, the `save driveChannel faultDiagnostics` command is deprecated.

You can save the diagnostic data to a file as standard text or as XML.

Syntax

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

Parameter

Parameter	Description
`file`	The file path and the file name to which you want to save the results of the fault isolation diagnostics test on the drive channel. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\sup\fltdiag.txt"` This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.

Notes

A file extension is not automatically appended to the saved file. You must specify the applicable format file extension for the file. If you specify a file extension of `.txt`, the output will be in a text file format. If you specify a file extension of `.xml`, the output will be in an XML file format.

Minimum firmware level

7.15 introduces this new capability for legacy controller trays.

Save input output controller (IOC) dump

The `save IOCLog` command saves the IOC dumps from the controllers in a storage array to a file on a host.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and

EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
save IOCLog [file="filename"]
```

Parameter

Parameter	Description
`file`	The file path and the file name to which you save the IOC dump. Enclose the file name in double quotation marks (" "). For example: ```file="C:\Array Backups\IOCcoredump1.7z"``` This command saves the data to a compressed file and adds the file extension `.7z` to the saved file. The default name of the file that contains the IOC-related data for controllers in the storage array uses the WWN of the storage array.

Notes

This command retrieves from both controllers the IOC dump log data and the IOC dump metadata. Using a 7zip file format, the retrieved data is archived and compressed into a single file with a file name of your choice. The 7zip archive file contains the following:

- filename+"IOCLog"+[A|B].gz — the IOC logs retrieved from controller A or controller B if available
- filename+"IOCLogInfo"+[A|B].txt — the IOC logs metadata info retrieved from controller A or controller B . If the IOC log data cannot be retrieved from a controller, the metadata .txt file will contain the error condition and reason.

The following are error conditions:

- The controller platform and HIC do not support IOC dump.
- The controllers have not collected IOC dump data.

The compressed logs are not in a human-readable format. You must return the logs to technical support to be evaluated.

Minimum firmware level

8.20

Save storage array diagnostic data

The `save storageArray diagnosticData` command saves the storage array diagnostic data from either the controllers or the environmental services modules (ESMs) to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

You can review the file contents at a later time. You can also send the file to technical support 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.

ⓘ   Run this command only with the assistance of technical support.

Syntax

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

Parameters

Parameter	Description
diagnosticData	This parameter allows you to download the diagnostic data from either the controllers or the ESMs.

Parameter	Description
`file`	The file path and the file name to which you want to save the storage array diagnostic data. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\sadiag.zip"` This command automatically saves the data to a compressed file; however, this command does not automatically append a file extension to the saved file. You must specify the `.zip` extension when entering the file name.

Notes

In versions of this command before 7.77, the user option was `esm` instead of `tray`. Starting in 7.77, `tray` replaces `esm`. The use of `esm` is still supported, but for best compatibility with future releases, replace `esm` with `tray`.

Minimum firmware level

6.16

7.77 `tray` replaces `esm`.

Save asynchronous mirror group statistics

The `save storageArray arvmStats asyncMirrorGroup` command saves the synchronization statistics to a file for one or more member volumes in an asynchronous mirror group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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)]
```

Parameters

Parameter	Description
`asyncMirrorGroup`	The name of the asynchronous mirror group for which you are saving synchronization statistics. Enclose the asynchronous mirror group name in square brackets ([ ]). If the asynchronous mirror group name has special characters or numbers, you must enclose the asynchronous mirror group name in double quotation marks (" ") inside square brackets.
`file`	The file path and the file name to which you want to save the synchronization statistics. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\asynchdata.csv"` This command does not automatically append a file extension to the saved file. You can use any file name, but you must use the `.csv` extension.
`volume`	This parameter is optional. The name of the specific member volume in the asynchronous mirror group for which you are retrieving synchronization statistics. If no volume is specified, the statistics for every member volume in the asynchronous mirror group are saved. If statistics are collected for more than one volume in an asynchronous mirror group, all the data will be written to the same file. Enclose the volume name in double quotation marks (" ").

Parameter	Description
`sampleType`	This parameter is optional. The default value for `sampleType` is `all`. • `all` — Data for all three sample types are collected and written to the same file. • `mostRecent` — Statistics are recorded for the most recent 50 resynchronization samples. • `longestSyncTime` — Statistics are collected for the most recent 20 longest resynchronization samples. • `errors` — Statistics are recorded for the most recent 20 failed resynchronization samples. These samples include a failure code.
`recordLimit`	This parameter is optional. The default value for record limit is `no limit`. The `recordLimit` must be greater than 0 and less than or equal to 90.

Notes

Statistics are captured for mirrored volumes in the Primary role. The statistics collected include the following data:

- Synchronization start time
- Synchronization type (manual or periodic)
- Synchronization duration
- Number of bytes sent
- Maximum write time (for a single write)
- Minimum write time (for a single write)
- Minimum synchronization data rate
- Maximum synchronization data rate
- Total write time
- Repository utilization (%)
- Recovery point age

During initial synchronization, statistics samples are captured approximately every 15 minutes.

The synchronization statistics are included in the support bundle.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Save auto-load balancing statistics

The `save storageArray autoLoadBalanceStatistics file` command provides automated I/O workload balancing and ensures that incoming I/O traffic from the hosts is dynamically managed and balanced across both controllers.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

This command saves the automatic load balancing statistics of the storage array to a file. These statistics show the ownership change history on each volume in the array.

(i)   Send this file to technical support for interpretation.

Syntax

```
save storageArray autoLoadBalanceStatistics file="filename"
(numberOfDays=numberOfDays);
```

Parameters

Parameter	Description
`storageArray`	Specifies that this command works on a storage array.
`file`	The file path and the file name to which you want to save the auto-load balancing statistics. Enclose the file name in double quotation marks (" ").
`numberOfDays`	The number of days worth of statistics to save. This parameter is optional and the default value is 0, which indicates all available data.

Example

```
SMcli -n Array1 -c "save storageArray autoLoadBalanceStatistics
file="filename" numberOfDays=30;"
```

	An active "Drive Lost Primary Path" condition will result in the Automatic Load Balancing incapable of balancing workloads. This condition must be inactive to ensure workloads are balanced through the Automatic Load Balancing feature.

Minimum firmware level

8.30

Retrieve an AutoSupport log

The `save storageArray autoSupport log` command allows you to view an AutoSupport log file. This file provides information about status, history of transmission activity, and any errors encountered during delivery of the AutoSupport messages. The log is available for all AutoSupport-capable and AutoSupport-enabled storage arrays.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

This command allows you to view two types of logs:

- Current log — View the log captured at this point in time.
- Archive log — View the log from an archived file.

Syntax

```
save storageArray autoSupport log [inputArchive=n]
file="filename"
```

Parameters

Parameter	Description
`inputArchive`	Allows you to specify the archived AutoSupport log, where the archive file is `n`, an integer starting at 0. |	Omitting this parameter means you select the current AutoSupport log (captured at this point in time).	

Parameter	Description
`file`	Allows you to specify the output ASUP transmission log filename. ⓘ This parameter is required.

Examples

```
SMcli -n Array1 -c "save storageArray autoSupport log inputArchive=0
file=\"ASUPTransmissionLog\";"

SMcli completed successfully.
```

Minimum Firmware Level

8.40

Save storage array configuration

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

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role. However, the use of this command with the LDAP parameter is restricted to those with the Security Admin role.

Context

ⓘ   This command does not save remote mirroring or volume copy configuration data on the current storage array to a file.

Syntax

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

Parameters

Parameter	Description
`file`	The file path and the file name to which you want to save the configuration settings. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\saconf.cfg"` The default name of the file that contains the configuration settings is `storage-array-configuration.cfg`. This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.
`allConfig`	The setting to save all of the configuration values to the file. (If you choose this parameter, all of the configuration parameters are set to `TRUE` .)
`globalSettings`	The setting to save the global settings to the file. To save the global settings, set this parameter to `TRUE`. To prevent saving the global settings, set this parameter to `FALSE`. The default value is `TRUE`.
`volumeConfigAndSettings`	The setting to save the volume configuration settings and all of the global settings to the file. To save the volume configuration settings and global settings, set this parameter to `TRUE`. To prevent saving the volume configuration settings and global settings, set this parameter to `FALSE`. The default value is `TRUE`.
`hostTopology`	The setting to save the host topology to the file. To save the host topology, set this parameter to `TRUE`. To prevent saving the host topology, set this parameter to `FALSE`. The default value is `FALSE`.
`lunMappings`	The setting to save the LUN or NSID mapping to the file. To save the LUN or NSID mapping, set this parameter to `TRUE`. To prevent saving the LUN or NSID mapping, set this parameter to `FALSE`. The default value is `FALSE`.

Notes

When you use this command, you can specify any combination of the parameters for the global setting, the volume configuration setting, the host topology, or the LUN mapping. If you want to enter all settings, use the `allConfig` parameter. You must either use the `allConfig` parameter, or one or more of the other four parameters.

Minimum firmware level

6.10

Save storage array controller health image

The `save storageArray controllerHealthImage` command saves a controller health image to a specified file on a host, for storage arrays that support the controller health image feature.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

> (i) With firmware version 8.20 the `coreDump` parameter is replaced by the `controllerHealthImage` parameter.

If the storage array does not support the controller health image feature, the command returns an error.

Syntax

```
save storageArray controllerHealthImage file="filename"
```

Parameter

Parameter	Description
`file`	The file path and the file name to which you save the controller health image. Enclose the file name in double quotation marks (" "). For example: ```file="C:\Array Backups\DBMbackup_03302010.core"```

Notes

A controller health image file might be one to two gigabytes in size, and take several minutes to save. In addition to saving the controller health image itself, this command generates an XML descriptor file based on the controller health image metadata. This descriptor file is saved in ZIP file format to the same path as the controller health image. The following example show the XML format for the descriptor file.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
- <DPLcontrollerHealthImageInfo>
<dplcontrollerHealthImageTag>sometag#</dplcontrollerHealthImageTag>
<captureTime>12/22/10 3:58:53 PM IST</captureTime>
- <StorageArrayData>
<ArraySAID>600a0b80006e006a000000004c65efc1</ArraySAID>
<ManagementApiVersion>devmgr.v1083api01.Manager</ManagementApiVersion>
<fwVersion>07.83.01.00</fwVersion>
<platformType>7091</platformType>
</StorageArrayData>
<fullcontrollerHealthImageCtlr>controllerserialNumber1
      </fullcontrollerHealthImageCtlr>
<fullcontrollerHealthImageSize>fullCaptureSize</fullcontrollerHealthImageS
ize>
<altcontrollerHealthImageCtlr>controllerserialNumber2</altcontrollerHealth
Image
      Ctlr>
<altcontrollerHealthImageSize>altCaptureSize</altcontrollerHealthImageSize
>
<triggerReason>Exception</triggerReason>-<DPLcontrollerHealthImageDetail>
<dplcontrollerHealthImageReason>DPLcontrollerHealthImageReason
      </dplcontrollerHealthImageReason>
- <fwLocation >
<filename>filename</filename>
<lineNumber>line#</lineNumber>
</fwLocation >
<panicReason>panicString</panicReason>
</DPLcontrollerHealthImageDetail>
</DPLcontrollerHealthImageInfo>
```

When you retrieve a controller health image from the controller cache to a host, a flag is set on the controller to indicate that the controller health image does not need to be retrieved. This setting persists for 48 hours. If a new controller health image occurs during that period, the new controller health image is saved to the controller cache and overwrites any previous controller health image data in cache.

Minimum firmware level

7.83

8.20 replaces the `coreDump` parameter with the `controllerHealthImage` parameter.

Save storage array DBM database

The `save storageArray dbmDatabase` command backs up RAID configuration data or all data to a file on the host. You can specify multiple data locations and controllers.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

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

Parameters

Parameter	Description
`file`	The file path and the file name to which you want to save the database. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\dbmdata.zip"` This parameter must appear last, after any of the optional parameters. This command creates a .zip file and you do not need to specify a file extension.
`sourceLocation`	This parameter specifies the location from which to obtain backup database information. • `disk` indicates that data comes directly from the database on the drive • `onboard` indicates that data comes from the RPA memory location The default location is `onboard`.

Parameter	Description
controller	This parameter specifies the controller from which data will be exclusively retrieved, if sourceLocation is set to onboard. If the controller parameter is not specified, data might be retrieved from either controller. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B.
contentType	This parameter specifies the content type of the data that will be retrieved. This parameter is set to all by default, so that all of the data including disk pool configuration data is retrieved.

Notes

The data that you save to the host using this command can, if needed, be restored to the controller. A validator, however, is required to restore data from the file on the host.

Minimum firmware level

7.75

7.83 adds these parameters:

- sourceLocation
- controller
- contentType

Save storage array DBM validator information file

The save storageArray dbmValidatorInfo command saves the database management (DBM) validation information for a storage array in an XML file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

Technical support 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"
```

Parameters

Parameter	Description
`file`	The file path and the file name of the DBM validator required for technical support. Enclose the file name in double quotation marks (" "). For example: `file="C:\Array Backups \DBMvalidator.xml"` This command does not automatically append a file extension to the saved file. You must specify the .xml file extension when you enter the file name.
`dbmDatabase`	The file path and the file name of the DBM database from which you want to generate the XML information file. Enclose the file name in double quotation marks (" "). For example: `dbmDatabase="C:\Array Backups \DBMbackup_03302010.dbm"` This command does not automatically append a file extension to the saved file. You must specify the .dbm file extension when you enter the file name.

Notes

If you are generating the XML information file to obtain a validator string, you must run this command while you are connected to the controller where you intend to restore the database. The following example show the format of the XML file:

```
<?xml version="1.0" encoding="utf-8"?>
<DbmImageMetadata>
<Controllers>
<A>1IT0nnnnnnnnnABCD</A>
<B>1T0nnnnnnnnnABCD</B>
</Controllers>
<Header>
<ImageVersion>1</ImageVersion>
<TimeStamp>1269388283</TimeStamp>
</Header>
<Trailer>
<CRC>nnnnnnnnnn</CRC><
/Trailer>
</DbmImageMetadata>
```

Minimum firmware level

7.75

Save storage array firmware inventory

The `save storageArray firmwareInventory` command saves a report to a file of all of the firmware currently running on the storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

The report lists the firmware for these components:

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

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 technical support for further review.

Syntax

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

Parameter

Parameter	Description
`file`	The file path and the file name to which you want to save the firmware inventory. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\fwinvent.txt"` The default name of the file that contains the firmware inventory is `firmware-inventory.txt`. This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.

Minimum firmware level

7.70

Save storage array host port statistics

The `save storageArray hostPortStatistics` command saves the storage array host port statistics.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Security Admin role.

Context

> ⓘ This command replaces the deprecated Save storage array iSCSI statistics, Save storage array iSER statistics, and Save storage array InfiniBand statistics commands.

Syntax

```
save storageArray hostPortStatistics [(raw | baseline)] type=(ISCSI| ISER
| SRP | NVMEOF) file="filename"
```

Parameters

Parameter	Description
`raw`	Allows you to retrieve the collected statistics since start-of-day. Enclose the parameter in square brackets ([ ]).
`baseline`	Allows you to retrieve the collected statistics from the time the controllers' baselines were reset to zero. Enclose the parameter in square brackets ([ ]).
`type`	Allows you to indicate which statistics type to collect. Valid choices are: `ISCSI`, `ISER`, `SRP`, and `NVMEOF`.
`file`	Allows you to specify the file path and filename to save the statistics. Enclose the file name in double quotation marks (" "). Use any file name with the `.csv` extension.

Type	Ethernet MAC, Ethernet TCP/IP, Local Initiator (Protocol), DCBX Operational State, LLDP TLV, DCBX TLV	Target (Protocol)	InfiniBand Interface	NVMe Subsystem	ASUP Filename
`iscsi`	X	X			
`iser`		X	X		
`srp`			X		
`nvmeof`			X	X	

Minimum firmware level

8.41

Save storage array InfiniBand statistics

The `save storageArray ibStats` command saves the InfiniBand performance statistics of the storage array to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

> ⓘ This command is deprecated and is replaced by the Save storage array host port statistics command.

Syntax

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

Parameters

Parameter	Description
`raw`	The statistics that are collected are all statistics from the controller start-of-day. Enclose the parameter in square brackets ([ ]).
`baseline`	The statistics that are collected are all statistics from the time the controllers were reset to zero using the `reset storageArray ibStatsBaseline` command. Enclose the parameter in square brackets ([ ]).
`file`	The file path and the file name to which you want to save the performance statistics. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\sup\ibstat.csv"` The default name of the file that contains the InfiniBand performance statistics is `ib-statistics.csv`. You can use any file name, but you must use the `.csv` extension.

Notes

If you have not reset the InfiniBand baseline statistics since the controller start-of-day, the time at the start-of-day is the default baseline time.

Minimum firmware level

7.32

8.41 This command is deprecated.

Save storage array iSCSI statistics

The `save storageArray iscsiStatistics` command saves the iSCSI performance statistics of the storage array to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

> (i) This command is deprecated and is replaced by the Save storage array host port statistics command.

Syntax

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

Parameters

Parameter	Description
raw	The statistics collected are all statistics from the controller start-of-day. Enclose the parameter in square brackets ([ ]).
baseline	The statistics that are collected are all statistics from the time the controllers were reset to zero using the `reset storageArray ibStatsBaseline` command. Enclose the parameter in square brackets ([ ]).

Parameter	Description
`file`	The file path and the file name to which you want to save the performance statistics. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\iscsistat.csv"` The default name of the file that contains the iSCSI performance statistics is `iscsi-statistics.csv`. You can use any file name, but you must use the `.csv` extension.

Notes

If you have not reset the iSCSI baseline statistics since the controller start-of-day, the time at the start-of-day is the default baseline time.

Minimum firmware level

7.10

8.41 This command is deprecated.

Save storage array iSER statistics

The `save storageArray iserStatistics` command saves the iSER performance statistics of the storage array to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

> ⓘ This command is deprecated and is replaced by the Save storage array host port statistics command.

Syntax

```
save storageArray iserStatistics [(raw | baseline)] file="filename"
```

Parameters

Parameter	Description
raw	The statistics collected are all statistics from the controller start-of-day. Enclose the parameter in square brackets ([ ]).
baseline	The statistics that are collected are all statistics from the time the controllers were reset to zero using the `reset storageArray iserStatsBaseline` command. Enclose the parameter in square brackets ([ ]).
file	The file path and the file name to which you want to save the performance statistics. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\iserstat.csv"` The default name of the file that contains the iSCSI performance statistics is `iser-statistics.csv`. You can use any file name, but you must use the `.csv` extension.

Notes

If you have not reset the iSER baseline statistics since the controller start-of-day, the time at the start-of-day is the default baseline time.

Minimum firmware level

8.20

8.41 This command is deprecated.

Retrieve installed external key management certificate

The `save storageArray keyManagementCertificate` command retrieves the installed certificate.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
save storageArray keyManagementCertificate
certificateType="certificateType"
file="filename"
```

Parameters

Parameter	Description
`certificateType`	Allows you to specify the certificate type to install. Valid choices are: `client` or `server`.
`file`	Allows you to specify the filename for the signed certificate or server CA certificate.

Minimum firmware level

8.40

Generate Key Management Certificate Signing Request (CSR)

The `save storageArray keyManagementClientCSR` command requests a generated CSR for the storage array that you can save to a file.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

ⓘ　This command applies only to external key management.

Syntax

```
save storageArray keyManagementClientCSR commonName="common_name"
organization="organization"
locality="locality"
country="country"
file="file"
[organizationalUnit="organizational unit"]
[stateProvince="state_province"]
```

Parameters

Parameter	Description
commonName	The value entered for this parameter must match one of the user names defined on the KMIP server.
organization	Allows you to specify the organization's full legal name that the storage array belongs to. Do not abbreviate it and include any suffixes such as Inc, Corp, or LLC.
locality	Allows you to specify the city or locality where the storage array is located,
country	Allows you to specify your country's two-digit ISO (International Organization for Standardization) 3166-1 alpha-2 code, such as US.
file	Allows you to specify the file and file location where you will save the controller's signed certificate file.
organizationalUnit	Allows you to specify the organization's division that handles the certificate.
stateProvince	Allows you to specify the state or region where the storage array is located. This should not be abbreviated.

Example

```
SMcli -n Array1 -c "save storageArray keyManagementClientCSR
commonName="192.0.2.1"
organization="Widgets Are Us, Inc."
locality="sedgwick"
country="US"
file="latestCertificate"
organizationalUnit="Products Unit"
stateProvince="Kansas";"

SMcli completed successfully.
```

Minimum firmware level

8.40

Save storage array login banner

The `save storageArray loginBanner` command allows you to save a login banner to your local machine. The banner text can include an advisory notice and consent message, which is presented to users before they establish sessions.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

A user with any role can execute this command.

Syntax

```
save storageArray loginBanner file="file_name"
```

Parameters

Parameter	Description
file	The name for the login banner file.

Minimum firmware level

8.41

Save storage array performance statistics

The `save storageArray performanceStats` command saves the performance statistics to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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"
```

Parameter

Parameter	Description
`file`	The file path and the file name to which you want to save the performance statistics. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\sastat.csv"` The default name of the file that contains the performance statistics is `performanceStatistics.csv`. You can use any file name, but you must use the `.csv` extension.

Minimum firmware level

6.10

Save storage array RLS counts

The `save storageArray RLSCounts` command saves the read link status (RLS) counters to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameter

Parameter	Description
`file`	The file path and the file name to which you want to save the RLS counters. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\rlscnt.csv"` The default name of the file that contains the RLS counts is `read-link-status.csv`. You can use any file name, but you must use the `.csv` extension.

Notes

To more effectively save RLS counters to a file, perform these steps:

1. Run the `reset storageArray RLSBaseline` command to set all of the RLS counters to 0.
2. Run the storage array for a predetermined amount of time (for instance, two hours).
3. Run the `save storageArray RLSCounts file="filename"` command.

Minimum firmware level

6.10

Save storage array SAS PHY counts

The `save storageArray SASPHYCounts` command saves the SAS physical layer (SAS PHY) counters to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and

EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

To reset the SAS PHY counters, run the `reset storageArray SASPHYBaseline` command.

Syntax

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

Parameter

Parameter	Description
`file`	The file path and the file name to which you want to save the SAS PHY counters. Enclose the file path and the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\sasphy.csv"` The default name of the file that contains the SAS PHY error statistics is `sas-phy-error-log.csv`. You can use any file name, but you must use the `.csv` extension.

Minimum firmware level

6.10

Save storage array SOC counts

The `save storageArray SOCCounts` command saves the SOC error statistics to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

This command is valid only for Fibre Channel devices in an arbitrated loop topology.

Syntax

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

Parameter

Parameter	Description
`file`	The file path and the file name to which you want to save the SOC error statistics. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\socstat.csv"` The default name of the file that contains the SOC error statistics is `soc-statistics.csv`. You can use any file name, but you must use the `.csv` extension.

Notes

To more effectively save SOC error statistics to a file, perform these steps:

1. Run the `reset storageArray SOCBaseline` command to set all of the SOC counters to 0.
2. Run the storage array for a predetermined amount of time (for example, two hours).
3. Run the `save storageArray SOCCounts file="filename"` command.

Minimum firmware level

6.16

Save storage array state capture

The `save storageArray stateCapture` command saves the state capture of a storage array to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameter

Parameter	Description
`file`	The file path and the file name to which you want to save the state capture. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\state.txt"` You can use any file name, but you must use the `.txt` extension. The default name of the file that contains the state capture is `state-capture-data.txt`. This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.

Save storage array support data

The `save storageArray supportData` command saves the support-related information of the storage array to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

The following table lists the type of support data that you can collect.

Type of data	File name and description

Automatic Load Balancing statistics	`alb-statistics-A.txt`
	
	`alb-statistics-B.txt`
	
	This file, one per controller, specify various statistics related to the Automatic Load Balancing feature that allow further analysis via offline analysis tool.

Core dump metadata	`all-coredump.xml` This file contains core dump metadata for the array. ⓘ Starting with the 8.25 release, core-dump-info.xml has been renamed to all-coredump.xml.
AutoSupport status	`autosupport.xml` This file specifies the current status of ASUP for the given array.
The AutoSupport history file	`autosupport-history.xml` This file specifies all ASUP messages, both standard and AutoSupport OnDemand messages, for the given array. Each entry in the table corresponds to an ASUP message currently sitting in one of the repositories for a given array.
AutoSupport logs	`asup-transmission-logs.txt` This file contains all the transmitted AutoSupport messages.
Web Server Client Info	`client-info.txt` This file specifies various Web Services client information. ⓘ This parameter is not applicable for E2700 and E5600 arrays.
Drive cabling topology	`connection.txt` This file contains information about the connections between the drive tray environmental services module (ESM) and the controller pair.

Type of data	File name and description
Cumulative statistics bundles	`cumulative-drive-vol-stats.xml` This file contains cumulative statistics for the controllers.
Misbehaving drive log	`controller-drive-error-event-log.txt` This file contains the storage array controller drive-side error and event log messages.
Controller health image metadata	`all-coredump.xml` This file contains DPL controller health image information. ⓘ Starting with the 8.25 release, core-dump-info.xml has been renamed to all-coredump.xml.
DOM 0 journal files for controller A (E2800 or E5700 only)	`dom0-complete-journal-A.7z` This file, one per controller, contains detailed Linux system logs. This includes logs for Linux packages and standard Linux utilities and services.
DOM 0 journal files for controller B (E2800 or E5700 only)	`dom0-complete-journal-B.7z` This file, one per controller, contains detailed Linux system logs. This includes logs for Linux packages and standard Linux utilities and services.
Miscellaneous DOM 0 log files for controller A (E2800 or E5700 only)	`dom0-misc-logs-A.7z` This file, one per controller, contains system logs that cannot be contained with the Journal. This includes the serial log for the RAID Application and debug logs for the Hypervisor.
Miscellaneous DOM 0 log files for controller B (E2800 or E5700 only)	`dom0-misc-logs-B.7z` This file, one per controller, contains system logs that cannot be contained with the Journal. This includes the serial log for the RAID Application and debug logs for the Hypervisor.

Type of data	File name and description
Drive command aging timeout values	`drive-command-aging-timeout.txt` This file contains the default values and current values for the command aging timeout field for every drive.
Drive health logs	`drive-health-data.bin` This file contains various drive information related to the drive's health. ⓘ This file is a binary file and will require an offline parser to convert to human readable format.
Drive performance analyzer data	`drive-performance-log.txt` This file contains drive performance data that helps you identify any drives that are performing below expectations.
Enterprise Management Window configuration	`emwdata_v04.bin` This file contains the EMW configuration data store file. ⓘ In support bundles for the E2800 and E5700, this file isn't present.
Tray event logs	`expansion-tray-log.txt` ESM event logs.
Failed repository analysis	`failed-repository-analysis.txt` This file contains the failed repository analysis information.
Features of the storage array	`feature-bundle.txt` This file contains a list of the number of volumes, drives, and drive trays allowed in the storage array and a list of the features available and their limits.
Firmware inventory	`firmware-inventory.txt` This file contains a list of all of the firmware versions for all of the components in the storage array.
InfiniBand interface statistics (InfiniBand only)	`ib-statistics.csv` This file contains the InfiniBand interface statistics.

Type of data	File name and description
I/O path statistics	`io-path-statistics.7z` This file contains raw performance data for each controller that can be used to analyze application performance issues.
IOC dump info for the host interface chip	`ioc-dump-info.txt` This file contains IOC dump information for the host interface chip.
IOC dump logs for the host interface chip	`ioc-dump.gz` This file contains the log dump from the host interface chip on the controller. The file is compressed in gz format. The zip file is saved as a file inside of the Customer Support Bundle.
iSCSI connections (iSCSI only)	`iscsi-session-connections.txt` This file contains a list of all of the current iSCSI sessions.
iSCSI statistics (iSCSI only)	`iscsi-statistics.csv` This file contains statistics for the Ethernet media access control (MAC), Ethernet Transmission Control Protocol (TCP)/Internet Protocol (IP), and iSCSI target.
iSER interface statistics (iSER over InfiniBand only)	`iser-statistics.csv` This file contains the statistics for the host interface card that runs iSER over InfiniBand.
Major event log	`major-event-log.txt` This file contains a detailed list of events that occur on the storage array. The list is stored in reserved areas on the disks in the storage array. The list records configuration events and component failures in the storage array.
Manifest file	`manifest.xml` This file contains a table that describes the files included in the archive file and the collected status of each of those files.
Storage management software runtime information	`msw-runtime-info.txt` This file contains the storage management software application runtime information. Contains the JRE version currently used by the storage management software.

Type of data	File name and description
NVMe-oF statistics	`nvmeof-statistics.csv` This file contains a list of statistics, including NVMe controller statistics, NVMe queue statistics, and interface statistics for the transport protocol (for example, InfiniBand).
NVSRAM data	`nvsram-data.txt` This controller file specifies the default settings for the controllers.
Object bundle	`object-bundle.bin`object-bundle.json This bundle contains a detailed description of the status of your storage array and its components, which was valid at the time that the file was generated.
Summary performance statistics	`perf-stat-daily-summary-a.csv perf-stat-daily-summary-b.csv` This file contains various controller performance statistics, one file per controller.
Persistent reservations and registrations	`persistent-reservations.txt` This file contains a detailed list of volumes on the storage array with persistent reservations and registrations.
Storage management software user preferences	`pref-01.bin` This file contains the user preference persistent data store. ⓘ In support bundles for the E2800 or E5700, this file is not present.
Recovery Guru procedures	`recovery-guru-procedures.html` This file contains a detailed list of all of the recovery guru topics that are issued in response to problems detected on the storage array. For the E2800 and E5700 arrays, this file contains only the recovery guru details, not the HTML files.
Recovery profile	`recovery-profile.csv` This file contains a detailed description of the latest recovery profile record and historical data.

Type of data	File name and description
SAS PHY error logs	`sas-phy-error-logs.csv` This file contains the error information for SAS PHY.
State capture data	`state-capture-data.txt` This file contains a detailed description of the current state of your storage array.
Storage array configuration	`storage-array-configuration.cfg` This file contains a detailed description of the logical configuration on your storage array.
Storage array profile	`storage-array-profile.txt` This file contains a description of all of the components and properties of a storage array.
Trace buffer contents	`trace-buffers.7z` This file contains the contents of the controllers' trace buffers that are used to record debug information.
Tray capture data	`tray-component-state-capture.7z` If your tray contains drawers, the diagnostic data is archived in this zipped file. The Zip file contains a separate text file for each tray that contains drawers. The Zip file is saved as a file inside of the Customer Support Bundle.
Unreadable sectors	`unreadable-sectors.txt` This file contains a detailed list of all of the unreadable sectors that have been logged to the storage array.

Web Services Trace Log (E2800 or E5700 only)	`web-server-trace-log-A.7z`
	
	`web-server-trace-log-B.7z`
	
	This file, one per controller, contains Web Services trace buffers that are used to record debug information.

Workload capture analytics log file	`wlc-analytics-a.lz4 wlc-analytics-b.lz4` This file, one per controller, contains computed key workload characteristics such as LBA histogram, read/write ratio and I/O throughput across all active volumes.

Type of data	File name and description
X-header data file	`x-header-data.txt` This AutoSupport message header consists of plain text key-value pairs; which include information about the array and message type.

Syntax

```
save storageArray supportData file="filename" [force=(TRUE | FALSE)]
```

```
save storageArray supportData file="filename"
[force=(TRUE | FALSE) |
csbSubsetid=(basic | weekly | event | daily | complete) |
csbTimeStamp=hh:mm]
```

Parameters

Parameter	Description
`file`	The file path and the file name to which you want to save the support-related data for the storage array. Enclose the file path and the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\supdat.7z"`
`force`	This parameter forces the collection of support data if there are any failures in securing a lock on controller operations. To force the collection of support data, set this parameter to `TRUE`. The default value is `FALSE`.

Notes

Starting with firmware level 7.86, the file name extension must be `.7z`. If you are running a firmware version earlier than 7.86, the files extension must be `.zip`.

Minimum firmware level

7.80 adds the `force` parameter.

8.30 adds information for the E2800 storage array.

Retrieve installed trusted CA certificates

The `save storageArray trustedCertificate` command retrieves the installed trusted CA certificates for the array. Included in the retrieved files are any requested CA certificates from the array's web servers.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
save storageArray trustedCertificate [allUserInstalled |
aliases=("alias1" ... "aliasN")] path="fileLocation"
```

Parameters

Parameter	Description
`allUserInstalled`	Allows you to specify the retrieval of user installed certificates. The default option is `allUserInstalled` if you didn't specify any aliases.
`aliases`	Allows you to specify which user installed trusted certificate to retrieve by alias. Enclose all the aliases in parentheses. If you enter more than one alias, separate them with a space.
`path`	Allows you to specify the local location for which to save the controller's trusted certificates.

Examples

```
SMcli -n Array1 -c "save storageArray trustedCertificate allUserInstalled
path="C:\";"

SMcli -n Array1 -c "save storageArray trustedCertificate
aliases=("myAlias" "anotherAlias") path="C:\";"

SMcli completed successfully.
```

Minimum firmware level

8.40

Save storage array events

The `save storageArray warningEvents` command saves events from the Major Event Log to a file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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 technical support to help determine the cause of an error.

> ⓘ 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)]
```

Parameters

Parameter	Description
allEvents	The parameter to save all of the events to a file.
criticalEvents	The parameter to save only the critical events to a file.
warningEvents	The parameter to save only the warning events to a file.
infoEvents	The parameter to save only the informational events to a file.
debugEvents	The parameter to save only the debug events to a file.
file	The file path and the file name to which you want to save the events. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\events.txt"` The default name of the file that contains the contents of the Major Event Log is `major-event-log.txt`. This command does not automatically append a file extension to the saved file. You must specify a file extension when entering the file name.
count	The number of events that you want to save to a file. If you do not enter a value for the count, all events matching the type of event you specify are saved to the file. If you enter a value for the count, only that number of events (starting with the last event entered) are saved to the file. Use integer values.
forceSave	The parameter to force saving the debug events you may have filtered from view to a file. To force saving the events, set this parameter to TRUE. The default value is FALSE. (i) Using this parameter saves debug events that have been filtered out of the SANtricity Event Viewer.

Minimum firmware level

7.77 add these parameters:

- warningEvents
- infoEvents

- debugEvents
- forceSave

set …

Set asynchronous mirror group

The `set asyncMirrorGroup` command changes 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.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

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)]
```

Parameters

Parameter	Description
asyncMirrorGroup	The name of the asynchronous mirror group that you want to modify. Enclose the asynchronous mirror group name in square brackets ([ ]). If the asynchronous mirror group name has special characters or numbers, you must enclose the name in double quotation marks (" ") inside square brackets.
volume	The name of an asynchronous mirror group repository volume for which you want to increase the capacity. The name of a repository volume is comprised of two parts: • The term "repos" • A four-digit numerical identifier that the storage management software assigns to the repository volume name Enclose the name of the repository volume in double quotation marks (" ").
syncInterval	Specify the length of time between automatically sending updates of modified data from the local storage array to the remote storage array. You can specify the length of time in minutes, hours, or days.
warningSyncThreshold	Specify the length of time to wait until a warning is triggered for cases in which the synchronization of all of the volumes within the asynchronous mirror group takes longer than the defined time. You can specify the length of time in minutes, hours, or days.
warningRecoveryThreshold	Specify the length of time to wait until a warning is triggered when the automatic data update for the point-in-time image on the remote storage array is older than the defined time. Define the threshold from the end of the previous update. You can specify the length of time in minutes, hours, or days. ⓘ You must set the Recovery Point Threshold to be twice as large as the synchronization interval threshold.
userLabel	The new name that you want to give to the asynchronous mirror group. Use this parameter when you want to rename the asynchronous mirror group. Enclose the new asynchronous mirror group name in double quotation marks (" ").

Parameter	Description
`warningThresholdPercent`	Specify the percent value that determines when a warning is triggered when the capacity of a mirror repository volume reaches the defined percentage. Define the threshold by percentage (%) of the capacity remaining.
`role`	Use this parameter to promote the asynchronous mirror group to a primary role or demote the asynchronous mirror group to a secondary role. To define the asynchronous mirror group as the primary role, set this parameter to `primary`. To define the asynchronous mirror group as the secondary role, set this parameter to `secondary`.
`autoResync`	The settings for automatic resynchronization between the primary volumes and the secondary volumes of an asynchronous mirrored pair within an asynchronous mirror group. This parameter has these values: • `enabled` — Automatic resynchronization is turned on. You do not need to do anything further to resynchronize the primary volume and the secondary volume. • `disabled` — Automatic resynchronization is turned off. To resynchronize the primary volume and the secondary volume, you must run the `start asyncMirrorGroup` command.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

When you use this command, you can specify one or more of the parameters. You do not, however, need to use all of the parameters.

An asynchronous mirror group repository volume is an expandable volume that is structured as a concatenated collection of up to 16 standard volume entities. Initially, an expandable repository volume has only a single volume. The capacity of the expandable repository volume is exactly that of the single volume. You can increase the capacity of an expandable repository volume by attaching additional unused repository volumes to it. The composite expandable repository volume capacity then becomes the sum of the capacities of all of the concatenated standard volumes.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Set audit log settings

The `set auditLog` command configures the audit log settings.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
set auditLog (logLevel={all | writeOnly} |
    fullPolicy={overwrite | preventSystemAccess} |
    maxRecords=n | warningThreshold=n)
```

Parameters

Parameter	Description
`logLevel`	Allows you to specify the level of logging. Valid choices are: `all` and `writeOnly`. The default value is `writeOnly`.
`fullPolicy`	Allows you to specify the policy when the log is full. Valid choices are: `overwrite` and `preventSystemAccess`.
`maxRecords`	Allows the user to specify the maximum number of records to be stored where `n` is an integer starting at 30000 and ending at 50000.
`warningThreshold`	Allows you to specify the percentage at which a warning alert will be sent to indicate that the audit log is nearing full when full policy is set to `preventSystemAccess`. Use integer values between 0 to 100. Setting this parameter to 0 (zero) disables the warning alerts.

Examples

```
SMcli -n Array1 -c "set auditLog logLevel=writeOnly
fullPolicy=preventSystemAccess maxRecords=40000 warningThreshold=90;"

SMcli completed successfully.
```

Minimum firmware level

8.40

Specify AutoSupport HTTP(S) delivery method (for individual E2800 or E5700 arrays)

The `set storageArray autoSupport deliveryMethod` command sets up the delivery method for sending AutoSupport messages to HTTP(S).

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
set storageArray autoSupport deliveryMethod={HTTP | HTTPS}
   {direct | proxyConfigScript="proxyConfigScriptUrl" |
proxyServer hostAddress=address portNumber=portNumber
 [userName="username" password="password"]}
```

Parameters

Parameter	Description
deliveryMethod	Allows the user to specify the delivery method for AutoSupport collection. Valid choices are: • email • HTTP • HTTPS ⓘ If the email method is configured, then the AutoSupport OnDemand and Remote Diagnostics will be disabled.

Parameter	Description
`direct`	Allows the user to connect directly to the destination technical support systems using the HTTP or HTTPS protocol.
`proxyConfigScript`	Allows the user to specify the location of a Proxy Auto-Configuration (PAC) script file
`proxyServer`	Allows the user to specify the HTTP(S) proxy server details required for establishing connection with the destination technical support system.
`hostAddress`	Allows the user to specify the proxy server's host address. Required if proxyServer is used.
`portNumber`	Allows the user to specify the proxy server's port number. Required if proxyServer is used.
`username`	Allows the user to specify the proxy server's username if it is configured.
`password`	Allows the user to specify the proxy server's password if it is configured.

Minimum Firmware Level

8.40

Examples

```
SMcli -n Array1 -c "set storageArray autoSupport deliveryMethod=HTTP
direct;"

SMcli -n Array1 -c "set storageArray autoSupport deliveryMethod=HTTP
proxyConfigScript=\"http://company.com/~username/proxy.pac\";"

SMcli -n Array1 -c "set storageArray autoSupport deliveryMethod=HTTPS
proxyServer hostAddress=10.117.12.112 portNumber=8080 userName=\"tracyt\"
password=\"1234456\";"

SMcli completed successfully.
```

Verification

Send a test message using the `start storageArray autoSupport deliveryTest` command to verify that your delivery methods are set up correctly.

Set consistency group snapshot volume

The `set cgSnapVolume` command creates a unique name for a snapshot volume of a consistency group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
cgSnapVolume	The name of the consistency group volume that you want to rename. Enclose the name of the consistency group snapshot volume in square brackets ([ ]).
userLabel	The new name that you want to give to the snapshot volume in the consistency group. Enclose the new snapshot volume name in double quotation marks (" ").

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

Minimum firmware level

7.83

Set consistency group attributes

The `set consistencyGroup` command defines the properties for a snapshot

consistency group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
consistencyGroupName	The name of the consistency group for which you are setting properties. Enclose the consistency group name in double quotation marks (" ") inside square brackets ([ ]).
userLabel	The new name that you want to give to the snapshot consistency group. Enclose the new consistency group name in double quotation marks (" ").
repositoryFullPolicy	How you want snapshot processing to continue if the snapshot repository volumes are full. You can choose to fail writes to the base volume (failBaseWrites) or delete (purge) the snapshot images (purgeSnapImages). The default action is purgeSnapImages.
repositoryFullLimit	The percentage of repository capacity at which you receive a warning that the snapshot repository volume is nearing full. Use integer values. For example, a value of 70 means 70 percent. The default value is 75.

Parameter	Description
`autoDeleteLimit`	Each consistency group can be configured to perform automatic deletion of its snapshot images to keep the total number of snapshot images in the snapshot group at or below a designated level. When this option is enabled, then any time a new snapshot image is created in the snapshot group, the system automatically deletes the oldest snapshot image in the group to comply with the limit value. This action frees repository capacity so it can be used to satisfy ongoing copy-on-write requirements for the remaining snapshot images.
`rollBackPriority`	The priority for rollback operations for a consistency group while the storage array is operational. Valid values are `highest`, `high`, `medium`, `low`, or `lowest`.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

When you use this command, you can specify one or more of the parameters. You do not, however, need to use all of the parameters.

The rollback priority defines the amount of system resources that should be allocated to the rollback operation at the expense of system performance. A value of `high` indicates that the rollback operation is prioritized over all other host I/O. A value of `low` indicates that the rollback operation should be performed with minimal impact to host I/O.

Auto delete

You can configure each snapshot group to perform automatic deletion of its snapshot images to keep the total number of snapshot images in the snapshot group at or below a maximum number of images. When the number of snapshot images in the snapshot group is at the maximum limit, the `autoDeleteLimit` parameter automatically deletes snapshot images whenever a new snapshot image is created in the snapshot group. The `autoDeleteLimit` parameter deletes the oldest snapshot images in the snapshot group until the maximum number of images defined with the parameter is met. Deleting snapshot images in this way frees repository capacity so it can be used to satisfy ongoing copy-on-write requirements for the remaining snapshot images.

Minimum firmware level

7.83

Add member to consistency group

The `set consistencyGroup addCGMemberVolume` command adds a new base volume as a member to an existing consistency group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

You can specify an 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="volumeGroupName"
```

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))
```

Parameters

Parameter	Description
consistencyGroup	The name of the consistency group to which you want to add a new member volume. The new member volume is the base volume for snapshot operations. Enclose the consistency group name in double quotation marks (" ") inside square brackets ([ ]).

Parameter	Description
`addCGMemberVolume`	The name of a base volume that you want to add. Enclose the volume name in double quotation marks (" "). If the specified volume is an existing repository volume or an existing snapshot volume, the command fails.
`repositoryVolume`	This parameter performs two functions: • In an existing consistency group that has a repository volume, this parameter identifies the repository volume. • When creating a new repository volume this parameter identifies either a volume group or disk pool in which to create the new repository volume. Enclose the volume name in double quotation marks (" ").
`capacity`	The size of a new repository volume in either a volume group or a disk pool. Size is defined in units of bytes, KB, MB, GB, or TB.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

A consistency group is a collection of base volumes that are the source volumes for snapshots. You collect the base volumes in a consistency group so that you can perform the same snapshot operations on each of the base volumes. In the context of this command, the term *member* means a base volume for snapshot operations. You can manipulate snapshot images associated with members of a consistency group through batch-style operations, while maintaining consistency across the snapshot images.

Each member volume must have a corresponding repository volume. You can define the relationship between the member volume and the repository volume using the `repositoryVolume` parameter. The `repositoryVolume` parameter can perform one of these actions:

• Identify an existing repository volume that is connected to the consistency group.

• Identify either a volume group or a disk pool in which you want to create a new repository volume.

Adding a member to a consistency group with an existing repository has two purposes:

• You can create an entirely new repository volume by running the command without the `repositoryVolume` parameter. When you run the command without the `repositoryVolume` parameter, the command creates a new repository volume in the volume group or disk pool in which all the other repository volumes are stored. An example of this command usage is:

```
set consistencyGroup ["First_Images"] addCGMemberVolume="Data_020212"
```

- You can reuse an existing repository volume if that repository volume is empty and is not related to another member volume. You might want to do this if you want to maintain a particular sequence or relationship for the repository volumes. To reuse an existing, empty repository volume you need to know the name of the repository volume. To determine the name of the repository volume use the `show allVolumes summary` command. All repository volume names have the form `repos_XXXX` where `XXXX` is a unique identifier generated by the storage management software. An example of this command usage is:

```
set consistencyGroup ["First_Images"] addCGMemberVolume="Data_020212"
repositoryVolume="repos_0011"
```

You can place the repository volume in a volume group or a disk pool of your choosing. You are not required to have the repository volume in the same location as other repository volumes. To place the repository volume in a volume group or a disk pool of your choice, use the `repositoryVolume` parameter and identify the volume group or the disk pool and a size for the repository volume. An example of this command usage is:

```
set consistencyGroup ["First_Images"] addCGMemberVolume="Data_020212"
repositoryVolume=("12" capacity=2 GB)
```

In this example, `"12"` is the name of an existing volume group or an existing disk pool. The capacity parameter defines the size that you want for the repository volume group.

When you create a new repository volume in either a volume group or a disk pool, you must include parentheses around the volume group name and capacity, or the disk pool name and capacity.

Minimum firmware level

7.83

Set controller DNS settings

The `set controller DNSServers` command updates the Domain Name System (DNS) settings for a controller. DNS is used to resolve fully qualified domain names for the controllers and a Network Time Protocol (NTP) server.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Before you begin make sure that:

- A DNS server is configured.
- You know the addresses of a primary DNS server and a backup DNS server, in case the primary DNS server fails. These addresses can be IPv4 addresses or IPv6 addresses.

> ⓘ You need to send this command to both controllers. This command is controller-specific.

> ⓘ If you already configured the array's management ports with DHCP (Dynamic Host Configuration Protocol), and you have one or more DNS or NTP servers associated with the DHCP setup, then you do not need to manually configure DNS/NTP. In this case, the array should have already obtained the DNS/NTP server addresses automatically.

Syntax

```
set controller[a] DNSServers=(auto|(Address1 [Address2]))
```

Parameters

Parameter	Description
DNSServers	This parameter configures the DNS servers for the controller. Specify `auto` to use the DNS servers provided by DHCP. Otherwise, use a whitespace separated list of one or two DNS servers. > ⓘ The management Ethernet ports on the array can support IPv4 or IPv6 protocols simultaneously. The addresses may be an IPv4 address or an IPv6 address. If specifying more than one address, the address types do not need to match. If more than one address is specified, they will be used in the order they are specified (first is primary, second is backup).
AddressX	IPv4Address|IPv6Address

Examples

```
set controller[a] DNSServers=auto;
set controller[a] DNSServers=(192.168.1.1);
set controller[b] DNSServers=(192.168.1.1 192.168.1.105);
set controller[b] DNSServers=(2001:0db8:85a3:0000:0000:8a2e:0370:7334
192.168.1.1)
```

Minimum firmware level

8.25

Set controller host port properties

The `set controller hostPort` command changes the network properties for the following types of host ports: iSCSI, iSER, NVMe over InfiniBand, and NVMe over RoCE. Property changes include IPv4 and IPv6 properties, port speed, and maximum frame payload.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

(i) | This command replaces the deprecated Set iSCSI host port networking properties command.

Syntax

```
set controller [(a|b)] hostPort ["portLabel"[, "physical"|"virtual"]]
    (IPV4Address=(0-255).(0-255).(0-255).(0-255) |
    IPv6LocalAddress=(FE80):(0000):(0000):(0000):(0-FFFF):(0-FFFF):(0-
FFFF):(0-FFFF) |
    IPv6RoutableAddress=(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-
FFFF):(0-FFFF):(0-FFFF) |
    IPv6RouterAddress=(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-
FFFF):(0-FFFF):(0-FFFF) |
    enableIPv4=(TRUE | FALSE) |
    enableIPv6=(TRUE | FALSE) |
    enableIPv4Vlan=(TRUE | FALSE) |
    enableIPv6Vlan=(TRUE | FALSE) |
    enableIPv4Priority=(TRUE | FALSE) |
    enableIPv6Priority=(TRUE | FALSE) |
    fecMode=(auto:none:reedSolomon:fireCode) |
    IPv4ConfigurationMethod=(static | dhcp) |
    IPv6ConfigurationMethod=(static | auto) |
    IPv4GatewayIP=(0-255).(0-255).(0-255).(0-255) |
    IPv6HopLimit=[0-255] |
    IPv6NdDetectDuplicateAddress=[0-255] |
    IPv6NdReachableTime=[0-65535] |
    IPv6NdRetransmitTime=[0-65535] |
    IPv6NdTimeOut=[0-65535] |
    IPv4Priority=[0-7] |
    IPv6Priority=[0-7] |
    IPv4SubnetMask=(0-255).(0-255).(0-255).(0-255) |
    IPv4VlanId=[1-4094] |
    IPv6VlanId=[1-4094] |
    maxFramePayload=[1500-9000] |
    tcpListeningPort=(3260 | [49152-65535]) |
    portSpeed=(autoNegotiate | 10 | 25 | 40 | 50 | 100))
```

Parameters

Parameter	Description
`controller`	Allows you to specify the controller for which you want to define properties.

Parameter	Description
`hostPort`	Allows you to specify the host port label for which you want to define properties. For 200 GB Host Ports only, you can specify `physical` or `virtual` as parameters. ⓘ If you do not specify a value for your 200 GB host port connection, the `physical` parameter is set by default.
`IPV4Address`	Allows you to enter the address in this format: (0-255).(0-255).(0-255).(0-255).
`IPV6LocalAddress`	Allows you to enter the address in this format: (FE80):(0000):(0000):(0000): (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF).
`IPv6RoutableAddress`	Allows you to enter the address in this format: (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF).
`IPV6RouterAddress`	Allows you to enter the address in this format: (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF).
`enableIPV4`	Allows you to enable IPv4.
`enableIPV6`	Allows you to enable IPv6. The IPv6 address space is 128 bits. It is represented by eight 16-bit hexadecimal blocks separated by colons.
`enableIPv4Vlan`	Allows you to enable IPv4 VLAN. A VLAN is a logical network that behaves like it is physically separate from other physical and virtual local area networks (LANs) supported by the same switches, the same routers, or both.
`enableIPv6Vlan`	Allows you to enable IPv6 VLAN. A VLAN is a logical network that behaves like it is physically separate from other physical and virtual local area networks (LANs) supported by the same switches, the same routers, or both.

Parameter	Description
enableIPv4Priority	Allows you to enable the parameter that determines the priority of accessing the network. In a shared local area network (LAN) environment, such as Ethernet, many stations might contend for access to the network. Access is on a first-come, first-served basis. Two stations might try to access the network at the same time, which causes both stations to back off and wait before trying again. This process is minimized for switched Ethernet, where only one station is connected to a switch port.
enableIPv6Priority	Allows you to enable the parameter that determines the priority of accessing the network. In a shared local area network (LAN) environment, such as Ethernet, many stations might contend for access to the network. Access is on a first-come, first-served basis. Two stations might try to access the network at the same time, which causes both stations to back off and wait before trying again. This process is minimized for switched Ethernet, where only one station is connected to a switch port.
fecMode	Allows you to set the FEC mode for the host port to one of the following options: • auto • none • reedSolomon • fireCode
IPv4ConfigurationMethod	Allows you to set IPv4 static or DHCP addressing.
IPv6ConfigurationMethod	Allows you to set IPv6 static or DHCP addressing.
IPv4GatewayIP	Allows you to enter the gateway address in this format: (0-255).(0-255).(0-255).(0-255).
IPv6HopLimit	Allows you to configure the maximum number of hops an IPv6 packet can traverse. The default value is 64.
IPv6NdDetectDuplicateAddress	Allows you to set the number of neighbor-solicitation messages to send in trying to determine IP address uniqueness.

Parameter	Description
`IPv6NdReachableTime`	Allows you to set the amount of time, in milliseconds, that a remote IPv6 node is considered reachable. The default value is 30000 milliseconds.
`IPv6NdRetransmitTime`	Allows you to set the amount of time, in milliseconds, to continue to retransmit a packet to an IPv6 node. The default value is 1000 milliseconds.
`IPv6NdTimeOut`	Allows you to set the timeout value, in milliseconds, for an IPv6 node. The default value is 30000 milliseconds.
`IPv4Priority`	Allows you to set the priority assignment for IPv4 packets.
`IPv6Priority`	Allows you to set the priority assignment for IPv6 packets.
`IPv4SubnetMask`	Allows you to enter the subnet mask address in this format: (0-255).(0-255).(0-255).(0-255).
`IPv4VlanId`	Allows you to set the IPv4 VLAN id.
`IPv6VlanId`	Allows you to set the IPv6 VLAN id.
`maxFramePayload`	Allows you to set the maximum size of a packet or frame that is sent in a network. The payload portion of a standard Ethernet frame is set to 1500, and a jumbo Ethernet frame is set to 9000. When using jumbo frames, all the devices that are in the network path should be able to handle the larger frame size. The default value is 1500 bytes per frame. (i) To ensure best performance in an NVMe over RoCE environment, configure a frame size of 4200.
`tcpListeningPort`	Allows you to set the TCP port number that is used to listen for iSCSI logins from initiators. The default port is 3260.

Parameter	Description
`portSpeed`	Allows you to set the speed, in megabits per second (Mb/s), for which the port should be communicating. ⓘ This parameter is only supported with a 25 Gbps iSCSI host interface card and a 100 Gbps Ethernet host interface card. For a 25 Gbps iSCSI host interface card, changing the speed of one port changes the speed of all four ports on the card. The allowable options in this case are 10 or 25. For a 100 Gbps Ethernet host interface card, new in release 8.50, changing the speed of one port doesn't affect the other ports on the card. The allowable options in the latter case are autoNegotiate, 10, 25, 40, 50, or 100GbE.

Parameter support by host port type

Parameter support varies by host port type (iSCSI, iSER, NVMe over InfiniBand, or NVMe over RoCE), as described in the following table:

Parameter	iSCSI	iSER	NVMe over InfiniBand	NVMe over RoCE
`IPV4Address`	Yes	Yes	Yes	Yes
`IPV6LocalAddress`	Yes			Yes
`IPv6RoutableAddress`	Yes			Yes
`IPV6RouterAddress`	Yes			Yes
`enableIPV4`	Yes			Yes
`enableIPV6`	Yes			Yes
`enableIPv4Vlan`	Yes			No
`enableIPv6Vlan`	Yes			No

Parameter	iSCSI	iSER	NVMe over InfiniBand	NVMe over RoCE
`enableIPv4Priority`	Yes			No
`enableIPv6Priority`	Yes			No
`IPv4ConfigurationMethod`	Yes			Yes
`IPv6ConfigurationMethod`	Yes			Yes
`IPv4GatewayIP`	Yes			Yes
`IPv6HopLimit`	Yes			
`IPv6NdDetectDuplicateAddress`	Yes			
`IPv6NdReachableTime`	Yes			
`IPv6NdRetransmitTime`	Yes			
`IPv6NdTimeOut`	Yes			
`IPv4Priority`	Yes			No
`IPv6Priority`	Yes			No
`IPv4SubnetMask`	Yes			Yes
`IPv4VlanId`	Yes			No
`IPv6VlanId`	Yes			No
`maxFramePayload`	Yes			Yes
`tcpListeningPort`	Yes			

Parameter	iSCSI	iSER	NVMe over InfiniBand	NVMe over RoCE
`portSpeed`	Yes			Yes

Minimum firmware level

8.41

8.50 - added information about the NVMe over RoCE environment.

11.70.1 added the `fecMode` parameter.

Set iSCSI host port networking properties

The `set controller iscsiHostPort` command changes the network properties for a host port, including IPv4 and IPv6 properties, port speed, and maximum frame payload.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

> (i) This command is deprecated and is replaced by the Set controller host port properties command.

Syntax

```
set controller [(a|b)]
iscsiHostPort [portLabel]
```

```
([IPv4Address=(0-255).(0-255).(0-255).(0-255) ]|
```

```
[IPv6LocalAddress=(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF):  (0-FFFF):(0-
FFFF):(0-FFFF):(0-FFFF)] |
```

```
[IPv6RoutableAddress=(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF):  (0-FFFF):(0-
FFFF):(0-FFFF):(0-FFFF) ]|
```

```
[IPv6RouterAddress=(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-
FFFF):(0-FFFF):(0-FFFF) ]|
```

```
[enableIPv4=(TRUE | FALSE) | enableIPv6=(TRUE | FALSE)] |
```

```
[enableIPv4Vlan=(TRUE | FALSE) | enableIPv6Vlan=(TRUE | FALSE)] |
```

```
[enableIPv4Priority=(TRUE | FALSE) | enableIPv6Priority=(TRUE | FALSE) ]|
```

```
[IPv4ConfigurationMethod=(static | dhcp) ]|
```

```
[IPv6ConfigurationMethod=(static | auto)] |
```

```
[IPv4GatewayIP=(TRUE | FALSE)] |
```

```
[IPv6HopLimit=[0-255] ]|
```

```
[IPv6NdDetectDuplicateAddress=[0-256] ]|
```

```
[IPv6NdReachableTime=[0-65535] ]|
```

```
[IPv6NdRetransmitTime=[0-65535]] |
```

```
[IPv6NdTimeOut=[0-65535] ]|
```

```
[IPv4Priority=[0-7] | IPv6Priority=[0-7] ]|
```

```
[IPv4SubnetMask=(0-255).(0-255).(0-255).(0-255)] |
```

```
[IPv4VlanId=[1-4094] | IPv6VlanId=[1-4094]] |
```

```
[maxFramePayload=[*frameSize*]] |
```

```
[tcpListeningPort=[3260, 49152-65536] ]|
```

```
[portSpeed=[(10 | 25)])
```

Parameters

Parameter	Description
enableIPV4	Available options are: • TRUE • FALSE
enableIPV4Priority	Select this option to enable the parameter that determines the priority of accessing the network. Use the slider to select a priority between 1 and 7. In a shared local area network (LAN) environment, such as Ethernet, many stations might contend for access to the network. Access is on a first-come, first-served basis. Two stations might try to access the network at the same time, which causes both stations to back off and wait before trying again. This process is minimized for switched Ethernet, where only one station is connected to a switch port. Available options are: • TRUE • FALSE (i) This parameter is not supported in an NVMe over RoCE environment.

Parameter	Description
`enableIPV4Vlan`	A VLAN is a logical network that behaves like it is physically separate from other physical and virtual local area networks (LANs) supported by the same switches, the same routers, or both. Available options are: • TRUE • FALSE > ⓘ This parameter is not supported in an NVMe over RoCE environment.
`enableIPV6`	The IPv6 address space is 128 bits. It is represented by eight 16-bit hexadecimal blocks separated by colons. Available options are: • TRUE • FALSE
`enableIPV6Priority`	Select this option to enable the parameter that determines the priority of accessing the network. Use the slider to select a priority between 1 and 7. In a shared local area network (LAN) environment, such as Ethernet, many stations might contend for access to the network. Access is on a first-come, first-served basis. Two stations might try to access the network at the same time, which causes both stations to back off and wait before trying again. This process is minimized for switched Ethernet, where only one station is connected to a switch port. Available options are: • TRUE • FALSE > ⓘ This parameter is not supported in an NVMe over RoCE environment.

Parameter	Description
enableIPV6Vlan	A VLAN is a logical network that behaves like it is physically separate from other physical and virtual local area networks (LANs) supported by the same switches, the same routers, or both. Available options are: • TRUE • FALSE ⓘ This parameter is not supported in an NVMe over RoCE environment.
IPV4Address	Enter the address in this format: (0-255).(0-255).(0-255).(0-255)
IPV4ConfigurationMethod	Available options are: • static • dhcp
IPV4GatewayIP	Available options are: • TRUE • FALSE
IPV4Priority	Enter a value between 0 and 7. ⓘ This parameter is not supported in an NVMe over RoCE environment.
IPV4SubnetMask	Enter the subnet mask in this format: (0-255).(0-255).(0-255).(0-255)
IPV4VlanId	Enter a value between 1 and 4094. ⓘ This parameter is not supported in an NVMe over RoCE environment.
IPV6ConfigurationMethod	Available options are: • static • auto

Parameter	Description
`IPV6HopLimit`	This option configures the maximum number of hops an IPv6 packet can traverse. The default value is `64`.
`IPV6LocalAddress`	Enter the address is this format: (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF)
`IPV6NdDetectDuplicateAddress`	Enter a value between 0 and 256.
`IPV6NdReachableTime`	This option configures the amount of time that a remote IPv6 mode is considered reachable. Specify a value, in milliseconds, between 0 - 65535. The default value is `30000` milliseconds.
`IPV6NdRetransmitTime`	This option configures the amount of time to continue to retransmit a packet to an IPv6 node. Specify a value, in milliseconds, between 0 - 65535. The default value is `1000` milliseconds.
`IPV6NdTimeOut`	This option configures the timeout value for an IPv6 node. Specify a value, in milliseconds, between 0 - 65535. The default value is `30000` milliseconds.
`IPV6Priority`	Enter a value between 0 and 7. (i) This parameter is not supported in an NVMe over RoCE environment.
`IPV6RoutableAddress`	Enter the address is this format: (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF)
`IPV6RouterAddress`	Enter the address is this format: (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF)
`IPV6VlanId`	Enter a value between 1 and 4094. (i) This parameter is not supported in an NVMe over RoCE environment.

Parameter	Description
`maxFramePayload`	The `maxFramePayload` option is shared between IPv4 and IPv6 and is the largest packet or frame that can be sent in a network. The payload portion of a standard Ethernet frame is set to `1500`, and a jumbo Ethernet frame is set to `9000`. When using jumbo frames, all of the devices that are in the network path should be capable of handling the larger frame size. The default value is 1500 bytes per frame. You must enter a value between 1500 and 9000.
`portSpeed`	Available options are: • 10 • 25 ⓘ This option is only valid for the 25Gb/s Ethernet host interface card. Changing the speed of one port changes the speed of all four ports on the card. ⓘ Values for the `portSpeed` option of the `iscsiHostPort` parameter are in megabits per second (Mb/s).
`tcpListeningPort`	The listening port is the TCP port number that the controller uses to listen for iSCSI logins from host iSCSI initiators. The default listening port is 3260. You must enter 3260 or a value between 49152 and 65535.

Identifying an iSCSI host port label

You must specify a label for the host port. Follow these steps to specify the host port label:

1. If you do not know the port label for the iSCSI host port, run the `show controller` command.

2. In the Host interface section of the results, locate the host port you want to select.

    ⓘ   The port label is the complete value returned for the `Port` field.

3. Enclose the entire value of the port label in both quotes and square brackets: ["portLabel"]. For example, if the port label is `Ch 2`, specify the iSCSI host port as follows:

```
iscsiHostPort[\"ch 2\"]
```

If you are using a Windows command line and the label contains a pipe (|), the character should be escaped (using ^); otherwise, it will be interpreted as a command. For example, if the port label is `e0b|0b`, specify the iSCSI host port as follows:

```
iscsiHostPort[\"e0b^|0b\"]
```

For backward compatibility, the iscsiPortNumber, enclosed by braces [ ] rather than quotes and braces [" "] can still be used for E2700, E5600, or EF560 controllers (and other previous generations of E-Series or EF-Series controllers). For those controllers, valid values for iscsiPortNumber are as follows:

- For controllers with integrated host ports, the numbering is 3, 4, 5, or 6.
- For controllers with host ports on a host interface card only, the numbering is 1, 2, 3, or 4.

An example of the prior syntax is as follows:

```
iscsiHostPort[3]
```

Minimum firmware level

7.15 adds the new iSCSI host port options.

7.60 adds the `portSpeed` option.

8.10 revises the identification method for iSCSI host ports.

8.40 revises the `portSpeed` option of the `iscsiHostPort` parameter to note that it is only valid for the 25Gb/s Ethernet host interface card, and that changing the speed of one port changes the speed of all four ports on the card.

8.41 This command is deprecated.

Set controller NTP settings

The `set controller NTPServers` command sets the NTP settings for the controller so the controller can automatically synchronize the clocks with an external host using SNTP (Simple Network Time Protocol).

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

When this feature is enabled, the controller periodically queries the configured NTP server, and then uses the results to update its internal time-of-day clock. If only one controller has NTP enabled, the alternate controller periodically synchronizes its clock with the controller that has NTP enabled. If neither controller has NTP enabled, the controllers periodically synchronize their clocks with each other.

> ⓘ This command is controller-specific. It is not necessary to configure NTP on both controllers; however, doing so improves the array's ability to stay synchronized during hardware or communication failures.

> ⓘ If you configure NTP using a fully qualified domain name, you must also configure DNS on those controller(s) for the operation to succeed.See Set controller DNS Settings for more information.

Syntax

```
set controller(a|b) NTPServers=(disabled|auto|(Address1
[keyIdentifier=integerLiteral() keyType=stringLiteral()
passPhrase=stringLiteral()] [Address2 [keyIdentifier=integerLiteral()
keyType=stringLiteral() passPhrase=stringLiteral()]]))
```

Parameters

Parameter	Description
controller	The controller for which you want to change the NTP settings. Valid controller identifiers are a or b.

Parameter	Description

NTPServers	This parameter configures the NTP servers for the controller.
	
	• Specify `disabled` to turn off NTP support.
	
	• Specify `auto` to use the NTP server addresses provided by a DHCP server.
	
	  ⓘ This option should be used only if at least one management port on the controller is set to get interface parameters via DHCP, and at least one NTP server is configured on the DHCP server.
	
	• Otherwise, specify a whitespace separated list of one or two NTP servers. The addresses may be a domain name, IPv4 address, or IPv6 address. If specifying more than one address, the address types do not need to match. If more than one address is specified, they will be used in the order they are specified (first is primary, second is backup).
	
	  ⓘ Surround the NTP server name with quotes, as shown in the Examples section.

Address	"DomainName"|IPv4Address|IPv6Address ⓘ If a domain name is specified, a DNS server must also be configured to allow the controller to resolve the server IP address.
keyIdentifier keyType passPhrase	Optionally, these parameters provide the key credentials for enabling NTP authentication: • `key Identifier` is an integer from 0 to 65535. • `keyType` is one of the following: none, sha1, sha224, sha256, sha384 or sha512. • `passPhrase` is either a hex digit (0-9, with a-f allowed), which is exactly 40 digits long entered as a stringLiteral, or an alphanumeric character string up to 20 bytes long.

Examples

```
set controller[a] NTPServers=disabled;
set controller[a] NTPServers=auto;
set controller[a] NTPServers=("0.pool.ntp.org" keyIdentifier=3
keyType="sha1" passPhrase="SomePassword1" "1.us.pool.ntp.org"
keyIdentifier=3 keyType="sha1" passPhrase=" SomePassword1");
set controller[b] NTPServers=(192.168.1.105 keyIdentifier=3 keyType="sha1"
passPhrase=" SomePassword1" "1.us.pool.ntp.org");
set controller[b] NTPServers=(set controller[b]
NTPServers=(2001:0db8:85a3:0000:0000:8a2e:0370:7334 keyIdentifier=3
keyType="sha1" passPhrase=" SomePassword1");
```

Minimum firmware level

8.25

8.42 adds the key credential parameters for NTP authentication.

Set controller service action allowed indicator

The `set controller` command turns on or turns off the Service Action Allowed indicator light on a controller in a controller tray or a controller-drive tray.

Supported Arrays

This command applies to any individual storage array, including the E2700 and E5600 arrays.

Context

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.)

> ⓘ This command is valid only for E2700, E5600, or EF560 (and other previous generations of E-Series or EF-Series controllers). The E2800 controller tray has a single Attention indicator that will illuminate only when 1) there is a failure, and 2) the component that failed can be safely removed.

Syntax

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

Parameters

Parameter	Description
controller	The controller that has the Service Action Allowed indicator light that you want to turn on or turn off. Valid controller identifiers are a or b , where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]). If you do not specify a controller, the controller firmware returns a syntax error.
serviceAllowedIndicator	The setting to turn on or turn off the Service Action Allowed indicator light. To turn on the Service Action Allowed indicator light, set this parameter to on. To turn off the Service Action Allowed indicator light, set this parameter to off.

Minimum firmware level

6.14

Set controller

The `set controller` command defines the attributes for the controllers.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

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 [portLabel] iscsiHostPortOptions]
[rloginEnabled=(TRUE | FALSE)]
[serviceAllowedIndicator=(on | off)]
```

Parameters

Parameter	Description
`controller`	The controller for which you want to define properties. Valid controller identifiers are `a` or `b`, where `a` is the controller in slot A, and `b` is the controller in slot B. Enclose the identifier for the controller in square brackets ([ ]). If you do not specify a controller, the firmware for the controller returns a syntax error.
`availability`	The mode for the controller, which you can set to `online`, `offline`, or `serviceMode` (service).
`ethernetPort`	The attributes (options) for the management Ethernet ports. The entries to support this parameter are listed in the Syntax Element Statement Data table that follows. Many settings are possible, including setting the IP address, the gateway address, and the subnet mask address.
`globalNVSRAMByte`	A portion of the controller NVSRAM. Specify the region to be modified using the starting byte offset within the region and the byte value or bit value of the new data to be stored into the NVSRAM.
`hostNVSRAMByte`	The NVSRAM for the host-specific region. The setting specifies the host index for the specific host, the starting offset within the region, the number of bytes, and the byte value or bit value of the new data to be stored into the NVSRAM.
`IPv4GatewayIP`	The IP address of the node that provides the interface to the network. The address format for the IPv4 gateway is **(0—255).(0—255).(0—255).(0—255)**
`IPv6RouterAddress`	The IP address of IPv6 router that connects two or more logical subnets. The address format for the IPv6 router is `(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF):` `(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF).`
`iscsiHostPort`	This parameter enables you to set options for the iSCSI ports on the controller. Enter the iSCSI port label or number and then select the options for that port. For more information, see the *Identifying an iSCSI host port label* section below.

Parameter	Description
`rloginEnabled`	The setting for whether the remote login feature is turned on or turned off. To turn on the remote login feature, set this parameter to `TRUE`. To turn off the remote login feature, set this parameter to `FALSE`.
`serviceAllowedIndicator`	The setting for whether the Service Action Allowed indicator light is turned on or turned off. To turn on the Service Action Allowed indicator light, set this parameter to `on`. To turn off the Service Action Allowed indicator light, set this parameter to `off`.

Identifying an iSCSI host port label

You must specify a label for the host port. Follow these steps to specify the host port label:

1. If you do not know the port label for the iSCSI host port, run the `show controller` command.

2. In the Host interface section of the results, locate the host port you want to select.

> (i) The port label is the complete value returned for the `Port` field.

3. Enclose the entire value of the port label in both quotes and square brackets: ["portLabel"]. For example, if the port label is `Ch 2`, specify the iSCSI host port as follows:

```
iscsiHostPort[\"ch 2\"]
```

> (i) If you are using a Windows command line and the label contains a pipe (|), the character should be escaped (using ^); otherwise, it will be interpreted as a command. For example, if the port label is `e0b|0b`, specify the iSCSI host port as follows:

```
iscsiHostPort[\"e0b^|0b\"]
```

> (i) For backward compatibility, the iscsiPortNumber, enclosed by braces [ ] rather than quotes and braces [" "] can still be used for E2700, E5600, or EF560 controllers (and other previous generations of E-Series or EF-Series controllers). For those controllers, valid values for iscsiPortNumber are as follows:
>
> • For controllers with integrated host ports, the numbering is 3, 4, 5, or 6.
>
> • For controllers with host ports on a host interface card only, the numbering is 1, 2, 3, or 4.
>
> An example of the prior syntax is as follows:
>
> ```
> iscsiHostPort[3]
> ```

Options for the ethernetPort parameter

```
enableIPv4=(TRUE | FALSE) |
```

```
enableIPv6=(TRUE | FALSE) |
```

```
IPv6LocalAddress=(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-
FFFF):(0-FFFF):(0-FFFF) |
```

```
IPv6RoutableAddress=(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-
FFFF):(0-FFFF):(0-FFFF) |
```

```
IPv4Address=(0-255).(0-255).(0-255).(0-255) |
```

```
IPv4ConfigurationMethod=[(static | dhcp)] |
```

```
IPv4SubnetMask=(0-255).(0-255).(0-255).(0-255) |
```

```
duplexMode=(TRUE | FALSE) |
```

```
portSpeed=[(autoNegotiate | 10 | 100 | 1000)]
```

Options for the iSCSIHostPort parameter

```
IPv4Address=(0-255).(0-255).(0-255).(0-255) |
```

```
IPv6LocalAddress=(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-
FFFF):(0-FFFF):(0-FFFF) |
```

```
IPv6RoutableAddress=(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF): (0-FFFF):(0-
FFFF):(0-FFFF):(0-FFFF) |
```

```
IPv6RouterAddress=(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF):(0-FFFF):(0-
FFFF):(0-FFFF):(0-FFFF) |
```

```
enableIPv4=(TRUE | FALSE) | enableIPv6=(TRUE | FALSE) |
```

```
enableIPv4Vlan=(TRUE | FALSE) | enableIPv6Vlan=(TRUE | FALSE) |
```

```
enableIPv4Priority=(TRUE | FALSE) | enableIPv6Priority=(TRUE | FALSE) |
```

```
IPv4ConfigurationMethod=(static | dhcp) |
```

```
IPv6ConfigurationMethod=(static | auto) |
```

```
IPv4GatewayIP=(TRUE | FALSE) |
```

```
IPv6HopLimit=[0-255] |
```

```
IPv6NdDetectDuplicateAddress=[0-256] |
```

```
IPv6NdReachableTime=[0-65535] |
```

```
IPv6NdRetransmitTime=[0-65535] |
```

```
IPv6NdTimeOut=[0-65535] |
```

```
IPv4Priority=[0-7] | IPv6Priority=[0-7] |
```

```
IPv4SubnetMask=(0-255).(0-255).(0-255).(0-255) |
```

```
IPv4VlanId=[1-4094] | IPv6VlanId=[1-4094] |
```

```
maxFramePayload=[*frameSize*] |
```

```
tcpListeningPort=[3260, 49152-65536] |
```

```
portSpeed=[( 10 | 25)]
```

Notes

> ⓘ   Before firmware version 7.75, the `set controller` command supported an `NVSRAMByte` parameter. The `NVSRAMByte` parameter is deprecated and must be replaced with either the `hostNVSRAMByte` parameter or the `globalNVSRAMByte` parameter.

When you use this command, you can specify one or more of the parameters. You do not need to use all of the parameters.

Setting the `availability` parameter to `serviceMode` causes the alternate controller to take ownership of all of the volumes. The specified controller no longer has any volumes and refuses to take ownership of any more volumes. Service mode is persistent across reset cycles and power cycles until the `availability` parameter is set to `online`.

Use the `show controller NVSRAM` command to show the NVSRAM information. Before making any changes to the NVSRAM, contact technical support to learn what regions of the NVSRAM you can modify.

When the `duplexMode` option is set to `TRUE`, the selected Ethernet port is set to full duplex. The default value is half duplex (the `duplexMode` parameter is set to `FALSE`).

To make sure that the IPv4 settings or the IPv6 settings are applied, you must set these `iscsiHostPort` options:

* `enableIPV4= TRUE`
* `enableIPV6= TRUE`

The IPv6 address space is 128 bits. It is represented by eight 16-bit hexadecimal blocks separated by colons.

The `maxFramePayload` option is shared between IPv4 and IPv6. The payload portion of a standard Ethernet frame is set to `1500`, and a jumbo Ethernet frame is set to `9000`. When using jumbo frames, all of the devices that are in the network path should be capable of handling the larger frame size.

The `portSpeed` option is expressed as megabits per second (Mb/s).

Values for the `portSpeed` option of the `iscsiHostPort` parameter are in megabits per second (Mb/s).

The following values are the default values for the `iscsiHostOptions`:

- The `IPv6HopLimit` option is `64`.

- The `IPv6NdReachableTime` option is `30000` milliseconds.

- The `IPv6NdRetransmitTime` option is `1000` milliseconds.

- The `IPv6NdTimeOut` option is `30000` milliseconds.

- The `tcpListeningPort` option is `3260`.

Minimum firmware level

7.15 removes the `bootp` parameter, and adds the new Ethernet port options and the new iSCSI host port options.

7.50 moves the `IPV4Gateway` parameter and the `IPV6RouterAddress` parameter from the iSCSI host port options to the command.

7.60 adds the `portSpeed` option of the `iscsiHostPort` parameter.

7.75 deprecates the `NVSRAMByte` parameter.

8.10 revises the identification method for iSCSI host ports.

Set disk pool (modify disk pool)

The `set diskPool` command adds capacity to a disk pool (Dynamic Capacity Expansion or DCE) or changes the controller ownership for the entire disk pool.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

These two operations are mutually exclusive.

Syntax

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

Parameters

Parameter	Description
`diskPool`	The name of the disk pool that you want to modify. Enclose the disk pool name in square brackets ([ ]). If the disk pool name has special characters or consists only of numbers, you must enclose the name in double quotation marks (" ") inside square brackets.
`addDrives`	The drives that you want to add to the disk pool. For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value of the drive that you want to add. For low-capacity drive trays, specify the tray ID value and the slot ID value of the drive that you want to add. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. Slot ID values are `1` to `24`. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]). ⓘ This feature has a 12-drive limit.
`addCapacity`	The amount of additional storage capacity that you want to add to the disk pool. This parameter automatically selects the drives to meet the capacity that you want to add. The capacity is defined in units of `bytes`, `KB`, `MB`, `GB`, or `TB`.
`owner`	The controller that owns the disk pool. Valid controller identifiers are `a` or `b`, where `a` is the controller in slot A, and `b` is the controller in slot B. If you do not specify an owner, the controller firmware determines the owner.

Notes

Volumes already in the disk pool remain on line and available for I/O operations while you add new drives. The disk pool must be in the Complete state before you add capacity. If the disk pool is not in the Complete state, run the `set diskPool complete` command before you add new drives.

To add capacity, specify individual drives with the `addDrives` parameter, or an amount of drive capacity with the `addCapacity` parameter. If you use `addDrives`, the host must validate the drive set before allowing the operation to run. If you use the `addCapacity` parameter, the capacity you specify is taken as the minimum capacity to be added. The candidate drives with the best match for quality of service and a capacity greater than or equal to what you specified are used. If no candidate is available with a minimum match, or the drive list specified is not available or attribute mismatches are detected, the operation fails.

You also can use this command to change ownership of a disk pool from one controller in the storage array to the other. Using this command to change ownership is mutually exclusive with using the command to add drives or to add capacity.

Minimum firmware level

7.83

Set disk pool

The `set diskPool` command sets the attributes associated with a disk pool based on the specified parameters.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

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]
```

Parameters

Parameter	Description
`diskPool`	The name of the disk pool for which you are setting attributes. Enclose the disk pool name in square brackets ([ ]). If the disk pool name has special characters or consists only of numbers, you must enclose the disk pool name in double quotation marks (" ") inside square brackets.

Parameter	Description

`diskPools`	The names of several disk pools for which you want to set attributes. Enter the names of the disk pools using these rules:
	
	   • Enclose all of the names in square brackets ([ ]).
	   • Separate each of the names with a space.
	
	If the disk pool names have special characters or numbers, enter the names using these rules:
	
	   • 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.

`allDiskPools`	This parameter sets attributes for all of the disk pools in the storage array.
`reservedDriveCount`	This parameter reserves space on every drive in the disk pool, to be used exclusively for reconstruction of failed drives. Each unit in this count represents the capacity to reconstruct one failed drive to the remainder of the disk pool.
`warningThreshold`	The percentage of disk pool capacity at which you receive a warning alert that the disk pool is nearing full. Use integer values. For example, a value of 70 means 70 percent. For best operation, the value for this parameter must be less than the value for the `criticalThreshold` parameter. Valid values are from 0 to 100. The default value is 50. Setting this parameter to `0` disables warning alerts. If you set this to `default`, the warning alert threshold value is determined by the controller firmware.

Parameter	Description
`criticalThreshold`	The percentage of disk pool capacity at which you receive a critical alert that the disk pool is nearing full. Use integer values. For example, a value of 70 means 70 percent. For best operation, the value for this parameter must be greater than the value for the `warningThreshold` parameter. Valid values are from 0 to 100. The default value is 85 percent. Setting this parameter to `0` disables both warning alerts and critical alerts. If you set this to `default`, the critical alert threshold value is determined by the controller firmware.
`criticalPriority`	The priority for reconstruction operations for critical events on the disk pool. For example, disk pool reconstruction after at least two drive failures. Valid values are `highest`, `high`, `medium`, `low`, and `lowest`. The default value is `highest`.
`degradedPriority`	The priority for reconstruction operations for degraded events on the disk pool. For example, disk pool reconstruction after at one drive failure. Valid values are `highest`, `high`, `medium`, `low`, and `lowest`. The default value is `high`.
`backgroundPriority`	The priority for background operations on the disk pool. Valid values are `highest`, `high`, `medium`, `low`, and `lowest`. The default value is `low`.
`userLabel`	The new name that you want to give the disk pool. Enclose the disk pool name in double quotation marks (" ").

Notes

Each disk pool name must be unique. You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the user label. User labels can have a maximum of 30 characters.

You can specify an arbitrary set of disk pools. If you select multiple disk pools, setting a value for the `userLabel` causes an error.

If you do not specify a value for an optional parameter, a default value is assigned.

Disk pool alert thresholds

Each disk pool has two progressively severe levels of alerts to inform users when the storage capacity of the disk pool is approaching full. The threshold for an alert is a percent of the used capacity to the total usable capacity in the disk pool. The alerts are:

- Warning — This is the first level of alert that the used capacity in a disk pool is approaching full. When the threshold for the warning alert is reached a Needs Attention condition is generated and an event is posted to the storage management software. The warning threshold is superseded by the critical threshold. The default warning threshold is 50 percent.
- Critical — This is the most severe level of alert that the used capacity in a disk pool is approaching full. When the threshold for the critical alert is reached a Needs Attention condition is generated and an event is posted to the storage management software. The warning threshold is superseded by the critical threshold. The default threshold for the critical alert is 85 percent.

To be effective, the value for a warning alert must always be less than the value for a critical alert. If the value for the warning alert is the same as the value for a critical alert, only the critical alert is sent.

Disk pool background operations

Disk pools support these background operations:

- Reconstruction
- Instant Availability Format (IAF)
- Format
- Dynamic Capacity Expansion (DCE)
- Dynamic Capacity Reduction (DCR)
- Dynamic Volume Expansion (DVE) (For disk pools, DVE is actually not a background operation, but DVE is supported as a synchronous operation.)

Disk pools do not queue background commands. You can start several background commands sequentially, but starting more than one background operation at a time delays the completion of commands that you started previously. The relative priority levels for the supported background operations are:

1. Reconstruction
2. Format
3. IAF
4. DCE/DCR

Minimum firmware level

7.83

Set drive hot spare

The `set drive hotSpare` command assigns or de-assigns one or more drives as a hot spare.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
drive or drives	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are 0 to 99. Drawer ID values are 1 to 5. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).
hotSpare	The setting to assign the drive as the hot spare. To assign the drive as the hot spare, set this parameter to TRUE. To remove a hot spare assignment from a drive, set this parameter to FALSE.

Notes

The drive parameter supports 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.

6.10

7.60 adds the `drawerID` user input.

Set foreign drive to native

The `set drive nativeState` command adds the missing (foreign) drives back into their original volume group and to make them part of the volume group in the new storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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.

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.

> ⓘ **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
```

Parameters

Parameter	Description
`drive` or `drives`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800, E5700, EF600, and EF300 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).
`allDrives`	The setting to select all of the drives.

Notes

The `drive` parameter supports 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.

Minimum firmware level

7.10

7.60 adds the `drawerID` user input.

Set drive state

The `set drive operationalState` command sets a drive to the Failed state.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

To return a drive to the Optimal state, use the `revive drive` command.

Syntax

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

Parameter

Parameter	Description
`drive`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).

Notes

The `drive` parameter supports 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.

Minimum firmware level

5.20

7.60 adds the `drawerID` user input.

Set FIPS drive security identifier

The `set drive securityID` command is used to reset a FIPS drive back to the original manufacturer settings.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

> ⓘ This command resets a FIPS drive back to the original manufacturer settings and erases all existing drive data. This operation is completely irreversible. This may be necessary if the drive is locked due to an invalid or missing security key file or unknown pass phrase. All existing drive data will be erased.

To erase an FDE drive, use the `start secureErase` command.

Syntax

```
set drive [trayID,[drawerID,]slotID] securityID="string"
```

Parameters

Parameter	Description
`drive`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).
`securityID`	The security ID of the drive to erase, in string form. This string can have a maximum of 32 characters. The form of the security ID will vary by manufacturer. ⓘ To find the security ID, remove the drive and read the security ID on the canister label.

Notes

The `drive` parameter supports 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.

Example

```
set drive [1,31,4] securityID="V2zdvLTdGWdWyTALGHns";
```

Minimum firmware level

8.25

Set drive service action allowed indicator

The `set drive serviceAllowedIndicator` command turns on or turns off the Service Action Allowed indicator light on a drive or drives in drive trays that support the Service Action Allowed indicator light feature.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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)
```

Parameters

Parameter	Description
`drive` or `drives`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).
`serviceAllowedIndicator`	The setting to turn on or turn off the Service Action Allowed indicator light. To turn on the Service Action Allowed indicator light, set this parameter to `on`. To turn off the Service Action Allowed indicator light, set this parameter to `off`.

Notes

The `drive` parameter supports 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.

Minimum firmware level

6.16

7.60 adds the `drawerID` user input.

Set drive channel status

The `set driveChannel` command defines how the drive channel performs.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

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

Parameters

Parameter	Description
`driveChannel`	The identifier number of the drive channel for which you want to set the status. Valid drive channel values are 1, 2, 3, 4, 5, 6, 7, or 8. Enclose the drive channel number in square brackets ([ ]).
`status`	The condition of the drive channel. You can set the drive channel status to `optimal` or `degraded`.

Notes

Use the `optimal` option to move a degraded drive channel back to the Optimal state. Use the `degraded` option when the drive channel is experiencing problems, and the storage array requires additional time for data transfers.

Minimum firmware level

6.10

7.15 adds the update to the drive channel identifier.

Specify the Email (SMTP) delivery method

The `set storageArray autoSupport deliveryMethod` command sets up the delivery method for sending AutoSupport messages to email (SMTP).

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
set storageArray autoSupport deliveryMethod=email
mailRelayServer="serverAddress" senderEmail="emailAddress"
```

Parameters

Parameter	Description
deliveryMethod	Allows the user to specify the delivery method for AutoSupport collection. Valid choices are: • email • HTTP • HTTPS (i) If the email method is configured, then the AutoSupport OnDemand and Remote Diagnostics will be disabled.
mailRelayServer	Allows the user to specify the mail relay server for the AutoSupport collection.
senderEmail	Allows the user to specify send email address for the AutoSupport collection.

Examples

```
SMcli -n Array1 -c "set storageArray autoSupportConfig
deliveryMethod=email mailRelayServer=\"mailserver.company.com\"
senderEmail=\"user@company.com\";"

SMcli completed successfully.
```

Verification

Send a test message using the *start storageArray autoSupport deliveryTest* command to verify that your delivery methods are set up correctly.

Minimum Firmware Level

8.40

Configure email alert settings

The set emailAlert command configures the email to send an email to a specified

technical support or organization. The email alert contains a summary of the event, detailed information about the affected storage, and customer contact information.

Supported Arrays

This command applies to the E2800, E5700, EF600, and EF300 storage arrays. However, you can use the command as an SMcli command, not a script command, for E2700 or E5600 arrays. In this case, the command applies to all of the arrays in the management domain.

Syntax

```
set emailAlert
    serverAddress="serverAddress" |
    serverEncryption=none | smtps | starttls |
    serverPort=port value |
    serverUsername="username" |
    serverPassword="password" |
    senderAddress="emailAddress" |
    additionalContactInfo="filename"  |
    (recipientAddresses=("emailAddress1" ... "emailAddressN") |
  addRecipientAddresses=("emailAddress1" ... "emailAddressN"))
```

Parameters

Parameter	Description
serverAddress	Allows you to set the email server address. The email server address can be a fully qualified domain name, IPv4 address, or IPv6 address.
serverEncryption	The encryption to be used to communicate with the server. The value may be one of the following: • *none* - No encryption • *smtps* - Create an SSL/TLS connection (implicit TLS) • *starttls* - Create an unencrypted connection and then establish an SSL/TLS session (explicit TLS)
serverPort	The TCP port to be used to connect to the server. The default value will depend on the encryption type. • *none* - Defaults to port 25 • *smtps* - Defaults to port 465 • *starttls* - Defaults to port 587

Parameter	Description
serverUsername	The user name to provide authentication credentials to the server. If the user name is specified, the password must also be specified.
serverPassword	The password to provide authentication credentials to the server. If the password is specified, the user name must also be specified.
senderAddress	Allows you to set the sender's email address.
additionalContactInfo	Allows you to provide the filename that contains the additional contact information to be used in the email alert.
recipientAddresses	Allows you to set one or more recipient email addresses. Using this set option will clear out existing email addresses. Enclose all of the names in parentheses. Enclose each of the names in double quotation marks (""). Separate each of the names with a space.
addRecipientAddresses	Allows you to add one or more recipient email addresses to the existing list. Enclose all of the names in parentheses. Enclose each of the names in double quotation marks (""). Separate each of the names with a space.

Examples

```
SMcli -n Array1 -c "set emailAlert
   serverAddress="email.server.domain.com"
    serverEncryption=("smtps") |
    serverPort="smtps" |
    serverUsername="username" |
    serverPassword="password" |
   senderAddress=no-reply@server.domain.com
   additionalContactInfo="C:\additionalInfo.txt"
   recipientAddresses=("person1@email.domain.com"
"person2@email.domain.com");"

 SMcli -n Array1 -c "set emailAlert
 addRecipientAddresses=("person3@netapp.com");"

 SMcli completed successfully.
```

Minimum firmware level

8.40

11.70.1 adds the `serverEncryption, serverPort, serverUsername,` and `serverPassword` parameters.

Set event alert filtering

The `set event alert` commands manage alert event notification by either disabling or enabling notification related to a specific alertable event. To prevent notification about a specific alertable event, you *block* it. To enable notification about a specific alertable event, you *unblock* it.

Supported Arrays

This command applies only to the E2700 and E5600 storage arrays.

Context

> (i) 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

Context

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, a notification is sent to a designated recipient when an alertable event occurs. That notification can be one or all of the following types:

- email
- syslog
- SNMP 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.

> (i) Blocking an event alert does not prevent the event from being posted to the system event log. All events continue to be posted to the event log.

> (i) Non-alertable events cannot be made alertable using this command.

Syntax to block an event alert

```
set blockEventAlert eventType
```

Syntax to unblock an event alert

```
set unBlockEventAlert eventType
```

Parameters

Parameter	Description
eventType	This parameter is the integer value for the event. Enter the event value in a hexadecimal format, for example, 0x280D. Always begin the hexadecimal value with **0x** to indicate that it is in hexadecimal format. If you do not use 0x, the value is interpreted as a decimal and converted to a hexadecimal value, before applying the block or unblock command. This can cause an incorrect event to be blocked or unblocked. An error is displayed if you enter an invalid event.

Minimum firmware level

8.10

Set host

The `set host` command assigns a host to a host group or moves a host to a different host group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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)
```

Parameters

Parameter	Description
host	The name of the host that you want to assign to a host group. Enclose the host name in square brackets ([ ]). If the host name has special characters or numbers, you must enclose the host name in double quotation marks (" ") inside square brackets.
hostGroup	The name of the host group to which you want to assign the host. (The following table defines how the command runs if the host does or does not have individual mappings.) Enclose the host group name in double quotation marks (" "). The defaultGroup option is the host group that contains the host to which the volume is mapped.
userLabel	The new host name. Enclose the host name in double quotation marks (" ").
hostType	The index label or number of the host type for the host port. Use the show storageArray hostTypeTable command to generate a list of available host type identifiers. If the host type has special characters, enclose the host type in double quotation marks (" ").

Host Group Parameter	Host Has Individual Mappings	Host Does Not Have Individual Mappings
hostGroupName	The host is removed from the present host group and is placed under the new host group defined by hostGroupName.	The host is removed from the present host group and is placed under the new host group defined by hostGroupName.
none	The host is removed from the host group as an independent partition and is placed under the root node.	The host is removed from the present host group and is placed under the default group.
defaultGroup	The command fails.	The host is removed from the present host group and is placed under the default group.

Notes

When you use this command, you can specify one or more of the optional parameters.

For the names, you can use any combination of alphanumeric characters, hyphens, and underscores. Names can have a maximum of 30 characters.

Minimum firmware level

6.10

Set host channel

The `set hostChannel` command defines the loop ID for the host channel.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
hostChannel	The identifier number of the host channel for which you want to set the loop ID. Enclose the host channel identifier number in square brackets ([ ]). Use a host channel value that is appropriate for your particular controller model. A controller tray might support one host channel or as many as eight host channels. Valid host channel values are a1, a2, a3, a4, a5, a6, a7, a8, b1, b2, b3, b4, b5, b6, b7, or b8.
preferredID	The port identifier for the specified host channel. Port ID values are 0 to 127.

Minimum firmware level

6.10

6.14 adds an update to the host channel identifier.

7.15 adds an update to the host channel identifier.

Set host group

The `set hostGroup` command renames a host group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
hostGroup	The name of the host group that you want to rename. Enclose the host group name in square brackets ([ ]). If the host group name has special characters or numbers, you must enclose the host group name in double quotation marks (" ") inside square brackets.
userLabel	The new name for the host group. Enclose the new host group name in double quotation marks (" ").

Notes

You can use any combination of alphanumeric characters, hyphens, and underscores for the names. Names can have a maximum of 30 characters.

Minimum firmware level

6.10

Set host port

The `set hostPort` command changes the properties for a host port.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

(i) This command does not work in an iSCSI environment, where the host ports are considered initiators. Instead, use the `set iscsiInitiator` command. See Set iSCSI initiator.

Syntax

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

Parameters

Parameter	Description
hostPort	The name of the host port for which you want to change the host type, or for which you want to create a new name. Enclose the host port name in square brackets ([ ]). If the host port name has special characters or numbers, enclose the host port name in double quotation marks (" ") inside square brackets.
userLabel	The new name that you want to give to the host port. Enclose the new name of the host port in double quotation marks (" ").
host	The name of the host for which you are defining an HBA or HCA host port. Enclose the host name in double quotation marks (" ").

Notes

You can use any combination of alphanumeric characters, hyphens, and underscores for the user label. User labels can have a maximum of 30 characters.

Minimum firmware level

6.10

Set initiator

The `set initiator` command updates the initiator object.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

> **(i)** This command replaces the deprecated Set iSCSI initiator command.

> **(i)** This command is applicable only to iSCSI, iSER, NVMe over RoCE, NVMe over InfiniBand, and NVMe over Fibre Channel.

Syntax

```
set initiator (["initiatorName"] | <"initiatorQualifiedName">)
([userLabel="newInitiatorName"] |
[host="newHostName"] | [chapSecret="newSecurityKey"])
```

Parameters

Parameter	Description
`initiator`	Allows you to specify the initiator identifier for which you want to set properties. Enclose the name in double quotation marks ("` "`). You also must enclose the name in square brackets ([ ]) if the value is a user label or angle brackets (< >) if the value is a qualified name (e.g., iqn or nqn).
`userLabel`	Allows you to enter a new user label for the initiator object. Enclose the new user label in double quotation marks (" ").
`host`	Allows you to enter a new host to which the host port is connected. Enclose the host name in double quotation marks (" ").

Parameter	Description
chapSecret	Allows you to enter a new security key that you want to use to authenticate a peer connection. Enclose the security key in double quotation marks (" "). This parameter is only applicable to `iSCSI` and `iSER` host interface types.

Minimum firmware level

8.41

Set iSCSI initiator

The `set iscsiInitiator` command sets the attributes for an iSCSI initiator.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

> ℹ️ This command is deprecated and is replaced by the Set initiator command.

Syntax

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

Parameters

Parameter	Description
`initiatorUserLabel`	The iscsi Initiator user label of the iSCSI initiator for which you want to set attributes. Enclose the iSCSI initiator user label in double quotation marks (" ") inside square brackets ([ ]). ⓘ Begin the initiator user label with the host name to which the host port is connected. Because there can be more than one host port identifier on a host, use a unique suffix for the host port ID. If the host name is `ICTM1590S02H1` the initiator label appears as follows: ```set iscsiInitiator ["ICTM1590S02H1_AA"]```
`iscsiInitiatorName`	The name of the initiator for which you want to set attributes. Enclose the `iscsiInitiatorName` in double quotation marks (" ") inside angle brackets (< >). ⓘ The `iscsiInitiatorName` is the iSCSI Qualified Name (iqn). An example: ```set iscsiInitiator <"iqn.2016-11.com.vmware.iscsi:ictm1509s02h1">```

Parameter	Description
userLabel	The new user label that you want to use for the iSCSI initiator. Enclose the new user label in double quotation marks (" "). (i) A best practice is to begin the initiator user label with the host name to which the host port is connected. Because there can be more than one host port identifier on a host, use a unique suffix for the host port ID. If the host name is ICTM1590S02H1 then an example of the initiator user label is shown below: ```set iscsiInitiator ["ICTM1590S02H1_AA"]```
host	The name of the new host to which the host port is connected. Enclose the host name in double quotation marks (" "). An example is shown below: ```["ICTM1590S02H2"]```
chapSecret	The security key that you want to use to authenticate a peer connection. Enclose the security key in double quotation marks (" ").

Notes

You can use any combination of alphanumeric characters, hyphens, and underscores for the names. Names can have a maximum of 30 characters.

Challenge Handshake Authentication Protocol (CHAP) is a protocol that authenticates the peer of a connection. CHAP is based upon the peers sharing a *secret*. A secret is a security key that is similar to a password.

Use the chapSecret parameter to set up the security keys for initiators that require a mutual authentication. The CHAP secret must be between 12 characters and 57 characters. This table lists the valid characters.

Space	!	"	#	$	%	&	'	(	)	*	
,	-	.	/	0	1	2	3	4	5	6	7
8	9	:	;	<	=	>	?	@	A	B	C

D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	[
\	]	^	_	'	a	b	c	d	e	f	g
h	i	j	k	l	m	n	o	p	q	r	s
t	u	v	w	x	y	z	{	|	}	~	

Minimum firmware level

7.10

8.41 This command is deprecated.

Set iSCSI target properties

The `set iscsiTarget` command defines properties for an iSCSI target.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

> ℹ️ This command is deprecated and is replaced by the Set target properties command.

Syntax

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

Parameters

Parameter	Description
iscsiTarget	The iSCSI target for which you want to set properties. Enclose the *userLabel* in double quotation marks (" "). You must also enclose the *userLabel* in square brackets ([ ]) if the user label is a target alias or angle brackets (< >) if the user label is an iSCSI Qualified Name (IQN).
authenticationMethod	The means of authenticating your iSCSI session.
chapSecret	The security key that you want to use to authenticate a peer connection.
targetAlias	The new name that you want to use for the target. Enclose the name in double quotation marks (" ").

Notes

Challenge Handshake Authentication Protocol (CHAP) is a protocol that authenticates the peer of a connection. CHAP is based upon the peers sharing a *secret*. A secret is a security key that is similar to a password.

Use the `chapSecret` parameter to set up the security keys for initiators that require a mutual authentication. The CHAP secret must be between 12 characters and 57 characters. This table lists the valid characters.

Space	!	"	#	$	%	&	'	(	)	*	
,	-	.	/	0	1	2	3	4	5	6	7
8	9	:	;	<	=	>	?	@	A	B	C
D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	[
\	]	^	_	'	a	b	c	d	e	f	g
h	i	j	k	l	m	n	o	p	q	r	s
t	u	v	w	x	y	z	{	|	}	~	

Minimum firmware level

7.10

8.41 This command is deprecated.

Set iSER target

The `set iserTarget` command defines properties for an iSER target.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

> ℹ️ This command is deprecated and is replaced by the Set target properties command.

Syntax

```
set iserTarget ["userLabel"]
authenticationMethod=(none | chap) |
chapSecret=securityKey |
targetAlias="userLabel"
```

Parameters

Parameter	Description
`iserTarget`	The iSER target for which you want to set properties. Enclose the `userLabel` in double quotation marks (" "). You must also enclose the `userLabel` in square brackets ([ ]) if the user label is a target alias or angle brackets (< >) if the user label is an iSCSI Qualified Name (IQN).
`authenticationMethod`	The means of authenticating your iSCSI session.
`chapSecret`	The security key that you want to use to authenticate a peer connection.
`targetAlias`	The new name that you want to use for the target. Enclose the name in double quotation marks (" ").

Notes

Challenge Handshake Authentication Protocol (CHAP) is a protocol that authenticates the peer of a connection. CHAP is based upon the peers sharing a *secret*. A secret is a security key that is similar to a password.

Use the `chapSecret` parameter to set up the security keys for initiators that require a mutual authentication. The CHAP secret must be between 12 characters and 57 characters. This table lists the valid characters.

Space	!	"	#	$	%	&	'	(	)	*	
,	-	.	/	0	1	2	3	4	5	6	7
8	9	:	;	<	=	>	?	@	A	B	C
D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	[
\	]	^	_	'	a	b	c	d	e	f	g
h	i	j	k	l	m	n	o	p	q	r	s
t	u	v	w	x	y	z	{			}	~	

Minimum firmware level

8.20

8.41 This command is deprecated.

Set session

The `set session errorAction` command defines how you want the current script engine session to run.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin, Support Admin, Security Admin, or Storage Monitor role.

Context

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"
performanceMonitorInterval=intervalValue
performanceMonitorIterations=iterationValue
```

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

Parameters

Parameter	Description
errorAction	How the session responds if an error is encountered during processing. You can choose to stop the session if an error is encountered, or you can continue the session after encountering an error. The default value is stop. (This parameter defines the action for execution errors, not syntax errors. Some error conditions might override the continue value.)
password	The password for the storage array. Enclose the password in double quotation marks (" "). (i) When the client type is set to https, this parameter is obsolete. The password must be specified prior to the CLI command script execution, and cannot be changed in the middle of a script.
performanceMonitorInterval	The frequency of gathering performance data. Enter an integer value for the polling interval, in seconds, for which you want to capture data. The range of values is 3 to 3600 seconds. The default value is 5 seconds. (i) When the client type is set to https, this parameter is obsolete. Instead, to change the default interval value, use this parameter with the individual impacted commands. The commands are save storageArray performanceStats and show drive performanceStats.

Parameter	Description
`performanceMonitorIterations`	The number of samples to capture. Enter an integer value. The range of values for samples captured is `1` to `3600`. The default value is `5`.
	ⓘ When the client type is set to `https`, this parameter is obsolete. Instead, to change the default iteration value, use this parameter with the individual impacted commands. The commands are `save storageArray performanceStats` and `show drive performanceStats`.

Notes

When you use this command, you can specify one or more of the optional parameters.

Passwords are stored on each storage array in a management domain. If a password was not previously set, you do not need a password. The password can be any combination of alphanumeric characters with a maximum of 30 characters. (You can define a storage array password by using the `set storageArray` command.)

The polling interval and the number of iterations that you specify remain in effect until you end the session. After you end the session, the polling interval and the number of iterations return to the default values.

Minimum firmware level

5.20

8.40 - when the client type is set to `https`, obsoleted the `password`, `userRole`, `performanceMonitorInterval`, and `performanceMonitorIterations` parameters.

Set snapshot group schedule

The `set snapGroup enableSchedule` command defines the schedule for taking snapshot images for a snapshot group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
snapGroup	The name of the snapshot group for which you are setting properties. Enclose the snapshot group name in double quotation marks (" ") inside of square brackets ([ ]).
enableSchedule	Use this parameter to turn on or to turn off the ability to schedule a snapshot operation. To turn on snapshot scheduling, set this parameter to TRUE. To turn off snapshot scheduling, set this parameter to FALSE.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

The enableSchedule parameter and the schedule parameter provide a way for you to schedule creating snapshot images for a snapshot group. Using these parameters, you can schedule snapshots daily, weekly, or monthly (by day or by date). The enableSchedule parameter turns on or turns off the ability to schedule snapshots. When you enable scheduling, you use the schedule parameter to define when you want the snapshots to occur.

This list explains how to use the options for the schedule parameter:

* immediate — As soon as you enter the command, a snapshot image is created, and a copy-on-write operation begins.

* startDate — A specific date on which you want to create a snapshot image and perform a copy-on-write operation. The format for entering the date is MM:DD:YY . If you do not provide a start date, the current date is used. An example of this option is startDate=06:27:11.

* scheduleDay — A day of the week on which you want to create a snapshot image and perform a copy-on-write operation. You can enter these values: monday, tuesday, wednesday, thursday, friday, saturday, sunday, and all. An example of this option is scheduleDay=wednesday.

* startTime — The time of a day that you want to create a snapshot image and start performing a copy-on-write operation. The format for entering the time is HH:MM, where HH is the hour and MM is the minute past the hour. Use a 24-hour clock. For example, 2:00 in the afternoon is 14:00. An example of this option is **startTime=14:27**.

* scheduleInterval — An amount of time, in minutes, that you want to have as a minimum between copy-on-write operations. You can possibly create a schedule in which you have overlapping copy-on-write

operations because of the duration of a copy operation. You can make sure that you have time between copy-on-write operations by using this option. The maximum value for the `scheduleInterval` option is 1440 minutes. An example of this option is **`scheduleInterval=180`**.

- `endDate` — A specific date on which you want to stop creating a snapshot image and end the copy-on-write operation. The format for entering the date is `MM:DD:YY`. An example of this option is **`endDate=11:26:11`**.

- `noEndDate` — Use this option if you do not want your scheduled copy-on-write operation to end. If you later decide to end the copy-on-write operations you must re-enter the `set snapGroup` command and specify an end date.

- `timesPerDay` — The number of times that you want the schedule to run in a day. An example of this option is `timesPerDay=4`.

- `timeZone` — Use this parameter to define the time zone in which the storage array is operating. You can define the time zone in one of two ways:

  - `GMT±HH:MM` — The time zone offset from GMT. Enter the offset in hours and minutes. For example GMT-06:00 is the central time zone in the United States.

  - `Text string` — Standard time zone text strings. For example: "America/Chicago" or "Australia/Brisbane". Time zone text strings are case sensitive. If you enter an incorrect text string, GMT time is used. Enclose the text string in double quotation marks.

The code string for defining a schedule is similar to these examples:

```
enableSchedule=true schedule startTime=14:27
```

```
enableSchedule=true schedule scheduleInterval=180
```

```
enableSchedule=true schedule timeZone=GMT-06:00
```

```
enableSchedule=true schedule timeZone="America/Chicago"
```

If you also use the `scheduleInterval` option, the firmware chooses between the `timesPerDay` option and the `scheduleInterval` option by selecting the lowest value of the two options. The firmware calculates an integer value for the `scheduleInterval` option by dividing 1440 by the `scheduleInterval` option value that you set. For example, 1440/180 = 8. The firmware then compares the `timesPerDay` integer value with the calculated `scheduleInterval` integer value and uses the smaller value.

To remove a schedule, use the `delete volume` command with the `schedule` parameter. The `delete volume` command with the `schedule` parameter deletes only the schedule, not the snapshot volume.

Minimum firmware level

7.83

7.86 adds the `scheduleDate` option and the `month` option.

Set snapshot group repository volume capacity

The `set snapGroup increase/decreaseRepositoryCapacity` command increases or decreases the capacity of a snapshot group repository volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

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
```

Parameters

Parameter	Description
snapGroup	The name of the snapshot group for which you want to increase capacity or decrease capacity. Enclose the snapshot group name in double quotation marks (" ") inside of square brackets ([ ]).

Parameter	Description
`repositoryVolume`	The name of the repository volume for which you want to increase capacity. An available standard volume is added to the repository volume to increase the capacity of the repository volume. You have two options for defining the name of a repository volume: • Use an existing repository volume: name • Create a new repository volume when you run this command The name of an existing repository volume consists of two parts: • The term "repos" • A four digit numerical identifier that the storage management software assigns to the repository volume name Enclose the name of the existing repository volume in double quotation marks (" "). If you want to create a new repository volume when you run this command you must enter the name of either a volume group or a disk pool in which you want the repository volume. Optionally, you can also define the capacity of the repository volume. If you want to define the capacity you can use these values: • An integer value that represents a percentage of the base volume capacity • A decimal fraction value that represents a percentage of the base volume capacity • A specific size for the repository volume. Size is defined in units of `bytes`, `KB`, `MB`, `GB`, or `TB`. If you do not use the capacity option, the storage management software sets the capacity to 20 percent of the base volume capacity. When you run this command the storage management software creates the repository volume for the snapshot volume.
`count`	The number of repository volumes that you want to remove from the snapshot group. Use integer values.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the user label. User labels can have a maximum of 30 characters.

The repository volume name is automatically created by the storage management software and the firmware when you create a new snapshot group. You cannot rename the repository volume because renaming the repository volume breaks the linkage with the snapshot images.

A snapshot group repository volume is an expandable volume that is structured as a concatenated collection of up to 16 standard volume entities. Initially, an expandable repository volume has only a single element. The capacity of the expandable repository volume is exactly that of the single element. You can increase the capacity of an expandable repository volume by attaching additional standard volumes to it. The composite expandable repository volume capacity then becomes the sum of the capacities of all of the concatenated standard volumes.

A snapshot group repository volume must satisfy a minimum capacity requirement that is the sum of the following:

- 32 MB to support fixed overhead for the snapshot group and for copy-on-write processing.
- Capacity for rollback processing, which is 1/5000th of the capacity of the base volume.

The minimum capacity is enforcement by the controller firmware and the storage management software.

Minimum firmware level

7.83

Set snapshot group media scan

The `set snapGroup mediaScanEnabled` command runs a media scan on a snapshot group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
snapGroup	The name of the snapshot group on which you want to run a media scan. Enclose the snapshot group name in double quotation marks (" ") inside of square brackets ([ ]).
mediaScanEnabled	The setting to turn on or turn off media scan for the volume. To turn on media scan, set this parameter to TRUE. To turn off media scan, set this parameter to FALSE. (If media scan is disabled at the storage array level, this parameter has no effect.)
redundancyCheckEnabled	The setting to turn on or turn off redundancy checking during a media scan. To turn on redundancy checking, set this parameter to TRUE. To turn off redundancy checking, set this parameter to FALSE.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

Minimum firmware level

7.83

Set snapshot group attributes

The `set snapGroup` command defines the properties for a snapshot group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
snapGroup	The name of the snapshot group for which you are setting properties. Enclose the snapshot group name in double quotation marks (" ") inside of square brackets ([ ]).
userLabel	The new name that you want to give to the snapshot group. Use this parameter when you want to rename the snapshot group. Enclose the new snapshot group name in double quotation marks (" ").
repositoryFullPolicy	How you want snapshot image processing to continue if the repository volumes for the snapshot image group are full. You can choose to fail writes to the base volume (failBaseWrites) or delete (purge) the snapshot images (purgeSnapImages). The default action is purgeSnapImages.
repositoryFullLimit	The percentage of repository volume capacity at which you receive a warning that the snapshot image repository volume is nearing full. Use integer values. For example, a value of 70 means 70 percent. The default value is 75.
autoDeleteLimit	The maximum number of snapshot images that you want to automatically delete if you have selected to purge the snapshot images for a repository full policy. Use integer values. The default value is 32.
rollBackPriority	Use this parameter to determine whether system resources should be allocated to the rollback operation at the expense of system performance. Valid values are highest, high, medium, low, or lowest A value of high indicates that the rollback operation is prioritized over all other host I/O. A value of lowest indicates that the rollback operation should be performed with minimal impact to host I/O.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

When you use this command, you can specify one or more of the parameters. You do not, however, need to use all of the parameters.

Minimum firmware level

7.83

Set read-only snapshot volume to read/write volume

The `set snapVolume convertToReadWrite` command changes a snapshot volume that is a read-only volume to a snapshot volume that is read/write volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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

Parameters

Parameter	Description
snapVolume	The name of the snapshot volume that you want to change from read-only to read/write. Enclose the snapshot volume identifier in double quotation marks (" ") inside of square brackets ([ ]).

Parameter	Description
`repositoryVolume`	The name of the repository volume that you want to use for the read/write volume. You have two options for defining the name of a repository volume: • Use an existing repository volume: name • Create a new repository volume when you run this command The name of an existing repository volume is comprised of two parts: • The term "repos" • A four-digit numerical identifier that the storage management software assigns to the repository volume name Enclose the name of the existing repository volume in double quotation marks (" "). If you want to create a new repository volume when you run this command you must enter the name of either a volume group or a disk pool in which you want the repository volume. Optionally, you can also define the capacity of the repository volume. If you want to define the capacity you can use these values: • An integer value that represents a percentage of the base volume capacity • A decimal fraction value that represents a percentage of the base volume capacity • A specific size for the repository volume. Size is defined in units of `bytes`, `KB`, `MB`, `GB`, or `TB`. If you do not use the capacity option, the storage management software sets the capacity to 20 percent of the base volume capacity. When you run this command the storage management software creates the repository volume for the snapshot volume.
`repositoryFullLimit`	The percentage of repository volume capacity at which you receive a warning that the snapshot image repository volume is nearing full. Use integer values. For example, a value of 70 means 70 percent. The default value is 75.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the user label. User labels can have a maximum of 30 characters.

The repository volume name is automatically created by the storage management software and the firmware when you create a new snapshot group. You cannot rename the repository volume because renaming the repository volume will break the linkage with the snapshot images.

A snapshot group repository volume is an expandable volume that is structured as a concatenated collection of up to 16 standard volume entities. Initially, an expandable repository volume has only a single element. The capacity of the expandable repository volume is exactly that of the single element. You can increase the capacity of an expandable repository volume by attaching additional standard volumes to it. The composite expandable repository volume capacity then becomes the sum of the capacities of all of the concatenated standard volumes.

A snapshot group repository volume must satisfy a minimum capacity requirement that is the sum of the following:

- 32 MB to support fixed overhead for the snapshot group and for copy-on-write processing.
- Capacity for rollback processing, which is 1/5000th of the capacity of the base volume.

The minimum capacity is enforcement by the controller firmware and the storage management software.

Minimum firmware level

7.83

Set snapshot volume repository volume capacity

The `set snapVolume increase/decreaseRepositoryCapacity` command increases or decreases the capacity of a snapshot volume repository volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax for increasing capacity

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

Syntax for decreasing capacity

```
set snapVolume ["snapVolumeName"] decreaseRepositoryCapacity
count=numberOfVolumes
```

Parameters

Parameter	Description
snapVolume	The name of the snapshot volume for which you are setting properties. Enclose the snapshot volume identifier in double quotation marks (" ") inside of square brackets ([ ]).

Parameter	Description
`repositoryVolume`	The name of the repository volume for which you want to increase capacity. An available standard volume is added to the repository volume to increase the capacity of the repository volume. You have two options for defining the name of a repository volume: • Use an existing repository volume: name • Create a new repository volume when you run this command The name of an existing repository volume is comprised of two parts: • The term "repos" • A four digit numerical identifier that you assign to the repository volume name Enclose the name of the existing repository volume in double quotation marks (" "). If you want to create a new repository volume when you run this command you must enter the name of either a volume group or a disk pool in which you want the repository volume. Optionally, you can also define the capacity of the repository volume. If you want to define the capacity you can use these values: • An integer value that represents a percentage of the base volume capacity • A decimal fraction value that represents a percentage of the base volume capacity • A specific size for the repository volume. Size is defined in units of `bytes`, `KB`, `MB`, `GB`, or `TB`. If you do not use the capacity option, the storage management software sets the capacity to 20 percent of the base volume capacity. Enclose the name of the new repository volume in parentheses.
`count`	The number of volumes that you want to remove. Use integer values.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

A snapshot repository volume is an expandable volume that is structured as a concatenated collection of up to 16 standard volume entities. Initially, an expandable repository volume has only a single element. The capacity of the expandable repository volume is exactly that of the single element. You can increase the capacity of an expandable repository volume by attaching additional standard volumes to it. The composite expandable repository volume capacity then becomes the sum of the capacities of all of the concatenated standard volumes.

A snapshot group repository volume must satisfy a minimum capacity requirement that is the sum of the following:

- 32 MB to support fixed overhead for the snapshot group and for copy-on-write processing.
- Capacity for rollback processing, which is 1/5000th of the capacity of the base volume.

The minimum capacity is enforcement by the controller firmware and the storage management software.

Minimum firmware level

7.83

Set snapshot volume media scan

The `set snapVolume mediaScanEnabled` command runs a media scan on the drives used for a snapshot volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Optionally, you also can perform a redundancy check on the data.

Syntax

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

Parameters

Parameter	Description
`snapVolume`	The name of the snapshot volume for which you are setting properties. Enclose the snapshot volume identifier in double quotation marks (" ") inside of square brackets ([ ]).
`mediaScanEnabled`	The setting to turn on or turn off media scan for the snapshot volume. To turn on media scan, set this parameter to `TRUE`. To turn off media scan, set this parameter to `FALSE`. (If media scan is disabled at the storage array level, this parameter has no effect.)
`redundancyCheckEnabled`	The setting to turn on or turn off redundancy checking during a media scan. To turn on redundancy checking, set this parameter to `TRUE` . To turn off redundancy checking, set this parameter to `FALSE`.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

Minimum firmware level

7.83

Rename snapshot volume

The `set snapVolume` command renames an existing snapshot volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
`snapVolume`	The name of the snapshot volume that you want to rename. Enclose the snapshot volume name in double quotation marks (" ") inside of square brackets ([ ]).
`userLabel`	A new name that you want to give to the snapshot volume. Enclose the new snapshot volume name in double quotation marks (" ").

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

Minimum firmware level

7.83

Update SNMP community

The `set snmpCommunity` command creates a new name for an existing Simple Network Management Protocol (SNMP) community.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
set snmpCommunity communityName="snmpCommunityName"
newCommunityName="newSnmpCommunityName"
```

Parameters

Parameter	Description
`communityName`	The name of the existing SNMP community that you want to rename. Enclose the SNMP community name in double quotation marks (" ").

Parameter	Description
`newCommunityName`	The new name that you want to give to the SNMP community. Enclose the SNMP community name in double quotation marks (" ").

Minimum firmware level

8.30

Update SNMP MIB II system group variables

The `set snmpSystemVariables` command changes the system variables for the Simple Network Management Protocol (SNMP).

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

The following system variables are maintained in a Management Information Base II (MIB-II) database:

- Name of the system
- Name of the system contact
- Location of the system

Syntax

```
set snmpSystemVariables
[sysName=newSystemName]
[sysContact=contactName]
[sysLocation=systemLocation]
```

Parameters

Parameter	Description
`sysName`	The new name that you want to give to the SNMP system. Use standard SNMP and MIB conventions for the system name. Enclose the SNMP system name in square brackets ([ ]).

Parameter	Description
sysContact	The name of contact person for the managed system with information on how to contact this person. Enclose the SNMP contact name in square brackets ([ ]).
sysLocation	The physical location of the system, such as "3rd flr". Enclose the SNMP system location in square brackets ([ ]).

Minimum firmware level

8.30

Update SNMP trap destination

The `set snmpTrapDestination trapReceiverIP` command turns on or turns off sending authentication failure messages for an SNMP trap destination. Failure occurs when the SNMP agent received a message from an SNMP manager, but the message contained an invalid community name or user name.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
set snmpTrapDestination trapReceiverIP=ipAddress
(communityName="communityName" | (userName="userName" [engineId=(local |
engineId)]))
[sendAuthenticationFailureTraps=(TRUE | FALSE)]
```

Parameters

Parameter	Description
trapReceiverIP	The IP address of the SNMP manager to which you want to send trap messages.
communityName	The name of the SNMP community for which you want to send trap messages.

Parameter	Description
userName	The name of the SNMP user for which you want to send trap messages.
engineId	The engine ID of the SNMP user for which you want to send trap messages. The engine ID is required if there is more than one USM user with the same user name. The value may be "`local`" to specify the local SNMP agent is the authoritative agent or a hexadecimal digit string to specify a remote SNMP agent engine ID.
sendAuthenticationFailureTraps	This parameter turns on or turns off sending authentication failure messages to an SNMP manager. To send authentication failure messages, set the parameter to `TRUE`. To prevent sending authentication failure messages, set the parameter to `FALSE`. The default is `TRUE`.

Minimum firmware level

8.30

Update SNMPv3 USM user

The `set snmpUser userName` command updates an existing Simple Network Management Protocol (SNMP) USM user. The USM user to be changed is identified using the user name if there is only one user with the user name. The user is identified using the user name and engine ID if there is more than one user with the same user name and different engine ID.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
set snmpUser userName="snmpUserName" [engineId=(local | engineId)]
[newUserName="newSnmpUserName"] [newEngineId=(local | engineId)]
[authProtocol=(none | sha | sha256 | sha512) authPassword="authPassword"]
[privProtocol=(none | aes128) privPassword="privPassword"]
```

Parameters

Parameter	Description
userName	The name of the SNMP USM user that you want to update. Enclose the SNMP USM user name in double quotation marks (" ")
engineId	The engine ID of the SNMP USM user that you want to update. The engine ID is required if there is more than one USM user with the same user name. The value may be `local` to specify the local SNMP agent is the authoritative agent or a hexidecimal digit string to specify a remote SNMP agent engine ID.
newSnmpUserName	The new name that you want to give to the SNMP user. Enclose the SNMP user name in double quotation marks (" "). The default value is the previously defined user name for the user.
newEngineId	The new engineID to use as the identifier of the authoritative SNMP engine ID for the user. The value may be "[.code]local" to specify the local SNMP agent to be the authoritative agent or a hexadecimal digit string to specify a remote SNMP agent engine ID. The default value is the previously defined engine ID for the user.
authProtocol	The authentication protocol (HMAC) to be used for the user. The value may be one of the following: • `none` - No authentication of SNMP messages (default) • `sha` - SHA-1 authentication • `sha256` - SHA-256 authentication • `sha512` - SHA-512 authentication The default value is the previously defined authentication protocol for the user.
authPassword	The password to be used for authentication for the user. Must be specified if the authentication protocol is `sha`, `sha256` or `sha512`

Parameter	Description
`privProtocol`	The privacy protocol (encryption) to be used for the user. The value may be one of the following: • `none` - No encryption of SNMP messages (default) • `aes128` - AES-18 encryption The default value is the previously defined privacy protocol for the user.
`privPassword`	The password to be used for privacy/encryption for the user. Must be specified if the privacy protocol is "[.code]`aes128`".

Minimum firmware level

8.72

Set storage array to enable or disable automatic load balancing

The `set storageArray autoLoadBalancingEnable` command enables or disables the Automatic Load Balancing feature.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameter

Parameter	Description
`storageArray`	Indicates that this parameter works on a storage array.

Parameter	Description
`autoLoadBalancingEnable`	This parameter turns on or turns off Automatic Load Balancing on the controller. Set the parameter to `TRUE` to turn on Automatic Load Balancing. Set the parameter to `FALSE` to turn off Automatic Load Balancing.

What is Automatic Load Balancing?

The Automatic Load Balancing feature provides improved I/O resource management by reacting dynamically to load changes over time and automatically adjusting volume controller ownership to correct any load imbalance issues when workloads shift across the controllers.

The workload of each controller is continually monitored and, with cooperation from the multipath drivers installed on the hosts, can be automatically brought into balance whenever necessary. When workload is automatically re-balanced across the controllers, the storage administrator is relieved of the burden of manually adjusting volume controller ownership to accommodate load changes on the storage array.

When Automatic Load Balancing is enabled, it performs the following functions:

- Automatically monitors and balances controller resource utilization.
- Automatically adjusts volume controller ownership when needed, thereby optimizing I/O bandwidth between the hosts and the storage array.

Enabling and disabling Automatic Load Balancing

Automatic Load Balancing is enabled by default on all storage arrays that ship with SANtricity OS (controller software) 8.30 or later. Linux, Windows, and VMware multipath drivers can use the Automatic Load Balancing feature. If you upgrade your controller from SANtricity OS (controller software) 8.25 or earlier to 8.30 or later, Automatic Load Balancing is disabled by default on the storage array.

You might want to disable Automatic Load Balancing on your storage array for the following reasons:

- You do not want to automatically change a particular volume's controller ownership to balance workload.
- You are operating in a highly tuned environment where load distribution is purposefully set up to achieve a specific distribution between the controllers.

In SANtricity Storage Manager, select the **Storage Array** > **Configuration** > **Automatic Load Balancing** menu option to enable or disable the Automatic Load Balancing feature for an individual storage array.

In SANtricity System Manager, select **Settings** > **System**, scroll down to the **Additional Settings** section, click the E**nable/Disable Automatic Load Balancing** link, and select the**Enable/Disable automatic load balancing** checkbox to enable or disable the feature for an individual storage array.

Examples

```
SMcli -n Array1 -c "set storageArray autoLoadBalancingEnable=true;"

SMcli completed successfully.
```

An active "Drive Lost Primary Path" condition will result in the Automatic Load Balancing incapable of balancing workloads. This condition must be inactive to ensure workloads are balanced through the Automatic Load Balancing feature.

Minimum firmware level

8.30

Set AutoSupport message collection schedule

The `set storageArray autoSupport schedule` command sets the daily and weekly times and days of the week that AutoSupport messages are sent.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

- If AutoSupport is enabled, the management software sends both daily AutoSupport messages and weekly AutoSupport messages.
- You can specify a range (hour-level granularity) of when to send daily and when to send weekly messages for the storage arrays in your management domain.
- For the weekly schedule, you select preferred days of the week for AutoSupport collection and transmission.

Syntax

```
set storageArray autoSupport schedule dailyTime=startTime-endTime
  [dayOfWeek=(Sunday Monday Tuesday Wednesday Thursday Friday Saturday)]
weeklyTime=startTime-endTime
```

Parameters

Parameter	Description
dailyTime	`<startTime>` - `<endTime>` Specifies the time of day that you want to start and end the collection of AutoSupport data for all storage arrays. The startTime and endTime must be in the 24-hour form of HH:00 and must be on the hour. For example, 9:00 p.m. should be entered as 21:00.

Parameter	Description
`dayOfWeek`	(Sunday|Monday|Tuesday|Wednesday|Thursday|Friday|Saturday) Specifies the preferred days of the week (Sunday through Saturday) that you want to collect AutoSupport bundle collection data. The `dayOfWeek` parameter must be surrounded by parentheses and separated with a space.
`weeklyTime`	`<startTime>` - `<endTime>` Specifies the time of day that you want to start and end the collection of the AutoSupport bundle collection data for each day of the week that you have selected. The `startTime` and `endTime` must be in the form of HH:MM[am|pm].

Examples

```
SMcli -n Array1 -c "set storageArray autoSupport schedule dailyTime=14:00-
15:00 weeklyTime=1:00-5:00;"

SMcli -n Array1 -c "set storageArray autoSupport schedule dailyTime=14:00-
15:00 dayOfWeek=(Monday Friday) weeklyTime=1:00-5:00;"

SMcli completed successfully.
```

Verification

Use the `show storageArray autoSupport` command to see the resulting change to the schedule.

Minimum Firmware Level

8.40

Enable or disable AutoSupport maintenance window (for individual E2800 or E5700 arrays)

The `set storageArray autoSupportMaintenanceWindow` command turns on or turns off the AutoSupport maintenance window feature.

Use a maintenance window to suppress automatic ticket creation on error events. Under normal operation mode the storage array will use AutoSupport to open a case with Technical Support if there is an issue. When AutoSupport is placed in a maintenance window this feature is suppressed.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
set storageArray autoSupportMaintenanceWindow (enable | disable)
    emailAddresses=("emailAddress1" "emailAddress2" ...)
    [duration=<duration_in_hours>];
```

Parameters

Parameter	Description
emailAddresses	The list of email addresses to receive a confirmation email that the maintenance window request has been processed. You can specify up to five email addresses.
duration	Optional. The duration (in hours) to enable maintenance window. If omitted, the maximum supported duration (72 hours) is used.

Examples

```
SMcli -n Array1 -c "set storageArray autoSupportMaintenanceWindow enable
    emailAddresses=\"me@company.com\" duration=5;"

SMcli completed successfully.
```

```
SMcli -n Array1 -c "set storageArray autoSupportMaintenanceWindow enable
    emailAddresses=(\"me1@company.com\" \"me2@company.com\");"

SMcli completed successfully.
```

```
SMcli -n Array1 -c "set storageArray autoSupportMaintenanceWindow disable
    emailAddresses=(\"me1@company.com\" \"me2@company.com\"
\"me3@company.com\"
    \"me4@company.com\" \"me5@company.com\");"

SMcli completed successfully.
```

Minimum Firmware Level

8.42

Enable or disable the AutoSupport OnDemand feature

The `set storageArray autoSupportOnDemand` command turns on or turns off the AutoSupport OnDemand feature. This feature allows technical support to coordinate AutoSupport data transmission, and allows them to request the re-transmission of missing support data.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

Before enabling this feature, you must first enable the AutoSupport feature on the storage array. After enabling this feature, you can next enable the AutoSupport Remote Diagnostics feature (if desired).

Syntax

```
set storageArray autoSupportOnDemand (enable | disable)
```

Parameters

Parameter	Description
enable | disable	Allows the user to enable or disable AutoSupport OnDemand feature. If AutoSupport is disabled, the enable action will error and asks the user to enable it first. If the Remote Diagnostics feature is enabled, the disable action will also turn off Remote Diagnostics feature.

Examples

```
SMcli -n Array1 -c "set storageArray autoSupportOnDemand enable;"

SMcli completed successfully.
```

Verification

Use the `show storageArray autoSupport` command to see if you have enabled the feature. The initial two lines of the displayed output show the enable status of the AutoSupport feature, followed by the AutoSupport OnDemand feature:

```
The AutoSupport is enabled on this storage array.
The AutoSupport OnDemand feature is enabled on this storage array.
The AutoSupport Remote Diagnostics feature is enabled on this storage
array.
```

Minimum Firmware Level

8.40

Enable or disable the AutoSupport Remote Diagnostics feature

The `set storageArray autoSupportRemoteDiag` command turns on or turns off the AutoSupport OnDemand Remote Diagnostics feature. This feature enables technical support to request support data to diagnose problems remotely.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

Before enabling this feature, first enable the AutoSupport feature and then the AutoSupport OnDemand feature on the storage array.

You must enable the three features in the following order:

1. Enable AutoSupport
2. Enable AutoSupport OnDemand
3. Enable AutoSupport Remote Diagnostics

Syntax

```
set storageArray autoSupportRemoteDiag (enable | disable)
```

Parameters

Parameter	Description
enable | disable	Allows the user to enable or disable AutoSupport Remote Diagnostics feature. If AutoSupport and AutoSupport OnDemand are disabled, then the enable action will error and asks the user to enable them first.

Examples

```
SMcli -n Array1 -c "set storageArray autoSupportRemoteDiag enable;"

SMcli completed successfully.
```

Verification

Use the `show storageArray autoSupport` command to see if you have enabled the feature. The initial three lines of the displayed output show the enable status of the AutoSupport feature, followed by the AutoSupport OnDemand feature and the AutoSupport Remote Diagnostics feature:

```
The AutoSupport feature is enabled on this storage array.
The AutoSupport OnDemand feature is enabled on this storage array.
The AutoSupport Remote Diagnostics feature is enabled on this storage array.
```

Minimum Firmware Level

8.40

Set storage array to enable or disable cache mirror data assurance check

The `set storageArray cacheMirrorDataAssuranceCheckEnable` command allows you to enable or disable the cache mirror data assurance check.

Supported Arrays

This command applies to an individual E2800, E5700, EF600, or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

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

Parameters

None.

Minimum firmware level

8.41 New command parameter.

Set storage array controller health image allow overwrite

The `set storageArray controllerHealthImageAllowOverWrite` command sets a flag on a controller to allow a new controller health image to overwrite an existing controller health image on storage arrays that support the controller health image feature.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

If the storage array does not support the controller health image feature, the command returns an error.

> (i) With firmware version 8.20 the `coreDumpAllowOverWrite` parameter is replaced with the `controllerHealthImageAllowOverWrite` parameter.

Syntax

```
set storageArray controllerHealthImageAllowOverWrite
```

Parameters

None.

Notes

When the controller health image is retrieved, the `allow overwrite` flag is set. If the controller health image is not retrieved, the image expires in 48 hours, after which the `allow overwrite` flag is set. When you use the `set storageArray controllerHealthImageAllowOverWrite` command to set the `allow overwrite` flag, the 48-hour expiration is waived as if the image had been retrieved.

Minimum firmware level

7.86

8.20 replaces the `coreDumpAllowOverWrite` parameter with the `controllerHealthImageAllowOverWrite` parameter.

Set storage array directory server role mapping

The `set storageArray directoryServer roles` command allows you to define role mappings for a specified directory server. These role mappings are used to authenticate users that attempt to execute various SMcli commands.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

What you'll need

The following roles are available to be mapped:

- **Storage admin** — Full read/write access to the storage objects (for example, volumes and disk pools), but no access to the security configuration.
- **Security admin** — Access to the security configuration in Access Management, certificate management, audit log management, and the ability to turn the legacy management interface (SYMbol) on or off.
- **Support admin** — Access to all hardware resources on the storage array, failure data, MEL events, and controller firmware upgrades. No access to storage objects or the security configuration.
- **Monitor** — Read-only access to all storage objects, but no access to the security configuration.

Syntax

```
set storageArray directoryServer ["domainId"]
    groupDN="groupDistinguishedName" roles=("role1"..."roleN")
```

Parameters

Parameter	Description
directoryServer	Allows you to specify the domain by its ID for which you want to set up role mappings.
groupDN	Allows you to specify the group's distinguished name (DN) to be added to the mapping list.

Parameter	Description
`roles`	Allows you to specify one or more roles for the user(s) in the defined group. If you enter more than one role, separate the values with a space. Valid choices are: • `storage.monitor` • `storage.admin` • `security.admin` • `support.admin`

Examples

```
SMcli -n Array1 -c "set storageArray directoryServer ["domain1"]
                 groupDN="CN=ng-hsg-bc-madridsecurity,OU=Managed,
                 OU=MyCompanyGroups,DC=hq,DC=mycompany,DC=com"
                 roles=("storage.monitor" "security.admin"
"storage.admin");"

SMcli -n Array1 -c "set storageArray directoryServer ["domain1"]
                 groupDN="CN=ng-epg-engr-manageability,OU=Managed,
                 OU=MyCompanyGroups,DC=hq,DC=mycompany,DC=com"
                 roles=("support.admin");"

SMcli completed successfully.
```

Set storage array directory server

The `set storageArray directoryServer` command updates the directory server configuration.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
set storageArray directoryServer ["domainId"]
    (domainNames=("domainName1"..."domainNameN") |
     addDomainNames=("domainName1"..."domainNameN") |
     serverUrl="serverUrl" |
     bindAccount="username" bindPassword="password" |
     searchBaseDN="distinguishedName" |
     usernameAttribute="attributeName" |
     groupAttributes=("attrName1"..."attrNameN") |
     addGroupAttributes=("attrName1"..."attrNameN"))
    [skipConfigurationTest={true | false}]
```

Parameters

Parameter	Description
directoryServer	Allows you to specify the domain ID to update the settings.
domainNames	Allows you to set one or more valid domain names for the directory server. If you enter more than one name, separate the values with a space. Using this set option will clear out existing domain names.
addDomainNames	Allows you to add one or more valid domain names for the directory server. If you enter more than one name, separate the values with a space.
serverUrl	Allows you to specify the server URL.
bindAccount	Allows you to specify the username to be used as the binding account.
bindPassword	Allows you to specify the password to be used as the binding password.
searchBaseDN	Allows you to specify the search base distinguished name to search for LDAP user objects for determining group membership.
usernameAttribute	Allows you to specify the attribute to be used to search for user objects for determining group membership. If specified, the string must contain the variable {uid} that will be replaced with the username used during login. Example: sAMAccountName={uid}

Parameter	Description
groupAttributes	Allows you to set one or more group attributes to be used to look for group Distinguished Names. Distinguished names are used to determine group membership for role mapping. ⓘ If you enter more than one group, separate the values with a space. ⓘ Using this parameter will clear out existing groups.
addGroupAttributes	Allows you to add one or more group attributes to be used to look for group Distinguished Names. Distinguished names are used to determine group membership for the purposes of role mapping. ⓘ If you enter more than one group, separate the values with a space.
skipConfigurationTest	Allows you to skip the configuration test before the configuration is saved. The default is `false`.

Examples

```
SMcli -n Array1 -c "set storageArray directoryServer ["domain1"]
       serverUrl="ldaps://hqldap.eng.mycompany.com:636";"

SMcli -n Array1 -c "set storageArray directoryServer ["domain1"]
                    bindAccount="bindDN2" bindPassword="thePassword2"
                    searchBaseDN="OU=_Users,DC=hq,DC=mycompany,DC=com"
                    usernameAttribute="sAMAccountName"
groupAttributes=("memberOf");"

SMcli completed successfully.
```

Set external key management settings

The `set storageArray externalKeyManagement` command configures the external key management server address and port number.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

> ⓘ   This command applies only to external key management.

Syntax

```
set storageArray externalKeyManagement serverAddress=serverAddress
serverPort=portNumber
```

Parameters

Parameter	Description
serverAddress	Allows you to specify the external key management server address. The server address can be a fully qualified domain name, IPv4 address, or IPv6 address.
serverPort	Allows you to specify the port number of the external key management server.

Example

```
SMcli -n Array1 -c "set storageArray externalKeyManagement
serverAddress=192.0.2.1 serverPort=8081;"

    SMcli completed successfully.
```

Minimum firmware level

8.40

Enable or disable host connectivity reporting

The `set storageArray hostConnectivityReporting` command enables or disables host connectivity reporting on the controller.

Supported Arrays

This command applies to an individual E2800, E5700, EF600, or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
set storageArray hostConnectivityReporting (enable | disable)
```

Context

When you enable host connectivity reporting on the storage array, the storage array continuously monitors the connection between the storage array's controllers and the configured hosts and alerts you if the connection is disrupted due to a loose, damaged, or missing cable or other problems with the host. You are also notified if the host type is incorrectly specified on the storage array (which could result in failover problems).

> (i) To disable host connectivity reporting, you must first disable automatic load balancing.

> (i) You can keep host connectivity reporting enabled if automatic load balancing is disabled.

> (i) Host connectivity reporting and automatic load balancing function only on the Linux DHALUA, Windows/Windows Clustered, and VMware host types.

Parameters

None.

Minimum firmware level

8.42 New command parameter.

Set storage array ICMP response

The `set storageArray icmpPingResponse` command returns the default values for negotiable settings for sessions and connections, which represent the starting point for the storage array for negotiations.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

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

Parameter

Parameter	Description
`icmpPingResponse`	This parameter turns on or turns off Echo Request messages. Set the parameter to `TRUE` to turn on Echo Request messages. Set the parameter to `FALSE` to turn off Echo Request messages.

Notes

The Internet Control Message Protocol (ICMP) is used by operating systems in a network to send error messages, test packets, and informational messages related to the IP, such as a requested service is not available or that a host or router could not be reached. The ICMP response command sends ICMP Echo Request messages and receives ICMP Echo Response messages to determine if a host is reachable and the time it takes for packets to get to and from that host.

Minimum firmware level

7.10

Set storage array iSNS server IPv4 address

The `set storageArray isnsIPv4ConfigurationMethod` command sets the configuration method and address for an IPv4 Internet Storage Name Service (iSNS).

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
set storageArray isnsIPv4ConfigurationMethod=(static | dhcp)
isnsIPv4Address=ipAddress
```

Parameters

Parameters	Description
`isnsIPv4ConfigurationMethod`	The method that you want to use to define the iSNS server configuration. You can enter the IP address for the IPv4 iSNS servers by selecting `static`. For IPv4, you can choose to have a Dynamic Host Configuration Protocol (DHCP) server select the iSNS server IP address by entering `dhcp`. To enable DHCP, you must set the `isnsIPv4Address` parameter to `0.0.0.0`.
`isnsIPv4Address`	The IP address that you want to use for the iSNS server. Use this parameter with the `static` value for IPv4 configurations. If you choose to have a DHCP server set the IP address for an IPv4 Internet iSNS server, you must set the **`isnsIPv4Address`** parameter to `0.0.0.0`.

Notes

The iSNS protocol facilitates the automated discovery, management, and configuration of iSCSI devices and Fibre Channel devices on a TCP/IP network. iSNS provides intelligent storage discovery and management services comparable to those found in Fibre Channel networks, which allow a commodity IP network to function in a similar capacity as a storage area network. iSNS also facilitates a seamless integration of IP networks and Fibre Channel networks, due to its ability to emulate Fibre Channel fabric services and manage both iSCSI devices and Fibre Channel devices.

The DHCP server passes configuration parameters, such as network addresses, to IP nodes. DHCP enables a client to acquire all of the IP configuration parameters that it needs to operate. DHCP lets you automatically allocate reusable network addresses.

Minimum firmware level

7.10

Set storage array iSNS server IPv6 address

The `set storageArray isnsIPv6Address` command sets the IPv6 address for the iSNS server.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
set storageArray isnsIPv6Address=ipAddress
```

Parameter

Parameters	Description
isnsIPv6Address	The IPv6 address that you want to use for the iSNS server.

Notes

The iSNS protocol facilitates the automated discovery, management, and configuration of iSCSI devices and Fibre Channel devices on a TCP/IP network. iSNS provides intelligent storage discovery and management services comparable to those found in Fibre Channel networks, which permits a commodity IP network to function in a similar capacity as a storage area network. iSNS also facilitates a seamless integration of IP networks and Fibre Channel networks, due to its ability to emulate Fibre Channel fabric services, and manage both iSCSI devices and Fibre Channel devices. iSNS provides value in any storage network that has iSCSI devices, Fibre Channel devices, or any combination.

Minimum firmware level

7.10

Set storage array iSNS server listening port

The `set storageArray isnsListeningPort` command sets the iSNS server listening port.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
set storageArray isnsListeningPort=listeningPortIPAddress
```

Parameter

Parameter	Description
`isnsListeningPort`	The IP address that you want to use for the iSNS server listening port. The range of values for the listening port is `49152` to `65535`. The default value is `53205`. The listening port resides on the server and performs these activities: • Monitors incoming client connection requests • Manages traffic to the server When a client requests a network session with a server, the listener receives the actual request. If the client information matches the listener information, then the listener grants a connection to the database server.

Notes

A listening port resides on the database server and is responsible for these activities:

• Listening (monitoring) for incoming client connection requests
• Managing the traffic to the server

When a client requests a network session with a server, a listener receives the actual request. If the client information matches the listener information, then the listener grants a connection to the database server.

Minimum firmware level

7.10

Set storage array iSNS registration

The `set storageArray isnsRegistration` command enables you to list a storage array on either an IPv4 or an IPv6 Internet Storage Name Service (iSNS) server.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax for IPv4

```
set storageArray isnsRegistration=(TRUE | FALSE)
isnsIPv4ConfigurationMethod=[static | dhcp]
isnsIPv4Address=ipAddress
[isnsListeningPort]
```

Syntax for IPv6

```
set storageArray isnsRegistration=(TRUE | FALSE)
isnsIPv6Address=ipAddress
[isnsListeningPort]
```

Parameters

Parameters	Description
`isnsRegistration`	The means of registering the iSCSI target on the iSNS server. Set the parameter to TRUE to list an iSCSI target. When you set this parameter to TRUE you must also use these parameters for IPV4 configurations: • `isnsIPV4ConfigurationMethod` • `isnsIPV4Address` When you set this parameter to TRUE you must also use these parameters for IPV6 configurations: • `isnsIPV6Address` Optionally, you can also use the `isnsListeningPort` parameter to define the port monitor and manage traffic to the server. To remove the registration for the storage array from the iSNS server set this parameter to FALSE.
`isnsIPv4ConfigurationMethod`	The method that you want to use to define the iSNS server configuration. You can enter the IP address for the IPv4 iSNS servers by selecting static. For IPv4, you can choose to have a Dynamic Host Configuration Protocol (DHCP) server select the iSNS server IP address by entering dhcp. To enable DHCP, you must set the `isnsIPv4Address` parameter to 0.0.0.0.

Parameters	Description
`isnsIPv4Address`	The IPv4 address used to connect to the iSNS server. Use this parameter with the `static` value for IPv4 configurations. If you choose to have a DHCP server set the IP address for an IPv4 Internet iSNS server, you must set the `isnsIPv4Address` parameter to `0.0.0.0`.
`isnsIPv6Address`	The IPv6 address used to connect to the iSNS server.
`isnsListeningPort`	The port number that you want to use for the iSNS server listening port. The range of values for the listening port is `49152` to `65535`. The default value is `3205`. The listening port resides on the server and performs these activities: • Monitors incoming client connection requests • Manages traffic to the server When a client requests a network session with a server, the listener receives the actual request. If the client information matches the listener information, then the listener grants a connection to the database server.

Notes

The iSNS protocol facilitates the automated discovery, management, and configuration of iSCSI devices and Fibre Channel devices on a TCP/IP network. iSNS provides intelligent storage discovery and management services comparable to those found in Fibre Channel networks, which allow a commodity IP network to function in a similar capacity as a storage area network. iSNS also facilitates a seamless integration of IP networks and Fibre Channel networks, due to its ability to emulate Fibre Channel fabric services and manage both iSCSI devices and Fibre Channel devices.

The DHCP server passes configuration parameters, such as network addresses, to IP nodes. DHCP enables a client to acquire all of the IP configuration parameters that it needs to operate. DHCP lets you automatically allocate reusable network addresses.

Minimum firmware level

7.10

Set storage array iSNS server refresh

The `set storageArray isnsServerRefresh` command refreshes the network address information for the iSNS server.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

This command is valid for only IPv4.

Syntax

```
set storageArray isnsServerRefresh
```

Parameters

None.

Notes

If the DHCP server is not operating at full capability, or if the DHCP server is unresponsive, the refresh operation can take between two and three minutes to complete.

The `set storageArray isnsServerRefresh` command returns an error if you did not set the configuration method to DHCP. To set the configuration method to DHCP, use the `set storageArray isnsIPV4ConfigurationMethod` command.

Minimum firmware level

7.10

Set storage array controller battery learn cycle

The `set storageArray learnCycleDate controller` command sets controller battery learn cycles.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

(i) To set individual learn cycles for each controller in the storage array, send this command to both controllers.

(i) The learn cycles are not linked together and so a disruption in one controller battery learn cycle will not impact the learn cycle for the battery in the other controller.

(i) A learn cycle might take several hours to complete.

Syntax

```
set storageArray learnCycleDate (controller[(a| b)] )
(daysToNextLearnCycle=numberOfDays |
day=dayOfTheWeek) time=HH:MM
```

Parameters

Parameter	Description
controller	The controller for which you want to specify a battery learn cycle. Valid controller identifiers are `a` or `b`, where `a` is the controller in slot A, and `b` is the controller in slot B. Enclose the controller identifier in square brackets ([ ]). If you do not specify a controller, the controller firmware returns a syntax error. (i) Omitting this parameter sets the learn cycle for both controller batteries in a dual-controller array.
`daysToNextLearnCycle`	Valid values are `0` through `7`, where `0` is immediately and `7` is in seven days. The `daysToNextLearnCycle` parameter takes place up to seven days after the next scheduled learn cycle.
`day`	Valid values for the `day` parameter include the days of the week (`Sunday`, `Monday`, `Tuesday`, `Wednesday`, `Thursday`, `Friday`, and `Saturday`). Setting the day causes the next learn cycle to be scheduled on the specified day, after the currently scheduled learn cycle.
`time`	The time in 24-hour format; for example 8:00 a.m. is entered as `08:00`. Nine o'clock p.m. is entered as `21:00`, and 9:30 p.m. is entered as `21:30`.

Example

```
set storageArray learnCycleDate controller [a] daysToNextLearnCycle=4
time=08:30;
```

Notes

You can set the learn cycle to occur only once during a seven-day period.

The `time` parameter selects a specific time that you want to run the learn cycle. If a value is not entered, the command uses a default value of `00:00` (midnight).

If the day and time specified are in the past, the next learn cycle takes place on the next possible day specified.

Minimum firmware level

7.15

8.30 - added the `controller` parameter.

Set storage array local user password or SYMbol password

The `set storageArray localUsername` command and the `set storageArray symbol` command allow you to set a local user name password or a SYMbol password for a particular role.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin, Support Admin, Security Admin, or Storage Monitor role.

Syntax

```
set storageArray (localUsername={ admin | storage | security | support |
monitor}
| symbol [userRole={admin | monitor}])
password="string" adminPassword="string"
```

Parameters

Parameter	Description
`localUsername`	Allows you to specify the user to change the password. Valid choices are: `admin`, `storage`, `support`, `monitor`, and `security`.
`symbol`	Allows you to change the SYMbol password. Valid choices are: `admin` and `monitor`. ⓘ This is the replacement command for the deprecated `set storageArray password` command.
`password`	Allows you to specify the password for the role.
`adminPassword`	Allows you to specify the admin password, which is required to set any new password.

Examples

```
SMcli -n Array1 -c "set storageArray localUsername=storage
password="newPassword" adminPassword="theAdminPassword";"
SMcli -n Array1 -c "set storageArray localUsername=admin
password="newAdminPassword" adminPassword="theAdminPassword";"
SMcli -n Array1 -c "set storageArray symbol userRole=admin
password="newSymbolPassword" adminPassword="theAdminPassword";"

SMcli completed successfully.
```

Minimum firmware level

8.40 adds the command.

Set storage array login banner

The `set storageArray loginBanner` command allows you to upload a text file to be used as a login banner. The banner text can include an advisory notice and consent message, which is presented to users before they establish sessions in SANtricity System Manager or before they run commands.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
set storageArray loginBanner file="path_to_login_banner"
```

Context

After you load the text file, it is saved to the storage array. The banner text appears before the SANtricity System Manager login screen or before you run commands.

Parameters

Parameter	Description
file	The file path and the file name where the login banner text file is stored. ⓘ The login banner file cannot be empty and must be 5 KB or smaller.

Minimum firmware level

8.41

Set storage array management interface

The `set storageArray managementInterface` command changes the management interface of the controller. Change the management interface type to enforce confidentiality between the storage array and its management software or to access external tools.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
set storageArray managementInterface restOnly={true | false}
```

Parameters

Parameter	Description
restOnly	When set to `true`, indicates that the RESTful interface is the only management interface allowed. This interface enforces an encrypted connection between the storage array and the management software.
	When set to `false`, indicates that the legacy interface between the storage array and the management software is allowed. This interface is not encrypted.
	Some tools that communicate directly with the legacy management interface, such as the SANtricity SMI-S Provider or OnCommand Insight (OCI), will not work unless the `restOnly` parameter is set to `false`. Contact technical support for more information.

Examples

```
SMcli -n Array1 -c "set storageArray managementInterface restOnly=true;"

SMcli completed successfully.
```

Enable or disable ODX

The `set storageArray odxEnabled` command turns on or turns off Offloaded Data Transfer (ODX) for a storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

The storage array comes with ODX turned on. Use this command to turn off ODX if you do not want to run ODX, or if ODX is causing issues with the storage array. The only storage array that is affected is the storage array on which the command is run.

Syntax

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

Parameter

Parameter	Description
`odxEnabled`	The setting to turn on or turn off ODX. To turn on ODX set this parameter to `TRUE`. To turn off ODX set this parameter to `FALSE`. The default setting is that ODX is turned on.

Notes

ODX provides a way to transfer data without using buffered read and buffered write operations and does not require direct host involvement with the data transfer operation. When ODX is not enabled, data is read from the source storage to the host, and then written to the target storage from the host. With ODX enabled, the data transfer operations are directly managed by the storage infrastructure. The data is moved directly from the source storage to the target storage without going through the host.

Minimum firmware level

8.20

Set storage array password length

The `set storageArray passwordlength` command allows the admin user to set a minimum length for all new or updated passwords on the storage array.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
set storageArray passwordLength=<INTEGER>
```

Parameters

Parameter	Description
`password length`	Allows you to set the minimum required length for all new or updated passwords.
`INTEGER`	Allows you to set the minimum required length, between 0 and 30, for all new or updated passwords.

Examples

```
SMcli <array_ip> -u <username> -p <password> -c "set storageArray
passwordLength=0;"

SMcli completed successfully.
```

Minimum firmware level

8.41 adds the command.

Set storage array PQ validation on reconstruct

The `set storageArray pqValidateOnReconstruct` command sets the storage array P/Q validation state on reconstruction. When this capability is enabled, data is reconstructed using both data+P and data+Q, and the results checked for consistency before determining how to proceed.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

This feature applies to disk pools and RAID 6 volume groups, which have dual parity. In this case, there is still redundancy in the volume group or disk pool when a drive fails, so it is possible to check data and parity consistency during reconstruction. If an inconsistency is found during reconstruction and Data Assurance is enabled for the volume, it may be possible to identify the source of the inconsistency so that data can be reconstructed using the remaining drives. If this feature is enabled, and Data Assurance is not enabled for the volume, or if the inconsistency cannot be isolated to a single drive, then the block being reconstructed is marked as unreadable.

The validation may increase reconstruction times for SSD drives, so this feature can be enabled or disabled based on media type. If enabled for a given media type, the feature is applied to all pools and RAID 6 volume groups using that media type.

Syntax

```
set storageArray pqValidateOnReconstruct (enable | disable)
driveMediaType=(hdd | ssd | allMedia)
```

Parameters

Parameter	Description
`pqValidateOnReconstruct`	Modifies the P/Q validate on reconstruction capability.
`enable` or `disable`	Enables or disables P/Q validation on reconstruction.
`driveMediaType`	The drive media type on which to set the P/Q validate on reconstruction capability. The following drive media types are supported: • `hdd` indicates that you want to set the validation state on hard disk drives • `ssd` indicates that you want to set the validation state on solid state disks • `allMedia` indicates that you want to set the validation state on all media in the storage array.

Example with drive media type specified as hard disk drives

```
SMcli -n Array1 -c "set storageArray pqValidateOnReconstruct enable
driveMediaType=hdd;"

SMcli completed successfully.
```

Example with drive media type specified as solid-state drives

```
SMcli -n Array1 -c "set storageArray pqValidateOnReconstruct disable
driveMediaType=ssd;"

SMcli completed successfully.
```

Minimum firmware level

8.42

Set storage array redundancy mode

The `set storageArray redundancyMode` command sets the redundancy mode of the storage array to either simplex or duplex.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameter

Parameter	Description
`redundancyMode`	Use `simplex` mode when you have a single controller. Use `duplex` mode when you have two controllers.

Minimum firmware level

6.10

Set Storage Array Resource Provisioned Volumes

The `set storageArray resourceProvisionedVolumes` command disables the DULBE feature.

Supported Arrays

This command applies to any individual storage array, including the EF600 and EF300 arrays; as long as all SMcli packages are installed.

Roles

To execute this command on an EF600 and EF300 storage array, you must have the Storage Admin role.

Context

Resource provisioning is an available feature that allows large volumes to be initialized quickly.

A resource provisioned volume is a thick volume in an SSD volume group or pool, where drive capacity is

allocated (assigned to the volume) when the volume is created, but the drive blocks are deallocated (unmapped). With a resource provisioned volume, there is no time-bound background initialization. Instead, each RAID stripe is initialized upon the first write to a volume block in the stripe

Resource provisioned volumes are supported only on SSD volume groups and pools, where all drives in the group or pool support the NVMe Deallocated or Unwritten Logical Block Error Enable (DULBE) error recovery capability. When a resource provisioned volume is created, all drive blocks assigned to the volume are deallocated (unmapped). Deallocating blocks can improve SSD wear life and increase maximum write performance. The improvement varies with each drive model and capacity.

Syntax

```
set storageArray resourceProvisionedVolumes=(enable|disable)
```

Parameters

Parameter	Description
`resourceProvisionedVolumes`	The setting to specify if resource provisioning capabilities are enabled. To disable resource provisioning, set this parameter to `disable`. The default value is `enable`. (i) Changing this value only applies to volume groups and pools that are created in the future. It does not change the value of any existing volume groups and pools.

Minimum firmware level

8.63

Set certificate revocation check settings

The `set storageArray revocationCheckSettings` command allows you to enable or disable revocation checking, and configure an Online Certificate Status Protocol (OCSP) server.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

The OCSP server checks for any certificates that the Certificate Authority (CA) has revoked before their scheduled expiration date. You might want to enable revocation checking in cases where the CA improperly issued a certificate or if a private key is compromised.

> ℹ️ Make sure a DNS server is configured on both controllers, which allows you to use a fully qualified domain name for the OCSP server.

After you enable revocation checking, the storage array denies an attempted connection to a server with a revoked certificate.

Syntax

```
set storageArray revocationCheckSettings ([revocationCheckEnable =
boolean] &| [ocspResponderUrl=stringLiteral])
```

Parameters

Parameter	Description
revocationCheckEnable	Set to `true` to enable certificate revocation checking.
ocspResponderUrl	The URL of the OCSP responder server to be used for the certificate revocation check. ℹ️ Specifying an OCSP responder address overrides the OCSP address found in the certificate file.

Minimum firmware level

8.42

Set internal storage array security key

The `set storageArray securityKey` command sets the security key that is used throughout the storage array to implement the Drive Security feature.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

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.

> (i) This command applies only to internal key management.

Syntax

```
set storageArray securityKey
```

Parameters

None.

Notes

Security-capable drives have hardware to accelerate cryptographic processing and each has a unique drive key. A security-capable drive behaves like any other drive until it is added to a secured volume group, at which time the security-capable drive becomes security-enabled.

Whenever a security-enabled drive is powered on, it requires the correct security key from the controller before it can read or write data. So, a security-enabled drive uses two keys: the drive key that encrypts and decrypts the data and the security key that authorizes the encryption and decryption processes. The `set storageArray securityKey` command commits the security key to all of the controllers and security-enabled drives in the storage array. The full disk encryption feature ensures that if a security-enabled drive is physically removed from a storage array, its data cannot be read by any other device unless the security key is known.

Minimum firmware level

7.50

Update storage array syslog configuration

The `set storageArray syslog` command allows you to change the syslog server address, protocol, or port number.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
set storageArray syslog id="<id>"
serverAddress="<address>"
port=<port> protocol=("udp" | "tcp" | "tls")
components=(componentName=("auditLog") ...)
```

Parameters

Parameter	Description
`serverAddress`	Syslog receiver hostname or IP address.
`port`	Syslog receiver port number.
`protocol`	Syslog transmission protocol. Acceptable values include UDP, TCP, or TLS.
`components`	List of component entries that will be logged to the syslog server. Currently, only audit logs are supported.
`componentName`	Component name; currently only "auditLog" is supported.

Example

```
SMcli -n Array1 -c "set storageArray syslog
id=\"331998fe-3154-4489-b773-b0bb60c6b48e\"
serverAddress=\"192.168.2.1\" port=514 protocol=\"udp\"
components=(componentName=\"auditLog\");"
ID: 331998fe-3154-4489-b773-b0bb60c6b48e Server Address: 192.168.2.1
Port: 514 Protocol: udp
Components
1. Component Name: auditLog
SMcli completed successfully.
```

Minimum firmware level

8.42

Set storage array time

The `set storageArray time` 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.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
set storageArray time
```

Parameters

None.

Minimum firmware level

6.10

Set storage array tray positions

The `set storageArray trayPositions` 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.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameter

Parameter	Description
`trayPositions`	A list of all of the tray IDs. The sequence of the tray IDs in the list defines the positions for the controller tray and the drive trays in a storage array. Valid values are `0` to `99`. Enter the tray ID values separated with a space. Enclose the list of tray ID values in parentheses. For storage arrays where the controller tray has a predefined identifier that is not in the range of valid tray position values, use the `controller` value.

Notes

This command defines the position of a tray in a storage array by the position of the tray ID in the `trayPositions` list. For example, if you have a controller tray with an ID set to 84 and drive trays with IDs set to 1, 12, and 50, the `trayPositions` sequence (`84 1 12 50`) places the controller tray in the first position, drive tray 1 in the second position, drive tray 12 in the third position, and drive tray 50 in the fourth position. The `trayPositions` sequence (`1 84 50 12`) places the controller tray in the second position, drive tray 1 in the first position, drive tray 50 in the third position, and drive tray 12 in the fourth position.

(i) You must include all of the trays in the storage array in the list defined by the `trayPositions` parameter. If the number of trays in the list does not match the total number of trays in the storage array, an error message appears.

(i) The management software visually shows the first position on top, and the other positions in relative order beneath with the last position on the bottom.

Minimum firmware level

6.10

For 6.14 and 6.16, `controller` is not a valid value.

Set storage array unnamed discovery session

The `set storageArray unnamedDiscoverySession` command enables the storage array to participate in unnamed discovery sessions.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameter

Parameter	Description
`unnamedDiscoverySession`	This parameter turns on or turns off unnamed discovery sessions. Set the parameter to `TRUE` to turn on unnamed discovery sessions. Set the parameter to `FALSE` to turn off unnamed discovery sessions.

Notes

Discovery is the process where initiators determine the targets that are available. Discovery occurs at power-on/initialization and also if the bus topology changes, for example, if an extra device is added.

An unnamed discovery session is a discovery session that is established without specifying a target ID in the login request. For unnamed discovery sessions, neither the target ID nor the target portal group ID are available to the targets.

Minimum firmware level

7.10

Set storage array user session

The `set storageArray userSession` command allows you to set a timeout in System Manager, so that users' inactive sessions are disconnected after a specified time.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

Use this command to perform one of these operations:

- Set a timeout in seconds for user sessions. The minimum timeout value is 900 seconds (15 minutes).
- Turn off session timeouts by setting the value to 0.

Parameters

None.

Syntax

```
set storageArray userSession sessionTimeout=n
```

Minimum firmware level

8.41

Enable or disable VAAI

The `set storageArray vaaiEnabled` command turns on or turns off VMware vStorage API Array Architecture (VAAI) for a storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

The storage array comes with VAAI turned on. Use this command to turn off VAAI if you do not want to run VAAI, or if VAAI is causing issues with the storage array. The only storage array that is affected is the storage array on which the command is run.

Syntax

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

Parameter

Parameter	Description
`vaaiEnabled`	The setting to turn on or turn off VAAI. To turn on VAAI set this parameter to `TRUE`. To turn off VAAI set this parameter to `FALSE`. The default setting is that VAAI is turned on.

Notes

ⓘ VAAI enables some storage tasks to be offloaded from the server hardware to a storage array. Offloading the storage tasks to a storage array increases host performance by reducing the tasks the host must perform.

ⓘ View the VAAI setting using the `show storageArray odxSetting` name.

Minimum firmware level

8.20

Set storage array

The `set storageArray` command defines the properties of the storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

ⓘ With firmware version 8.10 the `cacheFlushStop` parameter is deprecated and will be removed in a future release of storage management software.

Syntax

```
set storageArray
([autoLoadBalancingEnable=(TRUE | FALSE)]|
[autoSupportMaintenanceWindow AutoSupport Maintenance Window parameters]
[autoSupport schedule AutoSupport Schedule Parameters]|
[autoSupportConfig (enable | disable)]|
[autoSupportOnDemand (enable | disable)]|
[autoSupportRemoteDiag (enable |disable)]|
[cacheBlockSize=cacheBlockSizeValue]|
[cacheFlushStart=cacheFlushStartSize]|
[cacheFlushStop=cacheFlushStopSize]|
[cacheMirrorDataAssuranceCheckEnable=(TRUE | FALSE)]|
[controllerHealthImageAllowOverWrite]|
[defaultHostType=("hostTypeName" |"hostTypeIdentifier")] |
[directoryServer directory server parameters]|
[externalKeyManagement external key management parameters]|
[failoverAlertDelay=delayValue]|
[hostConnectivityReporting (enable | disable)]|
[icmpPingResponse=(TRUE | FALSE)]|
[isnsIPV4ConfigurationMethod isns IPv4 Config Method Parameters]|
[isnsIPv6Address=ipAddress]|
[isnsListeningPort=listeningPortIPAddress]]|
[isnsRegistration=(TRUE | FALSE)]|
[learnCycleDate learn cycle parameters]|
[localUsername=local user name parameters]|
[loginBanner file="path_to_login_banner"]|
[managementInterface restOnly={true | false}]|
[mediaScanRate=(disabled | 1-30)]|
[odxEnabled=(TRUE | FALSE)]|
[password="password"]|
[passwordLength=<INTEGER>]|
[pqValidateOnReconstruct P/Q Validate on Reconstruct parameters]|
[redundancyMode=(simplex | duplex)]|
[revocationCheckSettings revocation check settings parameters]|
[securityKey]|
[symbol SYMbol user name and password parameters]|
[syslog syslog parameters]|
[time]|
[trayPositions=(controller | trayID ... trayIDn)]|
[unnamedDiscoverySession=(TRUE | FALSE)]|
[userLabel="storageArrayName"]|
[userSession sessionTimeout=n]|
[vaaiEnabled=(TRUE | FALSE)])
```

Parameters

Parameter	Description
`autoLoadBalancingEnable`	This parameter enables auto-load balancing on the controller. To enable the option, set this parameter to `TRUE`. To disable the option, set this parameter to `FALSE`. ⓘ When the Automatic Load Balancing feature is enabled, the Host Connectivity Reporting feature will also be enabled.
`autoSupport schedule`	Sets the daily and weekly times and days of the week that AutoSupport messages are sent.
`autoSupportConfig`	The setting for automatically collecting support data each time the firmware detects a critical MEL event. This parameter has these values: • `enable` — Turns on the collection of support data • `disable` — Turns off the collection of support data Use this parameter under these conditions only: • The AutoSupport (ASUP) feature is not available on the storage array • To support configurations on storage arrays that previously used this parameter ⓘ You cannot use this parameter with the ASUP commands.
`autoSupportMaintenanceWindow`	Turns on or turns off the AutoSupport maintenance window feature and configures the feature.
`cacheBlockSize`	The cache block size that is used by the controller for managing the cache. Valid values are `4` (4 KB), `8` (8 KB), `16` (16 KB), or `32` (32 KB).
`cacheMirrorDataAssuranceCheckEnable`	This parameter enables cache mirror data assurance check on the controller. To enable the option, set this parameter to `TRUE`. To disable the option, set this parameter to `FALSE`.

Parameter	Description
cacheFlushStart	The percentage of unwritten data in the cache that causes a cache flush. Use integer values from `0` to `100` to define the percentage. The default value is `80`.
cacheFlushStop	ⓘ This parameter is deprecated and will be removed in a future release. The percentage of unwritten data in the cache that stops a cache flush. Use integer values from `0` to `100` to define the percentage. This value must be less than the value of the `cacheFlushStart` parameter.
controllerHealthImageAllowOverWrite	Sets a flag on a controller to allow a new controller health image to overwrite an existing controller health image on storage arrays that support the controller health image feature.
defaultHostType	The default host type of any unconfigured host port to which the controllers are connected. To generate a list of valid host types for the storage array, run the `show storageArray hostTypeTable` command. Host types are identified by a name or a numerical index. Enclose the host type name in double quotation marks (" "). Do not enclose the host type numerical identifier in double quotation marks.
directoryServer	Updates the directory server configuration, including role mappings.
externalKeyManagement	Configures the external key management server address and port number
failoverAlertDelay	The failover alert delay time in minutes. The valid values for the delay time are `0` to `60` minutes. The default value is `5`.

Parameter	Description
`hostConnectivityReporting`	This parameter enables host connectivity reporting on the controller. To enable the option, set this parameter to `enable`. To disable the option, set this parameter to `disable`. ⓘ If you attempt to disable Host Connectivity Reporting when Automatic Load Balancing is enabled, you receive an error. First disable the Automatic Load Balancing feature, then disable the Host Connectivity Reporting feature. ⓘ You can keep Host Connectivity Reporting enabled when Automatic Load Balancing is disabled.
`icmpPingResponse`	This parameter turns on or turns off Echo Request messages. Set the parameter to `TRUE` to turn on Echo Request messages. Set the parameter to `FALSE` to turn off Echo Request messages.
`isnsIPv4ConfigurationMethod`	The method that you want to use to define the iSNS server configuration. You can enter the IP address for the IPv4 iSNS servers by selecting `static`. For IPv4, you can choose to have a Dynamic Host Configuration Protocol (DHCP) server select the iSNS server IP address by entering `dhcp`. To enable DHCP, you must set the `isnsIPv4Address` parameter to `0.0.0.0`.
`isnsIPv6Address`	The IPv6 address that you want to use for the iSNS server.

Parameter	Description

`isnsListeningPort`	The IP address that you want to use for the iSNS server listening port. The range of values for the listening port is `49152` to `65535`. The default value is `53205`.
	
	The listening port resides on the server and performs these activities:
	
	   • Monitors incoming client connection requests
	   • Manages traffic to the server
	
	When a client requests a network session with a server, the listener receives the actual request. If the client information matches the listener information, then the listener grants a connection to the database server.

`isnsRegistration`	This parameter lists the storage array as an iSCSI target on the iSNS server. To register the storage array on the iSNS server, set this parameter to `TRUE`. To remove the storage array from the iSNS server, set this parameter to `FALSE`. ⓘ You cannot use the `isnsRegistration` parameter with any other parameter when running the `set storageArray` command. For more information about iSNS registration, refer to the `set storageArray isnsRegistration` command.
`learnCycleDate`	Sets controller battery learn cycles.
`localUsername`	Allows you to set a local user name password or a SYMbol password for a particular role.
`loginBanner`	Allows you to upload a text file to be used as a login banner. The banner text can include an advisory notice and consent message, which is presented to users before they establish sessions in SANtricity System Manager or before they run commands
`managementInterface`	Changes the management interface of the controller. Change the management interface type to enforce confidentiality between the storage array and its management software or to access external tools.

Parameter	Description
mediaScanRate	The number of days over which the media scan runs. Valid values are disabled , which turns off the media scan, or 1 day to 30 days, where 1 day is the fastest scan rate, and 30 days is the slowest scan rate. A value other than disabled or 1 to 30 does not allow the media scan to function.
odxEnabled	Turns on or turns off Offloaded Data Transfer (ODX) for a storage array.
password	The password for the storage array. Enclose the password in double quotation marks (" "). (i) With the 8.40 release, this parameter is deprecated. Use the localUsername or the symbol symbol parameters, along with the password or adminPassword parameters, instead.
passwordLength	Allows you to set the minimum required length for all new or updated passwords. Use a value between 0 and 30.
pqValidateOnReconstruct	Modifies the P/Q validate on reconstruction capability.
redundancyMode	Use simplex mode when you have a single controller. Use duplex mode when you have two controllers.
revocationCheckSettings	Allows you to enable or disable revocation checking, and configure an Online Certificate Status Protocol (OCSP) server.
securityKey	Sets the internal security key that is used throughout the storage array to implement the Drive Security feature. (i) Used for an internal security key. When an external key management server is used, use the create storageArray securityKey command.
symbol	Allows you to set a SYMbol password for a particular role.

Parameter	Description
`syslog`	Allows you to change the syslog server address, protocol, or port number.
`time`	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.
`trayPositions`	A list of all of the tray IDs. The sequence of the tray IDs in the list defines the positions for the controller tray and the drive trays in a storage array. Valid values are `0` to `99`. Enter the tray ID values separated with a space. Enclose the list of tray ID values in parentheses. For storage arrays where the controller tray has a predefined identifier that is not in the range of valid tray position values, use the `controller` value. ⓘ The `controller` option is not valid after firmware release 6.14.
`unnamedDiscoverySession`	Enables the storage array to participate in unnamed discovery sessions.
`userLabel`	The name for the storage array. Enclose the storage array name in double quotation marks (" ").
`userSession`	Allows you to set a timeout in System Manager, so that users' inactive sessions are disconnected after a specified time.
`vaaiEnabled`	Turns on or turns off VMware vStorage API Array Architecture (VAAI) for a storage array

Notes

Except for the `isnsRegistration`, when you use this command you can specify one or more of the optional parameters.

Auto Support data

ⓘ You cannot use this parameter with the ASUP commands.

When enabled, the `set storageArray autoSupportConfig` command causes all configuration and state information for the storage array to be returned each time a critical Major Event Log (MEL) event is detected. The configuration and state information is returned in the form of an object graph. The object graph contains all relevant logical and physical objects and their associated state information for the storage array.

The `set storageArray autoSupportConfig` command collects configuration and state information in this way:

- Automatic collection of the configuration and state information occurs every 72 hours. The configuration and state information is saved to the storage array zip archive file. The archive file has a time stamp that is used to manage the archive files.

- Two storage array zip archive files are maintained for each storage array. The zip archive files are kept on a drive. After the 72-hour time period is exceeded, the oldest archive file is always overwritten during the new cycle.

- After you enable automatic collection of the configuration and state information using this command, an initial collection of information starts. Collecting information after the you issue the command makes sure that one archive file is available and starts the time stamp cycle.

You can run the `set storageArray autoSupportConfig` command on more than one storage array.

Cache block size

When you define cache block sizes, use the 4-KB cache block size for storage arrays that require I/O streams that are typically small and random. Use the 8-KB cache block size when the majority of your I/O streams are larger than 4 KB but smaller than 8 KB. Use the 16-KB cache block size or the 32-KB cache block size for storage arrays that require large data transfer, sequential, or high-bandwidth applications.

The `cacheBlockSize` parameter defines the supported cache block size for all of the volumes in the storage array. Not all controller types support all cache block sizes. For redundant configurations, this parameter includes all of the volumes that are owned by both controllers within the storage array.

Cache flush start

When you define values to start a cache flush, a value that is too low increases the chance that data needed for a host read is not in the cache. A low value also increases the number of drive writes that are necessary to maintain the cache level, which increases system overhead and decreases performance.

Default host type

When you define host types, if Storage Partitioning is enabled, the default host type affects only those volumes that are mapped in the default group. If Storage Partitioning is not enabled, all of the hosts that are attached to the storage array must run the same operating system and be compatible with the default host type.

Media scan rate

Media scan runs on all of the volumes in the storage array that have Optimal status, do not have modification operations in progress, and have the `mediaScanRate` parameter enabled. Use the `set volume` command to enable or disable the `mediaScanRate` parameter.

Password

Passwords are stored on each storage array. For best protection, the password must meet these criteria:

- The password must be between eight and 30 characters long.
- The password must contain at least one uppercase letter.
- The password must contain at least one lowercase letter.
- The password must contain at least one number.

- The password must contain at least one non-alphanumeric character, for example, < > @ +.

> **(i)** If you are using full disk encryption drives in your storage array, you must use these criteria for your storage array password.

> **(i)** You must set a password for your storage array before you can create a security key for encrypted full disk encryption drives.

Minimum firmware level

5.00 adds the `defaultHostType` parameter.

5.40 adds the `failoverAlertDelay` parameter.

6.10 adds the `redundancyMode`, `trayPositions`, and `time` parameters.

6.14 adds the `alarm` parameter.

7.10 adds the `icmpPingResponse`, `unnamedDiscoverySession`, `isnsIPv6Address`, and `isnsIPv4ConfigurationMethod` parameters.

7.15 adds more cache block sizes and the `learnCycleDate` parameter.

7.86 removes the `alarm` parameter because it is no longer used, and adds the `coreDumpAllowOverWrite` parameter.

8.10 deprecates the `cacheFlushStop` parameter.

8.20 adds the `odxEnabled` and `vaaiEnabled` parameters.

8.20 updates the `cacheBlockSize` parameter to add the `cacheBlockSizeValue` of 4 (4 KB).

8.20 replaces the `coreDumpAllowOverWrite` parameter with the `controllerHealthImageAllowOverWrite` parameter.

8.30 adds the `autoLoadBalancingEnable` parameter.

8.40 adds the `localUsername` parameter (used with a user name variable and either the `password` or `adminPassword` parameter. Also adds the `symbol` parameter (used with a user name variable and either the `password` or `adminPassword` parameter.

8.40 deprecates the `password` and `userRole` standalone parameters.

8.40 adds the `managementInterface` parameter.

8.40 adds the `externalKeyManagement` parameter.

8.41 adds the `cacheMirrorDataAssuranceCheckEnable`, `directoryServer`, `userSession`, `passwordLength`, and `loginBanner` parameters.

8.42 adds the `pqValidateOnReconstruct`, `syslog`, `hostConnectivityReporting`, and

`revocationCheckSettings` parameters.

Set synchronous mirroring

The `set syncMirror` command defines the properties for a remote-mirrored pair.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, and E5700 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800 or E5700 storage array, you must have the Storage Admin role.

Context

> ⓘ 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)]
```

Parameters

Parameter	Description
`localVolume`	The name of the local volume for which you want to define properties. Enclose the primary volume name in square brackets ([ ]). If the primary volume name has special characters or numbers, you must enclose the primary volume name in double quotation marks (" ") inside square brackets.

Parameter	Description
localVolumes	The names of several local volumes for which you want to define properties. Enter the names of the volumes using these rules: • Enclose all of the names in square brackets ([ ]). • Separate each of the names with a space. If the volume names have special characters or consist only of numbers, enter the names using these rules: • 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.
role	The setting for the local volume to act as the primary volume or the secondary volume. To define the volume as the primary volume, set this parameter to `primary`. To define the volume as the secondary volume, set this parameter to `secondary`. This parameter applies only when the volume is part of a mirror relationship.
syncPriority	The priority that full synchronization has relative to host I/O activity. Valid values are `highest`, `high`, `medium`, `low`, or `lowest`.
autoResync	The settings for automatic resynchronization between the primary volumes and the secondary volumes of a remote-mirrored pair. This parameter has these values: • `enabled` — Automatic resynchronization is turned on. You do not need to do anything further to resynchronize the primary volume and the secondary volume. • `disabled` — Automatic resynchronization is turned off. To resynchronize the primary volumes and the secondary volume, you must run the `resume syncMirror` command.
writeOrder	This parameter defines write order for data transmission between the primary volume and the secondary volume. Valid values are `preserved` or `notPreserved`.

Parameter	Description
`writeMode`	This parameter defines how the primary volume writes to the secondary volume. Valid values are `synchronous` or `asynchronous`.
`force`	The role reversal is forced if the communications link between the storage arrays is down and promotion or demotion on the local side results in a dual-primary condition or a dual-secondary condition. To force a role reversal, set this parameter to `TRUE`. The default value is `FALSE`. ⓘ Use the `force` parameter only when using the `role` parameter.

Notes

When you use this command, you can specify one or more of the optional parameters.

Synchronization priority defines the amount of system resources that are used to synchronize the data between the primary volumes and the secondary volumes of a mirror relationship. If you select the highest priority level, the data synchronization uses the most system resources to perform the full synchronization, which decreases the performance for host data transfers.

The `writeOrder` parameter applies only to asynchronous write modes and makes them become part of a consistency group. Setting the `writeOrder` parameter to `preserved` causes the remote-mirrored pair to transmit data from the primary volume to the secondary volume in the same order as the host writes to the primary volume. In the event of a transmission link failure, the data is buffered until a full synchronization can occur. This action can require additional system overhead to maintain the buffered data, which slows operations. Setting the `writeOrder` parameter to `notPreserved` frees the system from having to maintain data in a buffer, but it requires forcing a full synchronization to make sure that the secondary volume has the same data as the primary volume.

Minimum firmware level

6.10

Configure syslog settings

The `set syslog` command configures the syslog alert information. You can configure the event monitor to send alerts to the syslog server whenever an alertable event occurs.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage

Admin role.

Context

- The syslog server address must be available. This address can be a fully qualified domain name, an IPv4 address, or an IPv6 address.

- The UDP port number of the syslog server must be available. This port is typically 514.

Syntax

```
set syslog [defaultFacility=facilityNumber]
| [defaultTag=defaultTag]
| [syslogFormat=rfc3164|rfc5424]
| (serverAddresses=(serverAddress:portNumber ... serverAddress:portNumber)
| addServerAddresses=(serverAddress:portNumber ...
serverAddress:portNumber))
```

Parameters

Parameter	Description
`defaultFacility`	Optional. Allows you to specify the default facility number. The default facility must be a numerical value between 0 and 23.
`defaultTag`	Optional. Allows you to specify the default tag. Enclose string in quotes.
`syslogFormat`	The messaging format used for the syslog messages. The value may be one of the following: • `rfc3164` - RFC 3164 compliant format • `rfc5424` - RFC 5424 compliant format
`serverAddresses`	Allows you to set one or more syslog server addresses with associated port numbers. Using this set option will clear out existing server addresses. A syslog server address can be a fully qualified domain name, IPv4 address, or IPv6 address. The UDP Port must be a numerical value between 0 and 65535. Typically, the UDP Port for syslog is 514. Enclose all the addresses in parentheses. If you enter more than one address, then separate them with a space.

Parameter	Description
addServerAddresses	Allows you to add one or more syslog server addresses with associated port numbers. Using this set option will not clear out existing server addresses. A syslog server address can be a fully qualified domain name, IPv4 address, or IPv6 address. The UDP Port must be a numerical value between 0 and 65535. Typically, the UDP Port for syslog is 514. Enclose all the addresses in parentheses. If you enter more than one address, then separate them with a space.

Examples

```
SMcli -n Array1 -c "set syslog
serverAddresses=("ICTM1402S02H2.company.com:22");"

SMcli -n Array1 -c "set syslog
addServerAddresses=("serverName1.company.com:514"
"serverName2.company.com:514");"

SMcli completed successfully.
```

Minimum firmware level

8.40

11.70.1 added the `syslogFormat` parameter to specify the Syslog message format.

Set target properties

The `set target` command changes the properties for an iSCSI/iSER target, including authentication method and alias name.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

ⓘ This command replaces the deprecated Set iSER target and Set iSCSI target properties commands.

Syntax

```
set target (["targetAliasName"] | <"targetQualifiedName">)
(authenticationMethod=(none | chap chapSecret="newSecurityKey") |
targetAlias="newAliasName")
```

Parameters

Parameter	Description
target	Allows you to specify which target you want to set. You can either specify the target's alias name or qualified name (e.g., iqn). Enclose the target identifier in double quotations marks (" "). You also must enclose the identifier in square brackets ([ ]) if it is an alias or angle brackets (< >) if it is a qualified name.
authenticationMethod	Allows you to set the means of authenticating your session. Valid choices are: none or chap.
chapSecret	Allows you to enter the security key to authenticate a peer connection. This is applicable only when authenticationMethod is set to chap.
targetAlias	Allows you to specify the new alias name for the target. Enclose the name in double quotation marks (" ").

Minimum firmware level

8.41

Set thin volume attributes

The `set volume` command defines the properties for a thin volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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][hostReportingPolicy=(standard |
thin)]
```

Parameters

Parameter	Description
`volume`	The name of the volume for which you want to define properties. 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.
`volume`	The World Wide Identifier (WWID) of the volume for which you want to define properties. Enclose the WWID in double quotation marks (" ") inside angle brackets (< >).
`volumes`	The names of several volumes for which you want to define properties. All of the volumes will have the same properties. Enter the names of the volumes using these rules: • Enclose all of the names in square brackets ([ ]). • Separate each of the names with a space. If the volume names have special characters or consist only of numbers, enter the names using these rules: • 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.

Parameter	Description
`newCapacity`	This parameter increases the virtual capacity of the thin volume. The virtual capacity is the value that the volume will report to a host that is mapped to the volume. Values smaller or equal to the existing capacity will cause an error. Size is defined in units of `bytes`, `KB`, `MB`, `GB`, or `TB`. The minimum virtual capacity is 32 MB. The maximum virtual capacity is 256 TB.
`repositoryMaxCapacity*`	This parameter sets the maximum capacity of the repository volume. The value must not be smaller than the physical capacity of the repository volume. If the new value results in a reduction in capacity to a level below the warning threshold, the command will produce an error. ⓘ The command `repositoryMaxCapacity` works with `repositoryExpansionPolicy=automatic`.
`repositoryExpansionPolic*`	This parameter sets the expansion policy to `automatic` or `manual`.When you change the policy from `automatic` to `manual`, the maximum capacity value (quota) changes to the physical capacity of the repository volume.
`warningThresholdPercent`	The percentage of thin volume capacity at which you receive a warning alert that the thin volume is nearing full. Use integer values. For example, a value of 70 means 70 percent. Valid values are from 1 to 100. Setting this parameter to 100 disables warning alerts.
`addRepositoryCapacity`	This parameter allocates capacity from the free extent of the disk pool. If insufficient space is available the command fails. ⓘ The command `addRepositoryCapacity` works with `repositoryExpansionPolicy=manual`.

Parameter	Description
`hostReportingPolicy`	This parameter changes the way in which the thin volume is reported to the host. Valid values are `standard` or `thin`.

Notes

When you use this command, you can specify one or more of the optional parameters.

The following table lists the capacity limits for a thin volume.

Type of Capacity	Size
Minimum virtual capacity	32 MB
Maximum virtual capacity	256 TB
Minimum physical capacity	4 GB
Maximum physical capacity	257 TB

Thin volumes support all of the operations that standard volumes do with the following exceptions:

- You cannot change the segment size of a thin volume.
- You cannot enable the pre-read redundancy check for a thin volume.
- You cannot use a thin volume as the target volume in a volume copy.
- You cannot use a thin volume in a Synchronous Mirroring operation.

If you want to change a thin volume to a standard volume, use the volume copy operation to create a copy of the thin volume. The target of a volume copy is always a standard volume.

Minimum firmware level

7.83

Set tray attribute

The `set tray` command sets user-defined attributes for an tray.

Syntax

```
set tray [trayID] (chassisName | assetTag)="userID"
```

Parameters

Parameter	Description
`tray`	Identifies a specific tray for which to set the attribute. Tray ID values are 0 to 99. You must put brackets ([ ]) around the enclosure ID value.
`chassisName`	Chassis name or number to give the new enclosure. Chassis names can be any combination of alphanumeric characters with a maximum length of 32 characters. Alphabetical characters can be uppercase or lowercase. You can also use the underscore character (_) and the hyphen (-) character. You cannot use spaces in a chassis name. You must put quotation marks (" ") around the chassis name.
`assetTag`	Asset tag name or number to give the new enclosure. Asset tags can be any combination of alphanumeric characters with a maximum length of ten characters. Alphabetical characters can be uppercase or lowercase. You can also use the underscore character (_) and the hyphen (-) character. You cannot use spaces in an asset tag name. You must put quotation marks (" ") around the asset tag name.

Minimum firmware level

6.16

Set drawer service action allowed indicator

The `set tray drawer` command turns on or turns off the Service Action Allowed indicator light on a drawer that holds drives.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Drawers are used in high-capacity drive trays. The drawers slide out of the drive tray to provide access to the drives. Use this command only for drive trays that use drawers. 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 tray [trayID] drawer [drawerID]
serviceAllowedIndicator=(on | off | forceOnWarning)
```

Parameters

Parameter	Description
`tray`	The tray where the drawer resides. Tray ID values are `0` to `99` . Enclose the tray ID value in square brackets ([ ]). If you do not enter a tray ID value, the tray ID of the controller tray is the default value.
`drawer`	The location of the drawer for which you want to turn on or turn off the Service Action Allowed Indicator light. Drawer ID values are `1` to `5`. Enclose the drawer ID value in square brackets ([ ]).
`serviceAllowedIndicator`	The setting to turn on or turn off the Service Action Allowed indicator light. To turn on the Service Action Allowed indicator light, set this parameter to `on`. To turn off the Service Action Allowed indicator light, set this parameter to `off`. For information about using `forceOnWarning`, see the Notes.

Notes

Before you can enter this command, the drive tray must meet these conditions:

- The drive tray cannot be over temperature.
- The fans must have a status of Optimal.
- All drive tray components must be in place.
- The volumes in the drive drawer cannot be in a Degraded state. If you remove drives from the drive drawer and a volume is already in a Degraded state, the volume can fail.

> ⓘ   Do not issue this command if you cannot meet any of these conditions.

All volumes with drives in the affected drive drawer are checked to make sure that the volumes have drawer loss protection before the command is sent. If the volumes have drawer loss protection, the Set Service Action Allowed command proceeds without stopping I/O activity to the volume.

If any volumes in the affected drawer do not have drawer loss protection, you must stop I/O activity to those volumes. A warning appears, which indicates that this command should not be completed.

To turn on or turn off the Service Action Allowed indicator light for the entire high-capacity drive tray, use the `set tray serviceAllowedIndicator` command.

Use of the forceOnWarning parameter

If you are preparing a component for removal and want to override the warning that the volumes do not have drawer loss protection, enter this parameter:

```
serviceAllowedIndicator=forceOnWarning
```

The `forceOnWarning` parameter sends the request to prepare to remove a component to the controller firmware, and forces the `set drawer serviceAllowedIndicator` command to proceed.

> (i) This parameter marks all drives in the drawer inaccessible and could result in failed volumes and complex recovery, including the necessity to reboot the host. Use this parameter with caution.

Minimum firmware level

7.60

Set tray identification

The `set tray` command sets the tray ID of a controller tray, a controller-drive tray, or a drive tray in a storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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
```

Parameters

Parameter	Description
`tray`	The serial number of the controller tray, controller-drive tray, or the drive tray for which you are setting the tray ID. Serial numbers can be any combination of alphanumeric characters and any length. Enclose the serial number in double quotation marks (" ").
`id`	The value for the controller tray tray ID, controller-drive tray tray ID, or the drive tray tray ID. Tray ID values are `0` through `9` or `10` through `99`.

> **(i)** For the DE5600, DE1600, and DE6600 enclosures, precede the serial number with the text string "SN" and a space. For example, `SN SV23802522.`

> **(i)** You do not need to enclose the tray ID value in parentheses.

> **(i)** Tray values of `00` through `09` are rejected by the controller. Use `0` through `9` to specify those values.

Notes

This command originally supported the CE6998 controller tray. The CE6998-series controller trays can connect to a variety of drive trays, including those whose tray IDs are set by switches. When connecting a CE6998-series controller tray to drive trays whose tray IDs are set by switches, valid values for tray IDs for the controller tray are `80` through `99`. This range avoids conflicts with tray IDs that are used for attached drive trays.

Set tray service action allowed indicator

The `set tray serviceAllowedIndicator` 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.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Context

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)] |
fanCanister [(left | right)]   |
powerCanister [(top | bottom)] |
serviceAllowedIndicator=(on | off)
```

Parameters

Parameter	Description
`tray`	The tray where the power-fan canister, the interconnect canister, the ESM canister, or the battery canister resides. Tray ID values are `0` to `99`. Enclose the tray ID value in square brackets ([ ]). If you do not enter a tray ID value, the tray ID of the controller tray is the default value.
`powerFan`	The Service Action Allowed indicator light on the power-fan canister that you want to turn on or turn off. Valid power-fan canister identifiers are `left`, `right`, `top`, or `bottom`. Enclose the power-fan canister identifier in square brackets ([ ]).
`interconnect`	The Service Action Allowed indicator light for the interconnect-battery canister.
`esm`	The Service Action Allowed indicator light for an ESM canister. Valid ESM canister identifiers are `left`, `right`, `top`, or `bottom`.
`battery`	The Service Action Allowed indicator light for a battery. Valid battery identifiers are `left` or `right`.

Parameter	Description
`fanCanister`	The Service Action Allowed indicator light for a fan canister. Valid fan canister identifiers are `left` or `right`.
`powerCanister`	The Service Action Allowed indicator light for a power canister. Valid power canister identifiers are `top` or `bottom`.
`serviceAllowedIndicator`	The setting to turn on or turn off the Service Action Allowed indicator light. To turn on the Service Action Allowed indicator light, set this parameter to `on`. To turn off the Service Action Allowed indicator light, set this parameter to `off`.

Notes

This command was originally defined for use with the CE6998 controller tray. This command is not supported by controller trays that were shipped before the introduction of the CE6998 controller tray.

Example

This command turns on the Service Action Allowed indicator light for the left ESM in tray 5 with the IP address of 155.155.155.155.

```
SMcli 123.145.167.214 123.145.167.215 -c "set tray [5]
ESM [left] serviceAllowedIndicator=on;"
```

Minimum firmware level

6.14 adds these parameters:

- `powerFan`
- `interconnect`

6.16 adds these parameters:

- `tray`
- `esm`

7.60 adds the identifiers `top` and `bottom`.

7.60 adds the `powerCanister` and `fanCanister` parameters.

Set volume attributes for a volume in a volume group

The `set volume` command defines the properties for volumes in a volume group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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.

> (i) 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)
```

```
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)
```

```
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)
```

```
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)
readCacheEnabled=(TRUE | FALSE)
writeCacheEnabled=(TRUE | FALSE)
cacheReadPrefetch=(TRUE | FALSE)
dataAssuranceDisabled=(TRUE | FALSE)
```

```
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)
readCacheEnabled=(TRUE | FALSE)
writeCacheEnabled=(TRUE | FALSE)
cacheReadPrefetch=(TRUE | FALSE)
dataAssuranceDisabled=(TRUE | FALSE)
```

```
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)
readCacheEnabled=(TRUE | FALSE)
writeCacheEnabled=(TRUE | FALSE)
cacheReadPrefetch=(TRUE | FALSE)
reservedFutureOption1=(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 ["volumeName"] | volume <wwID>)
addCapacity=volumeCapacity
[addDrives=(trayID1,drawerID1,slotID1
... trayIDn,drawerIDn,slotIDn)]
redundancyCheckEnabled=(TRUE | FALSE)
segmentSize=segmentSizeValue
userLabel=volumeName
preReadRedundancyCheck=(TRUE | FALSE)
```

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

Parameters

Parameter	Description
`allVolumes`	This parameter sets the properties for all of the volumes in the storage array.
`volume`	The name of the volume for which you want to define properties. 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.
`volume`	The World Wide Identifier (WWID) of the volume for which you want to define properties. Enclose the WWID in double quotation marks (" ") inside angle brackets (< >). ⓘ When running this command, do not use colon separators in the WWID.

Parameter	Description
`volumes`	The names of several volumes for which you want to define properties. All of the volumes will have the same properties. Enter the names of the volumes using these rules: • 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: • 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.
`cacheFlushModifier`	The maximum amount of time that data for the volume stays in cache before the data is flushed to physical storage. Valid values are listed in the Notes section.
`cacheWithoutBatteryEnabled`	The setting to turn on or turn off caching without batteries. To turn on caching without batteries, set this parameter to `TRUE`. To turn off caching without batteries, set this parameter to `FALSE`.
`mediaScanEnabled`	The setting to turn on or turn off media scan for the volume. To turn on media scan, set this parameter to `TRUE`. To turn off media scan, set this parameter to `FALSE`. (If media scan is disabled at the storage array level, this parameter has no effect.)
`mirrorCacheEnabled`	The setting to turn on or turn off the mirror cache. To turn on the mirror cache, set this parameter to `TRUE`. To turn off the mirror cache, set this parameter to `FALSE`.
`modificationPriority`	The priority for volume modifications while the storage array is operational. Valid values are `highest`, `high`, `medium`, `low`, or `lowest`.
`owner`	The controller that owns the volume. Valid controller identifiers are `a` or `b`, where `a` is the controller in slot A, and `b` is the controller in slot B. Use this parameter only if you want to change the volume owner.

Parameter	Description
`preReadRedundancyCheck`	The setting to turn on or turn off pre-read redundancy checking. Turning on pre-read redundancy checking verifies the consistency of RAID redundancy data for the stripes containing the read data. Pre-read redundancy checking is performed on read operations only. To turn on pre-read redundancy checking, set this parameter to `TRUE`. To turn off pre-read redundancy checking, set this parameter to `FALSE`. ⓘ Do not use this parameter on non-redundant volumes, such as RAID 0 volumes.
`readCacheEnabled`	The setting to turn on or turn off the read cache. To turn on the read cache, set this parameter to `TRUE`. To turn off the read cache, set this parameter to `FALSE`.
`writeCacheEnabled`	The setting to turn on or turn off the write cache. To turn on the write cache, set this parameter to `TRUE`. To turn off the write cache, set this parameter to `FALSE`.
`cacheReadPrefetch`	The setting to turn on or turn off cache read prefetch. To turn off cache read prefetch, set this parameter to `FALSE`. To turn on cache read prefetch, set this parameter to `TRUE`.

Parameter	Description
`dataAssuranceDisabled`	The setting to turn off data assurance for a specific volume. For this parameter to have meaning, your volume must be capable of data assurance. This parameter changes a volume from one that supports data assurance to a volume that cannot support data assurance. (i) This option is only valid for enablement if the drives support DA. To remove data assurance from a volume that supports data assurance, set this parameter to `TRUE`. (i) If you remove data assurance from a volume, you cannot reset data assurance for that volume. To reset data assurance for the data on a volume, from which you removed data assurance, perform these steps: 1. Remove the data from the volume. 2. Delete the volume. 3. Recreate a new volume with the properties of the deleted volume. 4. Set data assurance for the new volume. 5. Move the data to the new volume.
`addCapacity`	The setting to increase the storage size (capacity) of the volume for which you are defining properties. Size is defined in units of `bytes`, `KB`, `MB`, `GB`, or `TB`. The default value is `bytes`.

Parameter	Description
addDrives	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]). Use this parameter with the `addCapacity` parameter if you need to specify additional drives to accommodate the new size.
redundancyCheckEnabled	The setting to turn on or turn off redundancy checking during a media scan. To turn on redundancy checking, set this parameter to `TRUE`. To turn off redundancy checking, set this parameter to `FALSE`.
segmentSize	The amount of data (in KB) that the controller writes on a single drive in a volume before writing data on the next drive. Valid values are `8`, `16`, `32`, `64`, `128`, `256`, or `512`.
userLabel	The new name that you want to give an existing volume. Enclose the new volume name in double quotation marks (" ").
preReadRedundancyCheck	The setting to check the consistency of RAID redundancy data on the stripes during read operations. Do not use this operation for non-redundant volumes, for example RAID Level 0. To check redundancy consistency, set this parameter to `TRUE`. For no stripe checking, set this parameter to `FALSE`.

Notes

Host I/O errors might result in volume groups with more than 32 volumes. This operation might also result in internal controller reboots due to the expiration of the timeout period before the operation completes. If you experience this issue, quiesce host I/O, and try the operation again.

When you use this command, you can specify one or more of the optional parameters.

You can apply these parameters to only one volume at a time:

- `addCapacity`
- `segmentSize`
- `userLabel`
- `logicalUnitNumber`

Add capacity, add drives, and segment size

Setting the `addCapacity` parameter, the `addDrives` parameter, or the `segmentSize` parameter starts a long-running operation that you cannot stop. These long-running operations are performed in the background and do not prevent you from running other commands. To show the progress of long-running operations, use the `show volume actionProgress` command.

Cache flush modifier

Valid values for the cache flush modifier are listed in this table.

Value	Description
`Immediate`	Data is flushed as soon as it is placed into the cache.
`.25`	Data is flushed after 250 ms.
`.5`	Data is flushed after 500 ms.
`.75`	Data is flushed after 750 ms.
`1`	Data is flushed after 1 s.
`1.5`	Data is flushed after 1500 ms.
`2`	Data is flushed after 2 s.
`5`	Data is flushed after 5 s.
`10`	Data is flushed after 10 s.
`20`	Data is flushed after 20 s.
`60`	Data is flushed after 60 s (1 min.).
`120`	Data is flushed after 120 s (2 min.).

Value	Description
`300`	Data is flushed after 300 s (5 min.).
`1200`	Data is flushed after 1200 s (20 min.).
`3600`	Data is flushed after 3600 s (1 hr).
`Infinite`	Data in cache is not subject to any age or time constraints. The data is flushed based on other criteria that are managed by the controller.

ⓘ Do not set the value of the `cacheFlushModifier` parameter above 10 seconds. An exception is for testing purposes. After running any tests in which you have set the values of the `cacheFlushModifier` parameter above 10 seconds, return the value of the `cacheFlushModifier` parameter to 10 or fewer seconds.

Cache without battery enabled

Write caching without batteries enables write caching to continue if the controller batteries are completely discharged, not fully charged, or not present. If you set this parameter to `TRUE` without an uninterruptible power supply (UPS) or other backup power source, you can lose data if the power to the storage array fails. This parameter has no effect if write caching is disabled.

Modification priority

Modification priority defines the amount of system resources that are used when modifying volume properties. If you select the highest priority level, the volume modification uses the most system resources, which decreases the performance for host data transfers.

Cache read prefetch

The `cacheReadPrefetch` parameter enables the controller to copy additional data blocks into cache while the controller reads and copies data blocks that are requested by the host from the drive into cache. This action increases the chance that a future request for data can be fulfilled from cache. Cache read prefetch is important for multimedia applications that use sequential data transfers. The configuration settings for the storage array that you use determine the number of additional data blocks that the controller reads into cache. Valid values for the `cacheReadPrefetch` parameter are `TRUE` or `FALSE`.

Segment size

The size of a segment determines how many data blocks that the controller writes on a single drive in a volume before writing data on the next drive. Each data block stores 512 bytes of data. A data block is the smallest unit of storage. The size of a segment determines how many data blocks that it contains. For example, an 8-KB segment holds 16 data blocks. A 64-KB segment holds 128 data blocks.

When you enter a value for the segment size, the value is checked against the supported values that are provided by the controller at run time. If the value that you entered is not valid, the controller returns a list of valid values. Using a single drive for a single request leaves other drives available to simultaneously service other requests.

If the volume is in an environment where a single user is transferring large units of data (such as multimedia), performance is maximized when a single data transfer request is serviced with a single data stripe. (A data stripe is the segment size that is multiplied by the number of drives in the volume group that are used for data transfers.) In this case, multiple drives are used for the same request, but each drive is accessed only once.

For optimal performance in a multiuser database or file system storage environment, set your segment size to minimize the number of drives that are required to satisfy a data transfer request.

Minimum firmware level

5.00 adds the `addCapacity` parameter.

7.10 adds the `preReadRedundancyCheck` parameter.

7.60 adds the `drawerID` user input.

7.75 adds the `dataAssuranceDisabled` parameter.

8.10 corrects the values for the `cacheFlushModifier` parameter in the cache flush table.

Set volume mapping

The `set volume logicalUnitNumber` command defines the logical unit number (LUN) or namespace ID (NSID) mapping between a volume and a host or host group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

This command is applicable to volumes in either a volume group or disk pool.

> ⓘ 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)
```

Parameter

Parameter	Description
`volume`	The name of the volume for which you want to define the logical unit number. 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.
`volume`	The World Wide Identifier (WWID) of the volume for which you want to define the logical unit number. Enclose the WWID in double quotation marks (" ") inside angle brackets (< >).
`accessVolume`	The logical unit number for the access volume. The logical unit number is the only property that you can set for the access volume.
`logicalUnitNumber`	The logical unit number or namespace ID that you want to use to map to a specific host. This parameter also assigns the host to a host group. ⓘ The logical unit number or namespace ID you specify must not already be in use, and must be within the range supported by the host Operating System. There will be no error if you map the volume to a logical unit number or namespace ID not supported by the host, but the host won't be able to access the volume.
`host`	The name of the host to which the volume is mapped. Enclose the host name in double quotation marks (" ").
`hostGroup`	The name of the host group to which the volume is mapped. Enclose the host group name in double quotation marks (" "). `defaultGroup` is the host group that contains the host to which the volume is mapped.

Notes

A host group is an optional topological element that you can define if you want to designate a collection of hosts that share access to the same volumes. The host group is a logical entity. Define a host group only if you have two or more hosts that can share access to the same volumes.

You can use any combination of alphanumeric characters, hyphens, and underscores for the names. Names

can have a maximum of 30 characters.

The access volume is the volume in a SAN environment that is used for in-band communication between the storage management software and the storage array controller. This volume uses a LUN or NSID address and consumes 20 MB of storage space that is not available for application data storage. An access volume is required only for in-band managed storage arrays. If you specify the `accessVolume` parameter, the only property you can set is the `logicalUnitNumber` parameter.

Minimum firmware level

7.83 adds snapshot volume for disk pools.

Set SSD cache for a volume

The `set volume ssdCacheEnabled` command turns on or off caching using the SSD cache feature for a specific volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Support Admin role.

Context

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 ["snapVolumeName"] ssdCacheEnabled=(TRUE | FALSE)
```

Syntax applicable to a consistency group snapshot volume

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

Parameters

Parameter	Description
volume	The name of the standard volume for which you want to turn on or turn off the SSD cache. Enclose the name of the volume in square brackets ([ ]). If the name of the volume has special characters or numbers, you must enclose the name of the volume in double quotation marks (" ") inside of square brackets ([ ]).
volume	The World Wide Identifier (WWID) of the standard volume for which you want to turn on or turn off the SSD cache. Enclose the WWID in double quotation marks (" ") inside angle brackets (< >).
snapVolume	The name of the snapshot volume for which you want to turn on or turn off the SSD cache. Enclose the name of snapshot volume in double quotation marks (" ") inside of square brackets ([ ]).
cgSnapVolume	The name of the consistency group snapshot volume for which you want to turn on or turn off the SSD cache. Enclose the name of the consistency group snapshot volume in double quotation marks (" ") inside of square brackets ([ ]).
ssdCacheEnabled	To turn on SSD cache, set this parameter to `TRUE`. To turn off SSD cache, set this parameter to `FALSE`.

Notes

You can turn the SSD cache on or off for only one volume at a time.

When you turn off SSD cache for a volume, the SSD cache for that volume is purged.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Set volume copy

The `set volumeCopy target` command defines the properties for a volume copy pair.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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

This command is valid for snapshot volume copy pairs.

Syntax

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

Parameters

Parameter	Description
`target`	The name of the volume to which the data will be copied. Enclose the target volume name in square brackets ([ ]). If the target volume name has special characters or numbers, you must enclose the target volume name in double quotation marks (" ") inside square brackets.
`source`	The name of the volume from which the data will be copied. Enclose the source volume name in square brackets ([ ]). If the source volume name has special characters or numbers, you must enclose the source volume name in double quotation marks (" ") inside square brackets.
`copyPriority`	The priority that the volume copy has relative to host I/O activity. Valid values are `highest`, `high`, `medium`, `low`, or `lowest`.
`targetReadOnlyEnabled`	The setting so that you can write to the target volume or only read from the target volume. To write to the target volume, set this parameter to `FALSE`. To prevent writing to the target volume, set this parameter to `TRUE`.

Parameter	Description
`copyType`	ⓘ This parameter has been deprecated.

Notes

When you use this command, you can specify one or more of the optional parameters.

Minimum firmware level

5.40

7.83 removes the `copyType=(online | offline)` parameter.

Set volume group forced state

The `set volumeGroup forcedState` command moves a volume group into a Forced state.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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
```

Parameter

Parameter	Description
`volumeGroup`	The name of the volume group that you want to place in a Forced state. Enclose the volume group name in square brackets ([ ]).

Notes

You can move the drives that comprise a volume group from one storage array to another storage array. The CLI provides three commands that let you move the drives. The commands are `start volumeGroup export`, `start volumeGroup import`, and `set volumeGroup forcedState`.

In the Forced state, you can perform an import operation on the volume group.

Minimum firmware level

7.10

Set volume group

The `set volumeGroup` command defines the properties for a volume group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

ⓘ You must perform only one operation (add drives, change the RAID level, or change volume group ownership) per command. You cannot perform more than one operation with a single command.

Syntax

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

Parameters

Parameter	Description
volumeGroup	The name of the volume group for which you want to set properties. Enclose the volume group name in square brackets ([ ]).

Parameter	Description
addDrives	The location of the drive that you want to add to the volume group. For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are 0 to 99. Drawer ID values are 1 to 5.

All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1.

Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]). |
| raidLevel | The RAID level for the volume group. Valid values are 0, 1, 3, 5, or 6. |
| owner | The controller that owns the volume group. Valid controller identifiers are a or b, where a is the controller in slot A , and b is the controller in slot B. Use this parameter only if you want to change the volume group owner. |

Notes

Host I/O errors might result in volume groups with more than 32 volumes. This operation also might result in internal controller reboots because the timeout period ends before the volume group definition is set. If you experience this issue, quiesce the host I/O operations, and try the command again.

When you use this command, you can specify only one of the parameters.

> (i) Specifying the addDrives parameter or the raidLevel parameter starts a long-running operation that you cannot stop.

The addDrives parameter supports 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.

Troubleshooting

Attempting to expand large volume groups by adding drives, also called Dynamic Capacity Expansion (DCE), may fail with the following message:

```
Return code: Error 26 - The modification operation cannot complete because of the
number of drives in the volume group and the segment size of the associated
volumes. Reduce the segment size of all volumes in the volume group to 128 KB or
below using the Change Segment Size option. Then, retry the operation.
```

Systems running 7.35.xx.xx firmware may fail with the following message instead of the one noted above:

```
Return code: Error 462 - A SYMbol procedure could not be carried out because the
firmware could not allocate sufficient cache memory. Operation when error
occurred: PROC_startVolum
```

In addition to the above messages, a Major Event Log (MEL) event indicating insufficient cache available to complete the DCE operation may occur.

Any controller running 7.xx firmware may encounter this problem.

DCE requires enough memory to buffer the data read from the original volume and the data to be written to the expanded volume. Some combination of number of drives in the expansion operation, stripe size, and whether mirror operations are enabled may result in not enough memory being available to complete the DCE operation.

If the above situation is encountered, possible workarounds are as follows:

- Create the desired size volume group using other unassigned drives.
- Delete the current volume group and then recreate the volume group with the desired number of drives.
- Reduce the segment size being used and then retry the operation.
- If possible, add additional memory to the controller and then retry the operation.

Minimum firmware level

7.10 adds RAID 6 capability.

7.30 removes the `availability` parameter.

7.60 adds the `drawerID` user input.

Set volume attributes for a volume in a disk pool

The `set volumes` command defines the properties for a volume in a disk pool.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

(i) 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] |
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)
```

Parameters

Parameter	Description
allVolumes	This parameter sets the properties for all of volumes in the storage array.
volume	The name of the volume for which you want to define properties. 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.
volume	The World Wide Identifier (WWID) of the volume for which you want to define properties. Enclose the WWID in double quotation marks (" ") inside angle brackets (< >). (i) When running this command, do not use colon separators in the WWID.

Parameter	Description
volumes	The names of several volumes for which you want to define properties. All of the volumes will have the same properties. Enter the names of the volumes using these rules: • 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: • 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.
addCapacity	The setting to increase the storage size (capacity) of the volume for which you are defining properties. Size is defined in units of `bytes`, `KB`, `MB`, `GB`, or `TB`. The default value is `bytes`. This parameter is not valid for thin volumes.
cacheFlushModifier	The maximum amount of time that data for the volume stays in cache before the data is flushed to physical storage. Valid values are listed in the Notes section.
cacheReadPrefetch	The setting to turn on or turn off cache read prefetch. To turn off cache read prefetch, set this parameter to `FALSE`. To turn on cache read prefetch, set this parameter to `TRUE`.
cacheWithoutBatteryEnabled	The setting to turn on or turn off caching without batteries. To turn on caching without batteries, set this parameter to `TRUE`. To turn off caching without batteries, set this parameter to `FALSE`.
mediaScanEnabled	The setting to turn on or turn off media scan for the volume. To turn on media scan, set this parameter to `TRUE`. To turn off media scan, set this parameter to `FALSE`. (If media scan is disabled at the storage array level, this parameter has no effect.)

Parameter	Description
`mirrorCacheEnabled`	The setting to turn on or turn off the mirror cache. To turn on the mirror cache, set this parameter to `TRUE`. To turn off the mirror cache, set this parameter to `FALSE`.
`owner`	The controller that owns the volume. Valid controller identifiers are `a` or `b`, where `a` is the controller in slotA, and `b` is the controller in slot B. Use this parameter only if you want to change the volume owner.
`preReadRedundancyCheck`	The setting to turn on or turn off pre-read redundancy checking. Turning on pre-read redundancy checking verifies the consistency of RAID redundancy data for the stripes containing the read data. Pre-read redundancy checking is performed on read operations only. To turn on pre-read redundancy checking, set this parameter to `TRUE`. To turn off pre-read redundancy checking, set this parameter to `FALSE`. ⓘ Do not use this parameter on non-redundant volumes, such as RAID 0 volumes.
`readCacheEnabled`	The setting to turn on or turn off the read cache. To turn on the read cache, set this parameter to `TRUE`. To turn off the read cache, set this parameter to `FALSE`.
`redundancyCheckEnabled`	The setting to turn on or turn off redundancy checking during a media scan. To turn on redundancy checking, set this parameter to `TRUE`. To turn off redundancy checking, set this parameter to `FALSE`.
`userLabel`	The new name that you want to give an existing volume. Enclose the new volume name in double quotation marks (" ").
`writeCacheEnabled`	The setting to turn on write cache capability.

Notes

When you use this command, you can specify one or more of the optional parameters.

You can apply these parameters to only one volume at a time:

- `addCapacity`
- `segmentSize`

- `userLabel`

Add capacity and segment size

Setting the `addCapacity` parameter or the `segmentSize` parameter starts a long-running operation that you cannot stop. These long-running operations are performed in the background and do not prevent you from running other commands. To show the progress of long-running operations, use the `show volume actionProgress` command.

Cache flush modifier

Valid values for the cache flush modifier are listed in this table.

Value	Description
`Immediate`	Data is flushed as soon as it is placed into the cache.
`.25`	Data is flushed after 250 ms.
`.5`	Data is flushed after 500 ms.
`.75`	Data is flushed after 750 ms.
`1`	Data is flushed after 1 s.
`1.5`	Data is flushed after 1500 ms.
`2`	Data is flushed after 2 s.
`5`	Data is flushed after 5 s.
`10`	Data is flushed after 10 s.
`20`	Data is flushed after 20 s.
`60`	Data is flushed after 60 s (1 min.).
`120`	Data is flushed after 120 s (2 min.).
`300`	Data is flushed after 300 s (5 min.).
`1200`	Data is flushed after 1200 s (20 min.).
`3600`	Data is flushed after 3600 s (1 hr).

Value	Description
`Infinite`	Data in cache is not subject to any age or time constraints. The data is flushed based on other criteria that are managed by the controller.

Cache without battery enabled

Write caching without batteries enables write caching to continue if the controller batteries are completely discharged, not fully charged, or not present. If you set this parameter to `TRUE` without an uninterruptible power supply (UPS) or other backup power source, you can lose data if the power to the storage array fails. This parameter has no effect if write caching is disabled.

Modification priority

Modification priority defines the amount of system resources that are used when modifying volume properties. If you select the highest priority level, the volume modification uses the most system resources, which decreases the performance for host data transfers.

Cache read prefetch

The `cacheReadPrefetch` parameter enables the controller to copy additional data blocks into cache while the controller reads and copies data blocks that are requested by the host from the drive into cache. This action increases the chance that a future request for data can be fulfilled from cache. Cache read prefetch is important for multimedia applications that use sequential data transfers. The configuration settings for the storage array that you use determine the number of additional data blocks that the controller reads into cache. Valid values for the `cacheReadPrefetch` parameter are `TRUE` or `FALSE`.

Segment size

The size of a segment determines how many data blocks that the controller writes on a single drive in a volume before writing data on the next drive. Each data block stores 512 bytes of data. A data block is the smallest unit of storage. The size of a segment determines how many data blocks that it contains. For example, an 8-KB segment holds 16 data blocks. A 64-KB segment holds 128 data blocks.

When you enter a value for the segment size, the value is checked against the supported values that are provided by the controller at run time. If the value that you entered is not valid, the controller returns a list of valid values. Using a single drive for a single request leaves other drives available to simultaneously service other requests.

If the volume is in an environment where a single user is transferring large units of data (such as multimedia), performance is maximized when a single data transfer request is serviced with a single data stripe. (A data stripe is the segment size that is multiplied by the number of drives in the volume group that are used for data transfers.) In this case, multiple drives are used for the same request, but each drive is accessed only once.

For optimal performance in a multiuser database or file system storage environment, set your segment size to minimize the number of drives that are required to satisfy a data transfer request.

Minimum firmware level

7.83

show …

Show drive download progress

The `show allDrives downloadProgress` 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.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
show allDrives downloadProgress
```

Parameters

None.

Notes

When all of the firmware downloads have successfully completed, this command returns good status. If any firmware downloads fail, this command shows the firmware download status of each drive that was targeted. This command returns the statuses shown in this table.

Status	Definition
Successful	The downloads completed without errors.
Not Attempted	The downloads did not start.
Partial Download	The downloads are in progress.
Failed	The downloads completed with errors.

Minimum firmware level

6.10

Show drive performance statistics

The `show allDrives performanceStats` command returns information about drive performance.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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

- The storage array containing 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
```

Parameters

Parameter	Description
allDrives	The setting to return information about all of the drives in the storage array.

Parameter	Description
`drive` or `drives`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).

Notes

The `drive` parameter supports 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.

The `show drive performanceStats` command returns drive performance statistics as shown in this example:

```
"Performance Monitor Statistics for Storage Array: remote_pp -
Date/Time: 10/23/12 3:47:27 PM -
Polling interval in seconds: 5"

"Objects","Current IO Latency","Maximum IO Latency","Minimum IO Latency",
"Average IO Latency"

"Capture Iteration: 1","","","",""
"Date/Time: 10/23/12 3:47:27 PM","","","",""
"Drive Tray 0, Slot 1","0.0","0.0","0.0","0.0"
```

Minimum firmware level

7.86

Show drive

The `show allDrives` command returns information about the drives in the storage

array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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

- The total number of drives
- The type of drive (SAS, or NVMe4K)
- 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 wear life of SSD drives (this information is only valid for the E2800 and E5700/EF570 and is not shown if the array does not contain SSD drives):
  - The average erase count.
  - The spare blocks remaining.
  - The percent endurance used (new in the 11.41 release). The percent endurance used is the amount of data written to the SSD drives to date divided by the total theoretical write limit for the drives.
- 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

> (i) Date of Manufacture information is not available for NVMe drives.

Syntax

```
show  allDrives [driveMediaType=(HDD | SSD | unknown | allMedia)] |
[driveType=( SAS | NVMe4K)]) | (drive [trayID,[drawerID,]slotID] | drives
[trayID1,[drawerID1,]slotID1 ... trayIDn,[drawerIDn,]slotIDn]
summary
```

Parameters

Parameter	Description
allDrives	The setting to return information about all of the drives in the storage array.
driveMediaType	The type of drive media for which you want to retrieve information. The following values are valid types of drive media: • HDD — Use this option when you have hard drives in the drive tray. • SSD — Use this option when you have solid state drives in the drive tray. • unknown — Use this option if you are not sure what types of drive media are in the drive tray. • allMedia — Use this option when you want to use all types of drive media that are in the drive tray.
driveType	The type of drive for which you want to retrieve information. You cannot mix drive types. Valid drive types are: • SAS • NVMe4K If you do not specify a drive type, the command defaults to any type.

Parameter	Description
`drive` or `drives`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).
`summary`	The setting to return the status, the capacity, the data transfer rate, the product ID, and the firmware version for the specified drives.

Notes

To determine information about the type and location of all of the drives in the storage array, use the `allDrives` parameter.

To determine the information about the SAS drives in the storage array, use the `driveType` parameter.

To determine the type of drive in a specific location, use the `drive` parameter, and enter the tray ID and the slot ID for the drive.

The `drive` parameter supports 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.

Minimum firmware level

5.43

7.60 adds the `drawerID` user input and the `driveMediaType` parameter.

8.41 adds wear life reporting information, in the form of the percentage of endurance used, for SSD drives in an E2800, E5700, or EF570 system.

Show host ports

The `show allHostPorts` command returns information about configured host ports.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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
```

Parameters

None.

Notes

This command returns HBA host port information similar to this example.

```
HOST PORT IDENTIFIER      HOST PORT NAME   HOST TYPE
12:34:56:54:33:22:22:22   Jupiter1         Solaris
12:34:56:78:98:98:88:88   Pluto1           Windows 2000/Server 2003
Clustered
54:32:12:34:34:55:65:66   Undefined        Undefined
```

Minimum firmware level

5.40

Show SNMP communities

The `show allSnmpCommunities` command returns information about the Simple Network Management Protocol (SNMP) communities defined for the storage array. SNMP communities are collections of devices, such as routers, switches, printers, storage devices, grouped together to manage and monitor the devices.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin or Storage Monitor role.

Context

Information returned includes the following:

- The total number of communities
- The total number of trap destinations
- The names of the SNMP communities

Syntax

```
show (allSnmpCommunities |
snmpCommunity communityName="snmpCommunityName" |
snmpCommunities [snmpCommunityName1 ... snmpCommunityNameN])
[summary]
```

Parameters

Parameter	Description
allSnmpCommunities	This parameter returns information about all of the SNMP communities in the storage array.
communityName	The name of the SNMP community for which you want to retrieve information. Enclose the SNMP community name in double quotation marks (" ").
snmpCommunities	The names of several SNMP communities for which you want to retrieve information. Enter the names of the SNMP communities using these rules: • 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.

Parameter	Description
summary	This parameter returns a list of the total number of SNMP communities and the total number of SNMP trap destinations. When you use this parameter, all of the detail information is omitted.

Notes

SNMP supports one or more *communities* to which managers and managed devices belong. SNMP requests contain a *community string* in the data packets passed over the network that acts as a crude password. SNMP agents can reject GET or SET requests with an unrecognized community string. A community string is also included in TRAP notifications sent from agent to manager as well.

The embedded SNMP agent supports both IPV4 and IPV6.

This command returns SNMP community information similar to this example.

```
SNMP COMMUNITIES-----------------------------
SUMMARY
    Total SNMP Communities: 2
    Total SNMP Trap Destinations: 1
DETAILS
    SNMP Community: TestComm1
    SNMP Permission: Read Only
       Associated Trap Destination:
       Trap Receiver IP Address: 10.113.173.133
       Send Authentication Failure Traps: true
    SNMP Community: Test2
    SNMP Permission: Read Only
       Associated Trap Destination:
```

Minimum firmware level

8.30

Show SNMPv3 USM user

The `show allsnmpUsers` command returns information about the Simple Network Management (SNMP) USM users defined for the storage array.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
show (allSnmpUsers |
    snmpUser userName="snmpUsername" |
    snmpUsers [snmpUserName1 ... snmpUserNameN])
    [summary]
```

This command returns SNMP user information similar to the following

```
SNMP USERS------------------------------

SUMMARY

   Total SNMP Users: 2
   Total SNMP Trap Destinations: 1

DETAILS

   SNMP User: TestUser1
   SNMP Engine ID: local
   SNMP Permission: Read Only
   SNMP Authentication Protocol: sha
   SNMP Privacy Protocol: aes128

      Associated Trap Destination:

      Trap Receiver IP Address  Send Authentication Failure
   Traps
      10.113.173.133                false

   SNMP User: TestUser2
   SNMP Engine ID: local
   SNMP Permission: Read Only
   SNMP Authentication Protocol: sha256
   SNMP Privacy Protocol: none

      Associated Trap Destination:
```

Parameters

Parameter	Description
`allSnmpUsers`	This parameter returns information about all of the SNMP users in the storage array.
`userName`	The name of the SNMP user for which you want to retrieve information. Enclose the SNMP user name in double quotation marks (" ").
`snmpUsers`	The names of several SNMP users for which you want to retrieve information. Enter the names of the SNMP users using these rules: • 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.
`summary`	This parameter returns a list of the total number of SNMP users and the total number of SNMP trap destinations. When you use this parameter, all of the detail information is omitted.

Minimum firmware level

8.72

Show array label

The `Show array label` command returns information about whether a storage array label has been defined or all existing storage array labels.

Supported Arrays

This command applies to the EF600 storage arrays.

Syntax

```
show storageArrayLabel label userDefinedString
show storageArrayLabel all
```

Parameters

Parameter	Description
userDefinedString	Allows you to specify a user-defined label for the storage array.

Minimum firmware level

8.60

Show asynchronous mirror groups

The `show asyncMirrorGroup summary` command displays configuration information for one or more asynchronous mirror groups.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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 |
asyncMirrorGroup [asyncMirrorGroupName] |
asyncMirrorGroups [asyncMirrorGroupName1 ... asyncMirrorGroupNameN])
[summary]
```

Parameter

Parameter	Description
allAsyncMirrorGroups	Use this parameter if you want to display the properties for all asynchronous mirror groups.

Parameter	Description
asyncMirrorGroup	The name of an asynchronous mirror group for which you want to show configuration information and the progress of periodic data synchronization. Enclose the asynchronous mirror group name in square brackets ([ ]). If the asynchronous mirror group name has special characters or numbers, you must enclose the asynchronous mirror group name in double quotation marks (" ") inside square brackets.
asyncMirrorGroups	The names of several asynchronous mirror groups for which you want to retrieve information. Enter the names of the asynchronous mirror groups using these rules: • Enclose all of the names in square brackets ([ ]). • Separate each of the names with a space. If the asynchronous mirror group names have special characters or numbers, enter the names using these rules: • 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.
summary	This parameter displays a concise list of information about the synchronization progress of one or more asynchronous mirror groups.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Show asynchronous mirror group synchronization progress

The `show asyncMirrorGroup synchronizationProgress` command displays the progress of *periodic* synchronization of the asynchronous mirror group between the local and remote storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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.

> ℹ️ 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]
```

Parameters

Parameter	Description
asyncMirrorGroup	The name of an asynchronous mirror group for which you want to show synchronization of the asynchronous mirror group between the local and remote storage array. Enclose the asynchronous mirror group name in square brackets ([ ]). If the asynchronous mirror group name has special characters or numbers, you must enclose the asynchronous mirror group name in double quotation marks (" ") inside square brackets.
synchronizationProgress	This parameter displays the periodic synchronization progress of the asynchronous mirror group.
summary	This parameter displays a concise list of information about the synchronization of the asynchronous mirror group between the local and remote storage array.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Show audit log configuration

The `show auditLog configuration` command shows the audit log configuration settings for the storage array.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
show auditLog configuration
```

Parameters

None.

Examples

```
SMcli -n Array1 -c "show auditLog configuration;"

Logging level: All
Full policy: Overwrite
Maximum records: 30,000 count
Warning threshold: 90 percent

SMcli completed successfully.
```

Minimum firmware level

8.40

Show audit log summary

The `show auditLog summary` command displays the audit log summary information.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
show auditLog summary
```

Parameters

None.

Examples

```
SMcli -n Array1 -c "show auditLog summary;"

Total log records: 1,532
First log record: 1493070393313 (2017-04-24T16:46:33.313-0500)
Last log record: 1493134565128 (2017-04-25T10:36:05.128-0500)

SMcli completed successfully.
```

Minimum firmware level

8.40

Show blocked events

The `show blockedEventAlertList` 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.

Supported Arrays

This command applies only to the E2700 and E5600 storage arrays.

Context

ⓘ 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.

Syntax

```
show blockedEventAlertList
```

Example

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.
```

Parameters

None.

Minimum firmware level

8.10

Show certificates

The `Show certificates` command allows you to view the certificates installed on the CLI package trust store.

Supported Arrays

This command applies to the EF600 storage arrays.

Syntax

```
show localCertificate all | alias alias
```

Parameters

Parameter	Description
alias	Allows you to specify a certificate through the user-defined alias.

Minimum firmware level

8.60

Show consistency group snapshot image

The `show CGSnapImage` command shows one snapshot image or several snapshot images that are in one or more snapshot consistency groups.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
`CGSnapImage` or `CGSnapImages`	The name of the snapshot image in a consistency group. The name of a snapshot image is comprised of two parts: • The name of the consistency group • An identifier for the snapshot image in the consistency group. The identifier for the snapshot image can be one of these: • An integer value that is the sequence number of the snapshot in the consistency group. • `NEWEST` — Use this option when you want to show the latest snapshot image created in the consistency group. • `OLDEST` — Use this option when you want to show the earliest snapshot image created in the consistency group. Enclose the snapshot image name in double quotation marks (" ") inside square brackets ([ ]). You can enter more than one snapshot image name or sequence number. Enclose all of the snapshot image names in one set of double quotation marks (" ") inside square brackets ([ ]). Separate each snapshot image name with a space.
`allCGSnapImages`	The setting to return all of the snapshot images from the consistency groups.
`summary`	The setting to return a concise list of information about all of the snapshot images in the storage array.

Notes

The name of a snapshot image has two parts separated by a colon (:):

• The identifier of the snapshot consistency group
• The identifier of the snapshot image

For example, if you want to show snapshot image 12345 in a snapshot consistency group that has the name snapCGroup1, you would use this command:

```
show CGsnapImage ["snapCGroup1:12345"];
```

To show the most recent snapshot image in a snapshot consistency group that has the name snapCGroup1, you would use this command:

```
show CGsnapImage ["snapCGroup1:newest"];
```

To show the snapshot images in several snapshot consistency groups that have the names snapCGroup1, snapCGroup2, and snapCGroup3, you would use this command:

```
show CGsnapImages ["snapCGroup1:12345 snapCGroup2:newest
snapCGroup3:oldest"];
```

Note that in these examples the snapshot consistency group name is separated from the snapshot image identifier by a colon (:).

Minimum firmware level

7.83

Show Check Volume Parity Jobs

The `show check volume parity jobs` command shows all check volume parity jobs and their status.

Supported Arrays

This command applies to any individual storage array, including the EF600 and EF300 arrays; as long as all SMcli packages are installed.

Roles

To execute this command on an EF600 and EF300 storage array, you must have the Storage Admin role.

Syntax

```
show check volume parity jobs;
```

Parameters

None

Minimum firmware level

11.80

Show consistency group

The `show consistencyGroup` command returns information about one or more

consistency groups.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
allConsistencyGroups	This setting returns information about all of the consistency groups in the storage array.
consistencyGroup	The name of the consistency group for which you are retrieving information. Enclose the consistency group name in square brackets ([ ]). If the consistency group name has special characters or numbers, you must enclose the consistency group name in double quotation marks (" ") inside square brackets.
consistencyGroups	The names of several consistency groups for which you are retrieving information. All of the volumes will have the same properties. Enter the names of the volumes using these rules: • Enclose all of the names in square brackets ([ ]). • Separate each of the names with a space. If the volume names have special characters or consist only of numbers, enter the names using these rules: • 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.

Parameter	Description
summary	This setting returns a concise list of information about the consistency groups.
schedule	This parameter returns information about any schedules for a consistency group.

Minimum firmware level

7.83

Show signed certificate

The `show controller arrayManagementSignedCertificate summary` command displays the current signed certificate summary from the specified controller.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

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

Parameters

Parameter	Description
controller	Allows you to specify the controller on which you want to retrieve the root/intermediate certificates. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).

Example

Sample output may be different than illustrated below.

```
SMcli -n Array1 -c "show controller[a] arrayManagementSignedCertificate
all summary;"


==============================
Controller A Signed Certificate
==============================
Subject DN:    CN=Corp Issuing CA 1
Issuer DN:     CN=Corp Root CA
Start:         <date>
Expire:        <date>


SMcli completed successfully.
```

Minimum firmware level

8.40

Show installed root/intermediate CA certificates summary

The `show controller caCertificate` command displays the installed CA certificates summary from the specified controller. This command is useful to use before performing the `delete controller caCertificate` command so that you know the alias names of the certificates to delete.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
show controller [(a|b)] caCertificate [all | aliases=("alias1" ... "
aliasN")] summary
```

Parameters

Parameter	Description
`controller`	Allows the user to specify the controller on which you want to retrieve the root/intermediate certificates. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
`all`	Allows the user to specify the retrieval of all root/intermediate certificates.
`aliases`	Allows the user to specify which root/intermediate certificate to retrieve by alias. Enclose all the aliases in parentheses. If you enter more than one alias, separate them with a space.

Examples

```
SMcli -n Array1 -c "show controller[a] caCertificate all summary;"

SMcli -n Array1 -c "show controller[b] caCertificate alias=("myAlias"
"anotherAlias") summary;"
=============================
Controller A Authority Certificates
=============================
Alias:          19527b38-8d26-44e5-8c7f-5bf2ca9db7cf
Subject DN:     CN=My Corp Issuing CA 1
Issuer DN:      CN=My Corp Root CA
Start:          date
Expire:         date
---------------------
Alias:          myAliasName
Subject DN:     CN=My Corp Issuing CA 1
Issuer DN:      CN=My Corp Root CA
Start:          date
Expire:         date

SMcli completed successfully.
```

Minimum firmware level

8.40

Show controller diagnostic status

The `show controller` 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 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]
```

Parameters

Parameter	Description
controller	The setting to return information about a specific controller in the storage array. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
file	The name of the file that contains the results of the diagnostic tests. This command does not automatically append a file extension to the file name. You must add an extension when you enter the file name.

Minimum firmware level

7.70 adds the capability for controller diagnostic status.

Show controller NVSRAM

The `show controller NVSRAM` command returns information about NVSRAM byte values.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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.

Syntax

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

Parameters

Parameter	Description
`allControllers`	The setting to return information about both controllers in the storage array.
`controller`	The setting to return information about a specific controller in the storage array. Valid controller identifiers are `a` or `b`, where `a` is the controller in slot A, and `b` is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
`hostType`	The index label or number of the host type. Use the `show storageArray hostTypeTable` command to generate a list of available host type identifiers.
`host`	The name of the host that is connected to the controllers. Enclose the host name in double quotation marks (" ").

Notes

Use the `show controller NVSRAM` command to show parts of or all of the NVSRAM before using the `set controller` command to change the NVSRAM values. Before making any changes to the NVSRAM, contact technical support to learn what regions of the NVSRAM you can modify.

Show controller

The `show controller` command returns information about a controller.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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]
```

Parameters

Parameter	Description
allControllers	The setting to return information about both controllers in the storage array.
controller	The setting to return information about a specific controller in the storage array. Valid controller identifiers are a or b , where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).
summary	The setting to return a concise list of information about both controllers in the storage array.

Notes

The following list is an example of the information that is returned by the `show controller` command. This example only shows how the information is presented and should not be considered to represent best practice for a storage array configuration.

```
Controller in slot A
```

```
Status: Online
Current configuration
   Firmware version: 96.10.21.00
      Appware version: 96.10.21.00
      Bootware version: 96.10.21.00
   NVSRAM version: N4884-610800-001
Pending configuration
   Firmware version: Not applicable
      Appware version: Not applicable
      Bootware version: Not applicable
   NVSRAM version: Not applicable
   Transferred on: Not applicable
Board ID: 4884
Product ID: INF-01-00
Product revision: 9610
Serial number: 1T14148766
Date of manufacture: October 14, 2006
Cache/processor size (MB): 1024/128
Date/Time: Wed Feb 18 13:55:53 MST 2008
Associated Volumes (* = Preferred Owner):
   1*, 2*, CTL 0 Mirror Repository*, Mirror Repository 1*,
   JCG_Remote_MirrorMenuTests*
Ethernet port: 1
   MAC address: 00:a0:b8:0c:c3:f5
   Host name: ausctlr9
   Network configuration: Static
   IP address: 172.22.4.249
   Subnet mask: 255.255.255.0
   Gateway: 172.22.4.1
   Remote login: Enabled
Drive interface: Fibre
   Channel: 1
   Current ID: 125/0x1
   Maximum data rate: 2 Gbps
   Current data rate: 1 Gbps
   Data rate control: Switch
   Link status: Up
Drive interface: Fibre
   Channel: 2
   Current ID: 125/0x1
   Maximum data rate: 2 Gbps
   Current data rate: 1 Gbps
   Data rate control: Switch
   Link status: Up
Drive interface: Fibre
```

```
        Channel: 3
        Current ID: 125/0x1
        Maximum data rate: 2 Gbps
        Current data rate: 1 Gbps
        Data rate control: Switch
        Link status: Up
   Drive interface: Fibre
        Channel: 4
        Current ID: 125/0x1
        Maximum data rate: 2 Gbps
        Current data rate: 1 Gbps
        Data rate control: Switch
        Link status: Up
   Host interface: Fibre
        Port: 1
        Current ID: Not applicable/0xFFFFFFFF
        Preferred ID: 126/0x0
        NL-Port ID: 0x011100
        Maximum data rate: 2 Gbps
        Current data rate: 1 Gbps
        Data rate control: Switch
        Link status: Up
        Topology: Fabric Attach
        World-wide port name: 20:2c:00:a0:b8:0c:c3:f6
        World-wide node name: 20:2c:00:a0:b8:0c:c3:f5
        Part type: HPFC-5200    revision 10
   Host interface: Fibre
        Port: 2
        Current ID: Not applicable/0xFFFFFFFF
        Preferred ID: 126/0x0
        NL-Port ID: 0x011100
        Maximum data rate: 2 Gbps
        Current data rate: 1 Gbps
        Data rate control: Switch
        Link status: Up
        Topology: Fabric Attach
        World-wide port name: 20:2c:00:a0:b8:0c:c3:f7
        World-wide node name: 20:2c:00:a0:b8:0c:c3:f5
        Part type: HPFC-5200    revision 10
```

When you use the `summary` parameter, the command returns the list of information without the drive channel information and the host channel information.

The `show storageArray` command also returns detailed information about the controller.

Minimum firmware level

5.43 adds the `summary` parameter.

Show disk pool

The `show diskPool` command returns information about a disk pool.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

This command returns this information about a disk pool:

- The status (such as Optimal, Degraded, Failed, Missing)
- The total capacity
- The preservation capacity, usable capacity and unusable capacity
- The used capacity, free capacity, and percentage full
- The current owner (the controller in slot A or the controller in slot B)
- The drive media (SAS)
- The drive media type (HDD or SSD)
- The drive interface type (Fibre Channel, iSCSI, InfiniBand, SAS)
- Tray loss protection (yes or no)
- Secure capable - indicates whether the disk pool is composed of all secure-capable drives. Secure-capable drives can be either FDE drives or FIPS drives.
- Secure - Indicates whether the disk pool has drive security turned on (this is called secure enabled).
- The remaining capacity notification settings (critical and early warning)
- The priority settings
- The associated volumes and free capacity
- The associated drives
- Data Assurance capabilities and presence of Data Assurance enabled volumes
- Resource provisioning capabilities

Syntax

```
show diskPool [diskPoolName]
```

Parameter

Parameter	Description
diskPool	The name of the disk pool for which you are retrieving information. Enclose the disk pool name in square brackets ([ ]). If the disk pool name has special characters or numbers, you must enclose the disk pool name in double quotation marks (" ") inside square brackets.

Notes

Use this command to show the disk pool content of the storage array profile.

Minimum firmware level

7.83

Show drive channel statistics

The `show driveChannel stats` command shows the cumulative data transfer for the drive channel and error information.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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
```

Parameters

Parameter	Description
`driveChannel`	The identifier number of the drive channel for which you want to show information. Valid drive channel values are 1, 2, 3, 4, 5, 6, 7, or 8. Enclose the drive channel in square brackets ([ ]). Use this parameter when you want to show the statistics for only one drive channel.
`driveChannels`	The identifier numbers of several drive channels for which you want to show information. Valid drive channel values are 1, 2, 3, 4, 5, 6, 7, or 8. Enclose the drive channels in square brackets ([ ]) with the drive channel value separated with a space. Use this parameter when you want to show the statistics for more than one drive channel.
`allDriveChannels`	The identifier that selects all of the drive channels.

Notes

None.

Minimum firmware level

6.10

7.15 adds an update to the drive channel identifier.

Show email alert configuration

The `show emailAlert summary` command displays the email alert configuration information.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin or Storage Monitor role.

Syntax

```
show emailAlert summary
```

Parameters

None.

Examples

```
SMcli -n Array1 -c "show emailAlert summary;"

EMAIL ALERT SETTINGS
   Mail server address: email@company.com
   Mail server encryption: starttls
   Mail server port: 587
   Mail server user name: accountName
   Mail server password: secret123
   Email sender address: no-reply@company.com
   Recipient Email
       recipient@company.com
       recipient-two@company.com


SMcli completed successfully.
```

Minimum firmware level

8.40

11.70.01 added parameters that specify the SMTP encryption (none, SMTPS, STARTTLS), SMTP port, and SMTP credentials (user name and password).

Show current iSCSI sessions

The `show iscsiSessions` command returns information about an iSCSI session for either an iSCSI initiator or an iSCSI target.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
show iscsiInitiator ["initiatorName" | <"iqn">] iscsiSessions
```

```
show iscsiTarget ["targetName" | <"iqn">] iscsiSessions
```

Parameters

Parameter	Description
iscsiInitiator	The name of the iSCSI initiator for which you want to obtain session information.
	If the iSCSI initiator uses a label or an alias, enclose the iSCSI initiator label or alias in double quotation marks (" ") inside square brackets ([ ]).
	If the iSCSI initiator uses an iSCSI qualified name (IQN), enclose the IQN in double quotation marks (" ") inside angle brackets (< >).
iscsiTarget	The name of the iSCSI target for which you want to obtain session information.
	If the iSCSI target uses a label or an alias, enclose the iSCSI target label or alias in double quotation marks (" ") inside square brackets ([ ]).
	If the iSCSI target uses an iSCSI qualified name (IQN), enclose the IQN in double quotation marks (" ") inside angle brackets (< >).

Example

```
Retrieve initiator:


SMcli -n Array1 -u admin@local -p adminPassword -k -c "show
iscsiSessions;"


Initiator information:
    Host user label:              bbb000b00b0
    Host port user label:         bbb000b00b0b0
    Name:                         iqn.0b0b-0b.com:b0b0b0b0b0b0
    Alias:                        None


Host port user label:


SMcli -n Array1 -u admin@local -p adminPassword -k -c "show iscsiInitiator
[\"bbb000b00b0b0\"] iscsiSessions;"



IQN:


SMcli -n Array1 -u admin@local -p adminPassword -k -c "show iscsiInitiator
<\"iqn.0b0b-0b.com:b0b0b0b0b0b0\"> iscsiSessions;"
```

Notes

If you enter this command without defining any arguments, this command returns information about all of the iSCSI sessions that are currently running. The following command returns information about all of the current iSCSI sessions:

```
show iscsiSessions
```

To limit the information that is returned, enter a specific iSCSI initiator or a specific iSCSI target. This command then returns information about the session for only the iSCSI initiator or the iSCSI target that you named.

An initiator name can be any combination of alpha or numeric characters from 1 to 30 characters in length. An IQN can be up to 255 characters in length and has this format:

```
iqn.yyyy-mm.naming-authority:unique name
```

Minimum firmware level

7.10

Show replaceable drives

The `show replaceableDrives` command shows all replaceable drives in a storage

array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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

- The tray location and the slot location
- The volume group name to which the drive belongs
- The World Wide Name (WWN)
- The status of the drive

Syntax

```
show replaceableDrives
```

Example output

```
Replaceable drive at Tray 0, Slot 3
             Volume group: 2
             World-wide name: 5000c50028785aff0000000000000000
             Status: Removed
Replaceable drive at Tray 0, Slot 23
             Volume group: 2
             World-wide name: 5000c500095d46df0000000000000000
             Status: Removed
Replaceable drive at Tray 0, Slot 24
             Volume group: 2
             World-wide name: 5000c500287854d70000000000000000
             Status: Removed
```

Minimum firmware level

7.10

Show snapshot group

The `show snapGroup` command returns information about one or more snapshot image groups.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
`allSnapGroups`	The parameter to return information about all of the snapshot groups in the storage array.
`snapGroup`	The name of the snapshot group for which you want to retrieve information. Enclose the snapshot group name in square brackets ([ ]). If the snapshot group name has special characters or numbers, you must enclose the snapshot group name in double quotation marks (" ") inside square brackets.

Parameter	Description
snapGroups	The names of several snapshot groups for which you want to retrieve information. Enter the names of the snapshot groups using these rules: • Enclose all of the names in square brackets ([ ]). • Separate each of the names with a space. If the snapshot group names have special characters or consist only of numbers, enter the names using these rules: • 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.
summary	The parameter to return a concise list of information about the snapshot groups.
schedule	The parameter to return a concise list of information about the schedules for the snapshot group copy operations.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

This command returns snapshot group information as shown in this example:

```
SNAPSHOT GROUP DETAILS

SNAPSHOT GROUPS----------------------------

SUMMARY
```

```
  Total Snapshot Groups: 1
  Total Snapshot Images: 0
  Enabled Snapshot Image Schedules: 0
  Status: 1 Optimal, 0 Non Optimal

  Name        Type        Status     Associated Base Volume
  2_SG_01    Standard    Optimal    2
  Total Repository Capacity  Available Repository Capacity   Snapshot Image
Limit
  10.318 GB                  10.318 GB (100%)                        0

  Snapshot Images    Scheduled
  0                  No
DETAILS

  Snapshot Group "2_SG_01"

   Status:  Optimal
   Type:    Standard
   Associated base volume: 2
   Cluster size: 65,536 bytes

   Repository

    Total repository volumes: 3
    Aggregate repository status: Optimal
    Total repository capacity:   10.318 GB
    Used capacity:               0.000 MB (0%)
    Available repository capacity: 10.318 GB (100%)
    Repository full policy:    Auto-purge Snapshot Images
    Utilization alert threshold: 75%

   Snapshot images

    Total Snapshot images: 0
    Auto-delete Snapshot images: Disabled
    Snapshot image schedule:   Not Applicable
```

Minimum firmware level

7.83

Show snapshot image

The `show snapImage` command returns information about the snapshot images that a user had previously created.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax for showing a specific snapshot image

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

Parameters

Parameter	Description
`allSnapImages`	The parameter to return information about all of the snapshot images in the storage array.
`snapImage`	The name of a snapshot image for which you want to retrieve information. The name of a snapshot image is comprised of two parts: • The name of the snapshot group • An identifier for the snapshot image in the snapshot group The identifier for the snapshot image can be one of these: • An integer value that is the sequence number of the snapshot in the snapshot group. • `NEWEST` — Use this option when you want to show the latest snapshot image created in the snapshot group. • `OLDEST` — Use this option when you want to show the earliest snapshot image created in the snapshot group. Enclose the snapshot image name in double quotation marks (" ") inside square brackets ([ ]).

Parameter	Description
snapImages	The names of several snapshot images for which you want to retrieve information. Enter the names of the snapshot images using these rules: • 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.
summary	This parameter returns a concise list of information about the snapshot images.

Notes

The name of a snapshot image has two parts separated by a colon (:):

  • The identifier of the snapshot group
  • The identifier of the snapshot image

For example, if you want to show snapshot image 12345 in a snapshot group that has the name snapGroup1, you would use this command:

```
show snapImage ["snapGroup1:12345"];
```

To show the most recent snapshot image in a snapshot group that has the name snapGroup1, you would use this command:

```
show snapImage ["snapGroup1:newest"];
```

To show the snapshot images in several snapshot consistency groups that has the names snapGroup1, snapGroup2, and snapGroup3, you would use this command:

```
show snapImages ["snapGroup1:12345 snapGroup2:newest snapGroup3:oldest"];
```

Minimum firmware level

7.83

Show snapshot volumes

The `show snapVolume` command returns information about one or more snapshot volumes.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
allSnapVolumes	The parameter to return information about all of the snapshot volumes in the storage array.
snapVolume	The name of a snapshot volume about which you want to retrieve information. Enclose the snapshot volume name in double quotation marks (" ") inside of square brackets ([ ]).
snapVolumes	The names of several snapshot volumes for which you want to retrieve information. Enter the names of the snapshot volumes using these rules: • 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.
summary	The parameter to return a concise list of information about the snapshot volumes.

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

This command returns snapshot volume information as shown in this example:

```
SNAPSHOT VOLUME (SNAPSHOT-IMAGE BASED) SUMMARY
```

```
SUMMARY

 Total Snapshot Volumes: 1
   Most Recent Snapshot Volume: Day month date hh:mm:ss yyyy
   Status: 1 Optimal, 0 Non Optimal


   Name          Type         Status       Capacity      Associated Base Volume
   2_SV_0001    Standard     Optimal      3.000 GB      2
```

```
   Snapshot Volume Timestamp      Snapshot Image Timestamp      Mode
   1/23/12 6:44:31 PM IST         1/23/12 6:27:36 PM IST        Read Write
```

```
   Total Repository Capacity      Available Repository Capacity
   1.199 GB                       0.125 MB (0%)
```

The size of your monitor determines how the information wraps and will affect how the information appears.

Minimum firmware level

7.83

Show SNMP MIB II system group variables

The `show snmpSystemVariables` command returns information about the Simple Network Management Protocol (SNMP) system variables. The system variables are maintained in a Management Information Base II (MIB-II) database.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin or Storage Monitor role.

Syntax

```
show snmpSystemVariables
```

Parameters

None.

Notes

This command returns SNMP system variables information similar to this example.

```
SYSTEM VARIABLES
    Sys Name: NONE
    Sys Contact: NONE
    Sys Location: NONE
```

Minimum firmware level

8.30

Show SSD cache statistics

The `show ssdCache` command displays data about the SSD cache usage.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Support Admin role.

Syntax

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

Parameters

Parameter	Description
ssdCache	The name of the SSD cache for which you want to retrieve information. Enclose the SSD cache name in square brackets ([ ]). If the SSD cache name has special characters or numbers, you must enclose the SSD cache name in double quotation marks (" ") inside square brackets.

Parameter	Description
`ssdCacheStatistics`	An optional parameter to the `show ssdCache` command that indicates you want to retrieve cache statistics.
`controller`	Each controller stores SSD cache metadata for the volumes that it owns. Therefore, the SSD cache statistics are maintained and displayed per controller. Valid controller identifiers are `a`, `b`, or `both`, where `a` is the controller in slot A , `b` is the controller in slot B, and `both` is both controllers. Enclose the controller identifier in square brackets ([ ]). If you do not specify a controller, the default value is `both`.
`file`	The file path and the file name to which you want to save the SSD cache statistics. Additional statistics are available when you save the statistics to a file. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\ssdcachestats.csv"`. You can use any file name but you must use the `.csv` extension.

Notes

The following statistics are displayed on the screen:

- **Reads** — total number of host reads of SSD cache-enabled volumes.

  Compare the Reads relative to Writes. The Reads need to be greater than the Writes for effective SSD cache operation. The greater the ratio of Reads to Writes the better the operation of the cache.

- **Writes** — total number of host writes to SSD cache-enabled volumes.
- **Cache Hits** — a count of the number of cache hits.
- **Cache Hits (%)** — derived from Cache Hits/total reads.

  The Cache Hit percentage should be greater than 50 percent for effective SSD cache operation. A small number could be indicative of several things:

  - Ratio of Reads to Writes is too small.
  - Reads are not repeated.
  - Cache capacity is too small.

> (i) To help determine the ideal SSD cache capacity, you can run the Performance Modeling Tool using the `start ssdCache [ssdCacheName] performanceModeling` command.

- **Cache Allocation (%)** — The amount of SSD cache storage that is allocated, expressed as a percentage of the SSD cache storage that is available to this controller. Derived from allocated bytes / available bytes.

  Cache Allocation percentage normally shows as 100 percent. If this number is less than 100 percent, it means either the cache has not been warmed or the SSD cache capacity is larger than all the data being accessed. In the latter case, a smaller SSD cache capacity could provide the same level of performance. Note that this does not indicate that cached data has been placed into the SSD cache, it is simply a preparation step before data can be placed in the SSD cache.

- **Cache Utilization (%)** — The amount of SSD cache storage that contains data from enabled volumes, expressed as a percentage of SSD cache storage that is allocated. This value represents the utilization or density of the SSD cache. Derived from user data bytes / allocated bytes.

  Cache Utilization percentage normally is lower than 100 percent, perhaps much lower. This number shows the percent of SSD cache capacity that is filled with cache data. The reason this number is lower than 100 percent is that each allocation unit of the SSD cache, the SSD cache cache-block, is divided into smaller units called sub-blocks, which are filled somewhat independently. A higher number is generally better, but performance gains can be significant even with a smaller number.

These additional statistics are included when you save the data to a file:

- **Read Blocks** — Number of blocks in host reads.
- **Write Blocks** — Number of blocks in host writes.
- **Full Hit Blocks** — Number of block cache hit.

  The full hit blocks indicate the number of blocks that have been read entirely from SSD cache. The SSD cache is only beneficial to performance for those operations that are full cache hits.

- **Partial Hits** — Number of host reads where at least one block, but not all blocks, were in the SSD cache. This is an SSD cache **miss** where the reads were satisfied from the base volume.

  Partial cache hits and partial cache hit blocks result from an operation that has only a portion of its data in the SSD cache. In this case, the operation must retrieve the data from the cached HDD volume. The SSD cache offers no performance benefit for this type of hit. If the partial cache hit blocks count is higher than the full cache hit blocks, it is possible that a different I/O characteristic type (file system, database, or web server) could improve the performance.

- **Partial Hits — Blocks** — Number of blocks in Partial Hits.

  Partial cache hits and partial cache hit blocks result from an operation that has only a portion of its data in the SSD cache. In this case, the operation must retrieve the data from the cached HDD volume. The SSD cache offers no performance benefit for this type of hit. If the partial cache hit blocks count is higher than the full cache hit blocks, it is possible that a different I/O characteristic type (file system, database, or web server) could improve the performance.

- **Misses** — Number of host reads where none of the blocks were in the SSD cache. This is an SSD cache miss where the reads were satisfied from the base volume.

- **Misses — Blocks** — Number of blocks in Misses.

- **Populate Actions (Host Reads)** — Number of host reads where data was copied from the base volume to the SSD cache.

- **Populate Actions (Host Reads) — Blocks** — Number of blocks in Populate Actions (Host Reads).

- **Populate Actions (Host Writes)** — Number of host writes where data was copied from the base volume to the SSD cache.

  The Populate Actions (Host Writes) count may be zero for the cache configuration settings that do not fill the cache as a result of a Write I/O operation.

- **Populate Actions (Host Writes) — Blocks** — Number of blocks in Populate Actions (Host Writes).

- **Invalidate Actions** — Number of times data was invalidated/removed from the SSD cache. A cache invalidate operation is performed for every host write request, every host read request with Forced Unit Access (FUA), every verify request, and in some other circumstances.

- **Recycle Actions** — Number of times that the SSD cache block has been re-used for another base volume and/or a different LBA range.

  For effective cache operation, it is important that the number of recycles is small compared to the combined number of read and write operations. If the number of Recycle Actions is close to the combined number of Reads and Writes, then the SSD cache is thrashing. Either the cache capacity needs to be increased or the workload is not favorable for use with SSD cache.

- **Available Bytes** — Number of bytes available in the SSD cache for use by this controller.

  The available bytes, allocated bytes, and user data bytes are used to compute the Cache Allocation % and the Cache Utilization %.

- **Allocated Bytes** — Number of bytes allocated from the SSD cache by this controller. Bytes allocated from the SSD cache may be empty or they may contain data from base volumes.

  The available bytes, allocated bytes, and user data bytes are used to compute the Cache Allocation % and the Cache Utilization %.

- **User Data Bytes** — Number of allocated bytes in the SSD cache that contain data from base volumes.

  The available bytes, allocated bytes, and user data bytes are used to compute the Cache Allocation % and the Cache Utilization %.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Show SSD cache

The `show ssdCache` command displays information about the SSD cache.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Support Admin role.

Syntax

```
show ssdCache [ssdCacheName]
```

Parameter

Parameter	Description
ssdCache	The name of the SSD cache for which you want to retrieve information. Enclose the SSD cache name in square brackets ([ ]). If the SSD cache name has special characters or numbers, you must enclose the SSD cache name in double quotation marks (" ") inside square brackets.

Notes

This command returns the SSD cache information similar to this example.

```
SSD Cache name: my_cache

Status:                               Optimal
Type:                                 Read Only
I/O characteristic type:              File System
Maximum capacity allowed:             1,862.645 GB
Current capacity:                     557.792 GB
Additional capacity allowed           1,304.852 GB
Drive capacities:                     All 278.896 GB
Quality of Service (QoS) Attributes
   Security capable:                  No
   Secure:                            No
   Data Assurance (DA) capable:       No
Associated drives:

Tray      Slot
0         4
0         11
Volumes using SSD cache:              volume_test
```

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Show storage array auto configuration

The `show storageArray autoConfiguration` command shows the default auto-configuration that the storage array creates if you run the `autoConfigure storageArray` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

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=(SAS | NVMe4K)
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)
secureDrives=(fips | fde)]
```

Parameters

Parameter	Description
driveType	The type of drives that you want to use for the storage array. The `driveType` parameter is not required if only one type of drive is in the storage array. You must use this parameter when you have more than one type of drive in your storage array. Valid drive types are: • `SAS` • `NVMe4K`
driveMediaType	The type of drive media that you want to use for the mirror repository volume group. Valid drive media are these: • `HDD` — Use this option when you have hard drives in the drive tray. • `SSD` — Use this option when you have solid state drives in the drive tray. • `unknown` — Use if you are not sure what types of drive media are in the drive tray. • `allMedia` — Use this option when you want to use all types of drive media that are in the drive tray. Use this parameter when you use the `repositoryDriveCount` parameter. You must use this parameter when you have more than one type of drive media in your storage array.
raidLevel	The RAID level of the volume group that contains the drives in the storage array. Valid RAID levels are `0`, `1`, `3`, `5`, or `6`.
volumeGroupWidth	The number of drives in a volume group in the storage array, which depends on the capacity of the drives. Use integer values.
volumeGroupCount	The number of volume groups in the storage array. Use integer values.
volumesPerGroupCount	The number of equal-capacity volumes per volume group. Use integer values.

Parameter	Description
`hotSpareCount`	The number of hot spares that you want in the storage array. Use integer values.
`segmentSize`	The amount of data (in KB) that the controller writes on a single drive in a volume before writing data on the next drive. Valid values are `8`, `16`, `32`, `64`, `128`, `256`, or `512`.
`cacheReadPrefetch`	The setting to turn on or turn off cache read prefetch. To turn off cache read prefetch, set this parameter to `FALSE`. To turn on cache read prefetch, set this parameter to `TRUE`.
`securityType`	The setting to specify the security level when creating the volume groups and all associated volumes. These settings are valid: • `none` — The volume group and volumes are not secure. • `capable` — The volume group and volumes are capable of having security set, but security has not been enabled. • `enabled` — The volume group and volumes have security enabled.
`secureDrives`	The type of secure drives to use in the volume group. These settings are valid: • `fips` — To use FIPS compliant drives only. • `fde` — To use FDE compliant drives. ⓘ Use this parameter along with the `securityType` parameter. If you specify `none` for the `securityType` parameter, the value of the `secureDrives` parameter is ignored, because non-secure volume groups do not need to have secure drive types specified.

Notes

If you do not specify any properties, this command returns the RAID Level 5 candidates for each drive type. If RAID Level 5 candidates are not available, this command returns candidates for RAID Level 6, RAID Level 3, RAID Level 1, or RAID Level 0. When you specify auto configuration properties, the controllers validate that the firmware can support the properties.

Drives and volume groups

A volume group is a set of drives that are logically grouped together by the controllers in the storage array. The number of drives in a volume group is a limitation of the RAID level and the controller firmware. When you create a volume group, follow these guidelines:

- Beginning with firmware version 7.10, you can create an empty volume group so that you can reserve the capacity for later use.
- You cannot mix drive types, such as SAS and Fibre Channel, within a single volume group.
- The maximum number of drives in a volume group depends on these conditions:
  - The type of controller
  - The RAID level
- RAID levels include: 0, 1, 10, 3, 5, and 6 .
  - In a CDE3992 or a CDE3994 storage array, a volume group with RAID level 0 and a volume group with RAID level 10 can have a maximum of 112 drives.
  - In a CE6998 storage array, a volume group with RAID level 0 and a volume group with RAID level 10 can have a maximum of 224 drives.
  - A volume group with RAID level 3, RAID level 5, or RAID level 6 cannot have more than 30 drives.
  - A volume group with RAID level 6 must have a minimum of five drives.
  - If a volume group with RAID level 1 has four or more drives, the storage management software automatically converts the volume group to a RAID level 10, which is RAID level 1 + RAID level 0.
- If a volume group contains drives that have different capacities, the overall capacity of the volume group is based on the smallest capacity drive.
- To enable tray/drawer loss protection, refer to the following tables for additional criteria:

Level	Criteria for Tray Loss Protection	Minimum number of trays required
`Disk Pool`	The disk pool contains no more than two drives in a single tray.	6
`RAID 6`	The volume group contains no more than two drives in a single tray.	3
`RAID 3` or `RAID 5`	Each drive in the volume group is located in a separate tray.	3
`RAID 1`	Each drive in a RAID 1 pair must be located in a separate tray.	2
`RAID 0`	Cannot achieve Tray Loss Protection.	Not applicable

Level	Criteria for drawer loss protection	Minimum number of drawers required
`Disk Pool`	The pool includes drives from all five drawers and there are an equal number of drives in each drawer. A 60-drive tray can achieve Drawer Loss Protection when the disk pool contains 15, 20, 25, 30, 35, 40, 45, 50, 55, or 60 drives.	5
`RAID 6`	The volume group contains no more than two drives in a single drawer.	3
`RAID 3` or `RAID 5`	Each drive in the volume group is located in a separate drawer.	3
`RAID 1`	Each drive in a mirrored pair must be located in a separate drawer.	2
`RAID 0`	Cannot achieve Drawer Loss Protection.	Not applicable

Hot spares

With volume groups, a valuable strategy to protect data is to assign available drives in the storage array as hot spare drives. A hot spare is a drive, containing no data, that acts as a standby in the storage array in case a drive fails in a RAID 1, RAID 3, RAID 5, or RAID 6 volume group. The hot spare adds another level of redundancy to the storage array.

Generally, hot spare drives must have capacities that are equal to or greater than the used capacity on the drives that they are protecting. Hot spare drives must be of the same media type, the same interface type, and the same capacity as the drives that they are protecting.

If a drive fails in the storage array, the hot spare is normally substituted automatically for the failed drive without requiring your intervention. If a hot spare is available when a drive fails, the controller uses redundancy data parity to reconstruct the data onto the hot spare. Data evacuation support also allows data to be copied to a hot spare before the software marks the drive "failed."

After the failed drive is physically replaced, you can use either of the following options to restore the data:

When you have replaced the failed drive, the data from the hot spare is copied back to the replacement drive. This action is called copyback.

If you designate the hot spare drive as a permanent member of a volume group, the copyback operation is not needed.

The availability of tray loss protection and drawer loss protection for a volume group depends on the location of the drives that comprise the volume group. Tray loss protection and drawer loss protection might be lost because of a failed drive and the location of the hot spare drive. To make sure that tray loss protection and drawer loss protection are not affected, you must replace a failed drive to initiate the copyback process.

The storage array automatically selects Data Assurance (DA)-capable drives for hot spare coverage of DA-enabled volumes.

Make sure you have DA-capable drives in the storage array for hot spare coverage of DA-enabled volumes. For more information about DA-capable drives, refer to Data Assurance feature.

Secure-capable (FIPS and FDE) drives can be used as a hot spare for both secure-capable and non-secure-capable drives. Non-secure-capable drives can provide coverage for other non-secure-capable drives, and for secure-capable drives if the volume group does not have the security enabled. A FIPS volume group can only use a FIPS drive as a hot spare; however, you can use a FIPS hot spare for non-secure-capable, secure-capable, and secure-enabled volume groups.

If you do not have a hot spare, you can still replace a failed drive while the storage array is operating. If the drive is part of a RAID 1, RAID 3, RAID 5, or RAID 6 volume group, the controller uses redundancy data parity to automatically reconstruct the data onto the replacement drive. This action is called reconstruction.

Segment size

The size of a segment determines how many data blocks that the controller writes on a single drive in a volume before writing data on the next drive. Each data block stores 512 bytes of data. A data block is the smallest unit of storage. The size of a segment determines how many data blocks that it contains. For example, an 8-KB segment holds 16 data blocks. A 64-KB segment holds 128 data blocks.

When you enter a value for the segment size, the value is checked against the supported values that are provided by the controller at run time. If the value that you entered is not valid, the controller returns a list of valid values. Using a single drive for a single request leaves other drives available to simultaneously service other requests. If the volume is in an environment where a single user is transferring large units of data (such as multimedia), performance is maximized when a single data transfer request is serviced with a single data stripe. (A data stripe is the segment size that is multiplied by the number of drives in the volume group that are used for data transfers.) In this case, multiple drives are used for the same request, but each drive is accessed only once.

For optimal performance in a multiuser database or file system storage environment, set your segment size to minimize the number of drives that are required to satisfy a data transfer request.

Cache read prefetch

Cache read prefetch lets the controller copy additional data blocks into cache while the controller reads and copies data blocks that are requested by the host from the drive into cache. This action increases the chance that a future request for data can be fulfilled from cache. Cache read prefetch is important for multimedia applications that use sequential data transfers. Valid values for the `cacheReadPrefetch` parameter are `TRUE` or `FALSE`. The default is `TRUE`.

Security type

Use the `securityType` parameter to specify the security settings for the storage array.

Before you can set the `securityType` parameter to `enabled`, you must create a storage array security key. Use the `create storageArray securityKey` command to create a storage array security key. These commands are related to the security key:

- `create storageArray securityKey`

- `export storageArray securityKey`

- `import storageArray securityKey`

- `set storageArray securityKey`

- `enable volumeGroup [volumeGroupName] security`

- `enable diskPool [diskPoolName] security`

Secure drives

Secure-capable drives can be either Full Disk Encryption (FDE) drives or Federal Information Processing Standard (FIPS) drives. Use the `secureDrives` parameter to specify the type of secure drives to use. The values you can use are `fips` and `fde`.

Example command

```
show storageArray autoConfiguration securityType=capable
secureDrives=fips;
```

Minimum firmware level

7.10 adds RAID Level 6 capability and removes hot spare limits.

7.50 adds the `securityType` parameter.

7.75 adds the `dataAssurance` parameter.

8.25 adds the `secureDrives` parameter.

Show AutoSupport configuration

The `show storageArray autoSupport` command displays the AutoSupport bundle collection settings for the storage array.

Supported Arrays

This command is operational for either the E2800, E5700, EF600, and EF300 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin or Storage Monitor role.

Context

The command output from this command shows the following configuration information:

- The activation status for this management domain of the AutoSupport feature, the AutoSupport OnDemand feature, and the AutoSupport Remote Diagnostics feature
- Delivery parameters that depend on the configured delivery method:
    - Delivery method is Email (SMTP): Destination email address, mail relay server, and sender email

address are shown

- ◦ Delivery method is HTTP or HTTPs:
    - ▪ Direct connection - destination IP address is shown
    - ▪ Proxy server connection - Host address, port number, and authentication details are shown
    - ▪ Automatic proxy configuration script (PAC) connection - script location is shown
- Autosupport daily and weekly preferred time ranges
- Information about ASUP capabilities, the chassis serial number, and the configured daily and weekly schedules

Syntax

```
show storageArray autoSupport
```

Parameters

None.

Examples

```
   SMcli -n Array1 -c "show storageArray autoSupport;"

   The AutoSupport feature is enabled on this storage array.
   The AutoSupport OnDemand feature is enabled on this storage array.
   The AutoSupport Remote Diagnostics feature is enabled on this storage
array.

   Delivery Method: Email (SMTP)
     Destination email address: http://support.mycompany.com/put/AsupPut/
     Mail relay server: ra.eng.netapp.com
     Sender email address: user@netapp.com
   -or-
   Delivery Method: HTTP
     Destination IP address: http://support.mycompany.com/put/AsupPut/
     Connection: Direct
         -or-
     Connection: Proxy server
      Host Address: 10.227.76.178
       Port number: 8080
       Authentication required: Yes
        User name: admin
        Password: ********
         -or-
     Connection: Automatic proxy configuration script (PAC)
      Script location: http://esgweb.eng.mycompany.com/proxy.pac

   The AutoSupport daily schedule preferred time range is from 12:00 AM to
01:00 AM.
   The AutoSupport weekly schedule preferred time range is from 10:00 PM
to 11:00 PM on Thursday, Saturday.

   AutoSupport Capable   AutoSupport OnDemand Capable   Chassis Serial
Number   Daily Schedule   Weekly Schedule
   Yes (enabled)         Yes                           SX94500434
12:55 AM        10:08 PM on Thursdays

   SMcli completed successfully.
```

Minimum firmware level

8.40

Show storage array cache mirror data assurance check enable

The `show storageArray cacheMirrorDataAssuranceCheckEnable` command

returns the enablement status of the cache mirror data assurance check feature.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

```
show storageArray cacheMirrorDataAssuranceCheckEnable
```

Parameters

None.

Minimum firmware level

8.41 New command parameter.

Show storage array controller health image

The `show storageArray controllerHealthImage` command shows details of the controller health image on the controller cache, if a controller health image is available, on storage arrays that support the controller health image.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

> (i) With firmware version 8.20 the `coreDump` parameter is replaced with the `controllerHealthImage` parameter.

If the storage array does not support the controller health image feature, this command returns an error.

Syntax

```
show storageArray controllerHealthImage
```

Parameters

None.

Minimum firmware level

7.83

8.20 replaces the `coreDump` parameter with the `controllerHealthImage` parameter.

Show storage array DBM database

The `show storageArray dbmDatabase` 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.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

```
show storageArray dbmDatabase
```

Parameters

None.

Notes

This command returns the configuration database information in a format similar to this example.

```
Configuration Database MetadataLast Host Backup: <date stamp>
```

CTL	LOCATION	REVISION	ID	GEN NUMBER	STATUS	ACCESS MODE
A	Cache	X.Y	999999	999999	R/W	Optimal
B	Cache	X.Y	999999	999999	R/W	Optimal

CTL	LOCATION	REVISION	ID	GEN NUMBER	STATUS	ACCESS MODE
N/A	Disk	X.Y	999999	999999	R/W	Optimal

Minimum firmware level

7.83

Show storage array directory services summary

The `show storageArray directoryServices summary` command displays the directory services configuration summary.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
show storageArray directoryServices summary
```

Parameters

None.

Examples

```
SMcli -n Array1 -c "show storageArray directoryServices summary;"

Directory Servers:
  DomainId1
    Domain name(s): company.com, name2, name3
    Server URL: ldaps://hqldap.test.eng.company.com:636
    Bind account:
CN=prnldap,OU=securedsvcaccounts,OU=systemaccounts,DC=hq,DC=company,DC=com
    Bind password: ******
    Login base: %s@company.com
    Search base DN: OU=_Users,DC=hq,DC=company,DC=com
    Username attribute: sAMAccountName
    Group attribute(s): memberOf, attributeX
    Default role: Monitor
    Roles Mapping
      Group DN
      CN=ng-hsg-bc-
madridsecurity,OU=Managed,OU=CompanyGroups,DC=hq,DC=company,DC=com
        Roles
        storage.monitor, security.admin, storage.admin
      Group DN
      OU=Managed,OU=CompanyGroups,DC=hq,DC=company,DC=com
        Roles
        storage.monitor
  DomainId2
    Domain name(s): aj.MadridSecurity
    Server URL: ldap://10.113.90.166:389
    Search base DN: CN=Users,DC=aj,DC=madridsecurity
    Username attribute: sAMAccountName
    Group attribute(s): memberOf
    Default role: None
    Roles Mapping
      Group DN
      CN=Administrators,CN=Builtin,DC=aj,DC=MadridSecurity
        Roles
        storage.monitor, storage.admin

SMcli completed successfully.
```

Show storage array host connectivity reporting

The `show storageArray hostConnectivityReporting` command returns the
enablement status of the host connectivity reporting feature.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

```
show storageArray hostConnectivityReporting
```

Parameters

None.

Minimum firmware level

8.42 New command parameter.

Show storage array host topology

The `show storageArray hostTopology` command returns the storage partition topology, the host type labels, and the host type index for the host storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

```
show storageArray hostTopology
```

Parameters

None.

Notes

This command returns the host topology information similar to this example.

```
TOPOLOGY DEFINITIONS
 DEFAULT GROUP
  Default type: Windows 2000/Server 2003 Non-Clustered
  Host Group: scott
   Host: scott1
     Host Port: 28:37:48:55:55:55:55:55
      Alias: scott11
      Type: Windows 2000/Server 2003 Clustered
    Host: scott2
     Host Port: 98:77:66:55:44:33:21:23
      Alias: scott21
      Type: Windows 2000/Server 2003 Clustered
    Host: Bill
     Host Port: 12:34:55:67:89:88:88:88
      Alias: Bill1
      Type: Windows 2000/Server 2003 Non-Clustered
NVSRAM HOST TYPE INDEX DEFINITIONS
HOST TYPE                       ALUA/AVT STATUS   ASSOCIATED INDEXS
AIX MPIO                        Disabled          9
AVT_4M                          Enabled           5
Factory Default                 Disabled          0
HP-UX                           Enabled           15
Linux (ATTO)                    Enabled           24
Linux (DM-MP)                   Disabled          6
Linux (Pathmanager)             Enabled           25
Mac OS                          Enabled           22
ONTAP                           Disabled          4
SVC                             Enabled           18
Solaris (v11 or Later)          Enabled           17
Solaris (version 10 or earlier) Disabled          2
VMWare                          Enabled           10 (Default)
Windows                         Enabled           1
```

Minimum firmware level

5.20

Show storage array negotiation defaults

The `show storageArray iscsiNegotiationDefaults` command returns information about connection-level settings that are subject to initiator-target negotiation.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

```
show storageArray iscsiNegotiationDefaults
```

Parameters

None.

Notes

Information returned includes controller tray default settings (that is, those settings that are the starting point for negotiation) and the current active settings.

Minimum firmware level

7.10

Show storage array LUN mappings

The `show storageArray lunMappings` command returns information from the storage array profile about the logical unit number (LUN) or namespace ID (NSID) mappings in the storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

Default group LUN or NSID mappings are always shown. If you run this command without any parameters, this command returns all of the LUN or NSID mappings.

Syntax

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

Parameters

Parameter	Description
`host`	The name of a specific host for which you want to see the LUN or NSID mappings. Enclose the host name in double quotation marks (" ") inside of square brackets ([ ]).
`hostGroup`	The name of a specific host group for which you want to see the LUN or NSID mappings. Enclose the host group name in double quotation marks (" ") inside of square brackets ([ ]).

Notes

This command returns host topology information similar to this example.

```
MAPPINGS (Storage Partitioning - Enabled (0 of 16 used))
VOLUME NAME   LUN   CONTROLLER   ACCESSIBLE BY   VOLUME STATUS
Access Volume 7   A,B             Default Group   Optimal
21            21    B             Default Group   Optimal
22            22    B             Default Group   Optimal
```

Minimum firmware level

6.10

Show storage array ODX setting

The `show storageArray odxsetting` command returns the current settings for Offloaded Data Transfer (ODX) and VMware vStorage API Array Architecture (VAAI) on the storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

The settings for this command can be one of the following:

- True — ODX and VAAI are turned on.

- False — ODX and VAAI are turned off.
- Inconsistent — The controllers do not have the same settings.
- Unknown — The setting for ODX or VAAI cannot be determined.

Syntax

```
show storageArray odxsetting
```

Parameters

None.

Notes

This command returns the ODX and VAAI information similar to this example.

```
Windows ODX Setting Status
odxEnabled  True | False | Inconsistent | Unknown
vaaiEnabled True | False | Inconsistent | Unknown
```

Minimum firmware level

8.20

Show storage array power information

The `show storageArray powerInfo` command returns information about the amount of power consumed by the entire storage array and each tray in the storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

```
show storageArray powerInfo
```

Parameters

None.

Notes

This command returns power consumption information similar to this example.

```
total power drawn: 310 watts
number of trays: 1
tray power input details:
   tray id  power supply serial number  input power
   0        0                           160 watts
   0        1                           150 watts
```

Minimum firmware level

8.10

Show certificate revocation check settings

The `show storageArray revocationCheckSettings` command allows you to view the certificate revocation settings for the storage array.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Parameters

None.

Syntax

```
show storageArray revocationCheckSettings
```

Example

```
SMcli -n Array1 c "show storageArray revocationCheckSettings;"
Revocation Checking: Disabled
OCSP Responder Server URL: https://ocspResponderURL.com
SMcli completed successfully.
```

Minimum firmware level

8.42

Display storage array syslog configuration

The `show storageArray syslog` command allows you to view the configuration of a syslog server used for storing audit logs. Configuration information includes a server ID, along with its address, protocol, and port number.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
show storageArray syslog (allServers | id="<id>")
```

Parameters

Parameter	Description
allServers	Displays all syslog configurations.
id	Displays the syslog configuration with the matching ID.

Examples

```
SMcli -n Array1 -c "show storageArray syslog allServers;"
SMcli -n Array1 -c "show storageArray syslog id=\"331998fe-3154-4489-b773-
b0bb60c6b48e\";"


ID:              331998fe-3154-4489-b773-b0bb60c6b48e
Server Address: 192.168.2.1.com
Port:           514
Protocol:       udp
Components
1. Component Name: auditLog


SMcli completed successfully.
```

Minimum firmware level

8.42

Show installed trusted CA certificates summary

The `show storageArray trustedCertificate summary` command displays the trusted installed CA certificates summary from the array. This command is useful to use before performing the `delete storageArray trustedCertificate` command so that you know the alias names of the certificates to delete.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
show storageArray trustedCertificate [all | allUserInstalled|
  aliases=("alias1" ... "aliasN")] summary
```

Parameters

Parameter	Description
all	Allows you to specify the retrieval of all certificates, including pre-installed and user installed certificates.
allUserInstalled	Allows you to specify the retrieval of all user installed certificates. This is the default option.
aliases	Allows the user to specify which pre-installed or user installed trusted certificate to retrieve by alias. Enclose all the aliases in parentheses. If you enter more than one alias, separate them with a space.

Examples

Sample output may be different than illustrated below.

```
SMcli -n Array1 -c "show storageArray trustedCertificate allUserInstalled
summary;"
=============================
Trusted Certificates
=============================
Alias:         19527b38-8d26-44e5-8c7f-5bf2ca9db7cf
Type:          Pre-installed | User installed
Subject DN:    CN=Corp Issuing CA 1
Issuer DN:     CN=Corp Root CA
Start:         date
Expire:        date
--------------------
Alias:         myAliasName
Type:          Pre-installed | User installed
Subject DN:    CN=Corp Issuing CA 1
Issuer DN:     CN=Corp Root CA
Start:         date
Expire:        date


SMcli completed successfully.
```

Minimum firmware level

8.40

Show unconfigured initiators

The `show storageArray unconfiguredInitiators` command returns a list of initiators that have been detected by the storage array but are not yet configured into the storage array topology.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

This command replaces the show storageArray unconfiguredIscsiInitiators command.

Syntax

```
show storageArray unconfiguredInitiators
```

Parameters

None.

Minimum firmware level

8.50

Show storage array unconfigured iSCSI initiators

The `show storageArray unconfiguredIscsiInitiators` command returns a list of initiators that have been detected by the storage array but are not yet configured into the storage array topology.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

This command is deprecated. The command that replaces it is show storageArray unconfiguredInitiators.

Syntax

```
show storageArray unconfiguredIscsiInitiators
```

Parameters

None.

Minimum firmware level

7.10

8.50 deprecated this command.

Show storage array unreadable sectors

The `show storageArray unreadableSectors` command returns a table of the addresses of all of the sectors in the storage array that cannot be read.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

The returned 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 — 0xnnnnnnnn)
- Drive location (tray t, slot s)
- Drive-relative logical block address (hexadecimal format — 0xnnnnnnnn)
- 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
```

Parameters

None.

Minimum firmware level

6.10

Display storage array user session

The `show storageArray userSession` command allows you to view the session timeout period for System Manager.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin or Storage Monitor role.

Parameters

None.

Syntax

```
show storageArray userSession
```

Minimum firmware level

8.41

Show storage array

The `show storageArray` command returns configuration information about the storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

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
[autoSupport| autoSupportConfig | profile |
batteryAge | connections | defaultHostType | healthStatus |
hostTypeTable | hotSpareCoverage | features | time |
volumeDistribution | longRunningOperations | summary |
preferredVolumeOwners |
iscsiNegotiationDefaults | unconfiguredIscsiInitiators |
autoLoadBalancingEnable |
cacheMirrorDataAssuranceCheckEnable | hostConnectivityReporting]
```

Parameters

Parameter	Description
`autoLoadBalancingEnable`	The parameter to return the enablement status of the Automatic Load Balancing feature. ⓘ When the Automatic Load Balancing feature is enabled, the Host Connectivity Reporting feature will also be enabled.
`autoSupport`	ⓘ This parameter is only valid for E2800 or E5700 storage arrays running with an `https` client type. For E2800 or E5700 storage arrays running with a client type, use the `autoSupportConfig` parameter.
`autoSupportConfig`	The parameter to return information about the current state of the operation to automatically collect support data. The following information is returned: • Whether the operation is enabled or disabled • The location of the folder where the support data file is located ⓘ This parameter is only valid for E2800 or E5700 storage arrays running with a `symbol` client type. For E2800 or E5700 storage arrays running with an `https` client type, use the **autoSupport** parameter.
`batteryAge`	The parameter to show the status, the age of the battery in days, and the number of days until the battery needs to be replaced. The information for both batteries is shown.
`cacheMirrorDataAssuranceCheckEnable`	The parameter to returns the enablement status of the cache mirror data assurance feature.
`connections`	The parameter to show a list of where the drive channel ports are located and where the drive channels are connected.
`defaultHostType`	The parameter to show the default host type and the host type index.

Parameter	Description
`features`	The parameter to show the feature configuration of the storage array.
`healthStatus`	The parameter to show the health, logical properties, and physical component properties of the storage array.
`hostConnectivityReporting`	The parameter to return the enablement status of the host connectivity reporting feature.
`hostTypeTable`	The parameter to show a table of all of the host types that are known to the controller. Each row in the table shows a host type index and the platform that the host type index represents.
`hotSpareCoverage`	The parameter to show information about which volumes of the storage array have hot spare coverage and which volumes do not.
`iscsiNegotiationDefaults`	The parameter to return information about connection-level settings that are subject to initiator-target negotiation.
`longRunningOperations`	The parameter to show the long running operations for each volume group and each volume in the storage array. The `longRunningOperation` parameter returns this information: • Name of the volume group or volume • Long running operation • Status • % complete • Time left
`preferredVolumeOwners`	The parameter to show the preferred controller owner for each volume in the storage array.

Parameter	Description
`profile`	The parameter to show all of the properties of the logical components and the physical components that comprise the storage array. The information appears in several screens. ⓘ The profile parameter returns detailed information about the storage array. The information covers several screens on a display. You might need to increase the size of your display buffer to see all the information. Because this information is so detailed, you might want to save the output of this parameter to a file. Use the following command to save the profile output to a file: ```c:\...\smX\client>smcli 123.45.67.88 123.45.67.89 -c "show storagearray profile;" -o "c:\folder\storagearray profile.txt"```
`summary`	The parameter to show a concise list of information about the storage array configuration.
`time`	The parameter to show the current time to which both controllers in the storage array are set.
`unconfiguredIscsiInitiators`	The parameter to return a list of initiators that have been detected by the storage array but are not yet configured into the storage array topology.
`volumeDistribution`	The parameter to show the current controller owner for each volume in the storage array.

Notes

The `profile` parameter shows detailed information about the storage array. The information appears on several screens on a display monitor. You might need to increase the size of your display buffer to see all of the information. Because this information is so detailed, you might want to save the output of this parameter to a file. To save the output to a file, run the `show storageArray` command that looks like this example.

```
-c "show storageArray profile;" -o "c:\\folder\\storageArrayProfile.txt"
```

The previous command syntax is for a host that is running a Windows operating system. The actual syntax varies depending on your operating system.

When you save information to a file, you can use the information as a record of your configuration and as an aid during recovery.

> ⓘ While the storage array profile returns a large amount of data that is all clearly labeled, what's new in the 8.41 release is the additional wear life reporting information for SSD drives in E2800 or E5700 storage arrays. While previously the wear life reporting included information on average erase count and spare blocks remaining, it now includes the percent endurance used. The percent endurance used is the amount of data written to the SSD drives to date divided by the total theoretical write limit for the drives.

The `batteryAge` parameter returns information in this form.

```
Battery status: Optimal
    Age: 1 day(s)
    Days until replacement: 718 day(s)
```

The newer controller trays do not support the `batteryAge` parameter.

The `defaultHostType` parameter returns information in this form.

```
Default host type: Linux (Host type index 6)
```

The `healthStatus` parameter returns information in this form.

```
Storage array health status = optimal.
```

The `hostTypeTable` parameter returns information in this form.

```
NVSRAM HOST TYPE INDEX DEFINITIONS
HOST TYPE                            ALUA/AVT STATUS    ASSOCIATED INDEXS
AIX MPIO                             Disabled           9
AVT_4M                               Enabled            5
Factory Default                      Disabled           0
HP-UX                                Enabled            15
Linux (ATTO)                         Enabled            24
Linux (DM-MP)                        Disabled           6
Linux (Pathmanager)                  Enabled            25
Mac OS                               Enabled            22
ONTAP                                Disabled           4
SVC                                  Enabled            18
Solaris (v11 or Later)               Enabled            17
Solaris (version 10 or earlier)      Disabled           2
VMWare                               Enabled            10 (Default)
Windows                              Enabled            1
```

The `hotSpareCoverage` parameter returns information in this form.

```
The following volume groups are not protected: 2, 1
Total hot spare drives: 0
   Standby: 0
   In use: 0
```

The `features` parameter returns information that shows which features are enabled, disabled, evaluation, and available to be installed. This command returns the feature information in a format similar to this:

```
PREMIUM FEATURE           STATUS

asyncMirror               Trial available
syncMirror                Trial available/Deactivated
thinProvisioning          Trial available
driveSlotLimit            Enabled (12 of 192 used)
snapImage                 Enabled (0 of 512 used) - Trial version expires
m/d/y
snapshot                  Enabled (1 of 4 used)
storagePartition          Enabled (0 of 2 used)
volumeCopy                Enabled (1 of 511 used)
SSDSupport                Disabled (0 of 192 used) - Feature Key required
driveSecurity             Disabled - Feature Key required
enterpriseSecurityKeyMgr  Disabled - Feature Key required
highPerformanceTier       Disabled - Feature Key required
```

The `time` parameter returns information in this form.

```
Controller in Slot A

Date/Time: Thu Jun 03 14:54:55 MDT 2004
Controller in Slot B

Date/Time: Thu Jun 03 14:54:55 MDT 2004
```

The `longRunningOperations` parameter returns information in this form:

```
LOGICAL DEVICES   OPERATION          STATUS          TIME REMAINING
Volume-2          Volume Disk Copy   10% COMPLETED   5 min
```

The information fields returned by the `longRunningOperations` parameter have these meanings:

- `NAME` is the name of a volume that is currently in a long running operation. The volume name must have the "Volume" as a prefix.
- `OPERATION` lists the operation being performed on the volume group or volume.
- `% COMPLETE` shows how much of the long running operation has been performed.
- `STATUS` can have one of these meanings:
  - Pending — The long running operation has not started but will start after the current operation is completed.
  - In Progress — The long running operation has started and will run until completed or stopped by user request.
- `TIME REMAINING` indicates the duration remaining to completing the current long running operation. The time is in an "hours minute" format. If less than an hour remains, only the minutes are shown. If less than a minute remains, the message "`less than a minute`" is shown.

The `volumeDistribution` parameter returns information in this form.

```
volume name: 10
      Current owner is controller in slot: A

volume name: CTL 0 Mirror Repository
      Current owner is controller in slot: A

volume name: Mirror Repository 1
      Current owner is controller in slot:A

volume name: 20
      Current owner is controller in slot:A

volume name: JCG_Remote_MirrorMenuTests
      Current owner is controller in slot:A
```

Minimum firmware level

5.00 adds the `defaultHostType` parameter.

5.43 adds the `summary` parameter.

6.10 adds the `volumeDistribution` parameter.

6.14 adds the `connections` parameter.

7.10 adds the `autoSupportConfig` parameter.

7.77 adds the `longRunningOperations` parameter.

7.83 returns information that includes the support for the new features released in the storage management software version 10.83. In addition, the information returned has been expanded to show the status of the features in the storage array.

8.30 adds the `autoLoadBalancingEnable` parameter.

8.40 adds the `autoSupport` parameter.

8.40 deprecates the `autoSupportConfig` parameter for E2800 or E5700 storage arrays running with an `https` client type.

8.41 adds wear life monitoring for SSD drives to the storage array profile. This information is only displayed for E2800 and E5700 storage arrays.

8.42 adds the `hostConnectivityReporting` parameter.

8.63 adds the Resource-Provisioned Volumes entry under the `profile` parameter results.

Show synchronous mirroring volume candidates

The `show syncMirror candidates` command returns information about the candidate volumes on a remote storage array that you can use as secondary volumes in a Synchronous Mirroring configuration.

Supported Arrays

This command applies to any individual storage array, with some restrictions. If you are running the command on the E2700 or E5600 array, there are no restrictions.

> ⓘ If you are running the command on the E2800 or E5700 array, the client type must be set to `symbol`. This command will not execute if they client type is set to `https`.

Roles

To execute this command on an E2800 or E5700 storage array, you must have the Storage Admin or Storage Monitor role.

Context

> ⓘ 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"
```

Parameters

Parameter	Description
`primary`	The name of the local volume that you want for the primary volume in the remote-mirrored pair. Enclose the primary volume name in double quotation marks (" ").
`remoteStorageArrayName`	The remote storage array that contains possible volumes for a secondary volume. If the remote storage array name has special characters, you must also enclose the remote storage array name in double quotation marks (" ").

Minimum firmware level

5.40

Show synchronous mirroring volume synchronization progress

The `show syncMirror synchronizationProgress` command returns the progress of data synchronization between the primary volume and the secondary volume in a Synchronous Mirroring configuration.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, and E5700 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800 or E5700 storage array, you must have the Storage Admin or Storage Monitor role.

Context

This command shows the progress as a percentage of data synchronization that has been completed.

> ⓘ 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
```

Parameter

Parameter	Description
`volume`	The name of the primary volume of the remote mirrored pair for which you want to check synchronization progress. 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.

Parameter	Description
`volumes`	The names of the primary volume of the remote mirrored pair for which you want to check synchronization progress. Enter the names of the volumes using these rules: • Enclose all of the names in square brackets ([ ]). • Separate each of the names with a space. If the volume names have special characters or consist only of numbers, enter the names using these rules: • 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.

Minimum firmware level

5.40

Show syslog configuration

The `show syslog summary` command displays the syslog alert configuration information.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin or Storage Monitor role.

Syntax

```
show syslog summary
```

Parameters

None.

Examples

```
SYSLOG SUMMARY
    Default facility: 3
    Default tag: StorageArray
    Syslog format: rfc5424
    Syslog Servers
        Server Address              Port Number
        serverName1.company.com     514
        serverName2.company.com     514

SMcli completed successfully.
```

Minimum firmware level

8.40

11.70.1 added the `syslogFormat` parameter to specify the Syslog message format.

Show string

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

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

```
show "textString"
```

Parameters

None.

Notes

Enclose the string in double quotation marks (" ").

Minimum firmware level

6.10

Show volume action progress

The `show volume actionProgress` command returns information about the volume action and amount of the long-running operation that is completed for a long-running operation on a volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

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

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
```

Parameter

Parameter	Description
volume	The name of a volume for which you want to retrieve information about a long running operation. Enclose the volume name in square brackets ([ ]). If the volume name has special characters or numbers, you must enclose the name in double quotation marks (" ") inside square brackets.

Minimum firmware level

5.43

Show volume performance statistics

The `show volume performanceStats` command returns information about volume performance.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

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
```

Parameters

Parameter	Description
allVolumes	The parameter to return performance statistics about all of the volumes in the storage array.

Parameter	Description
`volume`	The name of a volume for which you want to retrieve information. Enclose the volume name in square brackets ([ ]). If the volume name has special characters or numbers, you must enclose the name in double quotation marks (" ") inside square brackets.
`volumes`	The names of several volumes for which you want to retrieve information. Enter the names of the volumes using these rules: • 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: • 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.

Notes

Before you run the `show volume performanceStat` command, run the `set session performanceMonitorInterval` command and the `set session performanceMonitorIterations` command to define how often you collect the statistics.

The `show volume performanceStat` command returns volume performance statistics as shown in this example:

```
Performance Monitor Statistics for Storage Array: Tyler -
Date/Time: 11/6/12 10:00: 34 AM - Polling interval in seconds: 5


"Storage Arrays","Total IOs","Read %","Primary Read Cache Hit %",
"Primary Write Cache Hit %","SSD Read Cache Hit %","Current MBs/sec",
"Maximum MBs/sec","Current IOs/sec","Maximum IOs/sec","Minimum IOs/sec",
"Average IOs/sec","Minimum MBs/sec","Average MBs/sec","Current IO
Latency",
"Maximum IO Latency","Minimum IO Latency","Average IO Latency"

"Capture Iteration: 1","","","","","","","","","","","","","","","","",""
"Date/Time: 11/6/12 10:00:34
AM","","","","","","","","","","","","","","",
    "","","""Volume
Unnamed","0.0","","0.0","0.0","0.0","0.0","0.0","0.0","0.0","0.0",
    "0.0","0.0","0.0","0.0","0.0","0.0","0.0"
```

Minimum firmware level

6.10

Show volume reservations

The `show volume reservations` command returns information about the volumes that have persistent reservations.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

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

Parameters

Parameter	Description
`allVolumes`	The parameter to return performance statistics about all of the volumes in the storage array.
`volume`	The name of a volume for which you want to retrieve information. Enclose the volume name in square brackets ([ ]). If the volume name has special characters or numbers, you must enclose the name in double quotation marks (" ") inside square brackets.
`volumes`	The names of several volumes for which you want to retrieve information. Enter the names of the volumes using these rules: • 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: • 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.

Minimum firmware level

5.40

Show volume

The `show volume summary` command returns information about a volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

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 (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 mirror repository volumes

Syntax

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

Parameters

Parameter	Description
allVolumes	This parameter returns performance statistics about all of the volumes in the storage array.
volume	The name of a volume for which you want to retrieve information. Enclose the volume name in square brackets ([ ]). If the volume name has special characters or numbers, you must enclose the name in double quotation marks (" ") inside square brackets.

Parameter	Description
volumes	The names of several volumes for which you want to retrieve information. Enter the names of the volumes using these rules: • 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: • 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.
summary	The setting to return a concise list of information about the volumes.

Show thin volume

The `show volume` command returns the expansion history or the consumed capacity for the specified thin volume or volumes.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

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

Parameters

Parameter	Description
`allVolumes`	This parameter returns information about all of the thin volumes in the storage array.
`volume`	The name of a thin volume for which you are retrieving information. Enclose the thin volume name in square brackets ([ ]). If the thin volume name has special characters or numbers, you must enclose the thin volume name in double quotation marks (" ") inside square brackets.
`volumes`	The names of several thin volumes for which you want to retrieve information. Enter the names of the volumes using these rules: • 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: • 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.
`consumedCapacity`	The setting to return a concise list of information about the consumed capacity of the thin volumes.
`expansionHistory`	The setting to return a concise list of information about the expansion history of the thin volumes.
`file`	The `file` parameter specifies a file to log the output of the `expansionHistory` parameter. The `file` is valid only when used with the `expansionHistory` parameter. An invalid file name causes the command to fail.

Notes

With the `expansionHistory` parameter, the command returns information similar to the example shown below.

```
Thin volume name: volume-nameRepository volume Name: REPOS_NNNN
```

Logged Time	Expansion Type	Start Capacity	End Capacity
MM/DD/YYYY HH:MM:SS	Manual|Automatic	NNNNNNNN bytes	NNNNNNNN bytes

With the `consumedCapacity` parameter, the command returns information similar to the example shown below.

Volume	Provisioned Capacity	Consumed Capacity	Quota	% Prov.Consumed
`volumeName`	500.000 GB	230.000 GB	700.000 GB	46%

Minimum firmware level

7.83

Show volume copy target candidates

The `show volumeCopy source targetCandidates` command returns information about the candidate volumes that you can use as the target for a volume copy operation. This command is valid for snapshot volume copy pairs.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

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

Parameter

Parameter	Description
`source`	The name of the source volume for which you are trying to find a candidate target volume. 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.

Show volume copy source candidates

The `show volumeCopy sourceCandidates` command returns information about the candidate volumes that you can use as the source for a volume copy operation. This command is valid for snapshot volume copy pairs.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

```
show volumeCopy sourceCandidates
```

Parameters

None.

Notes

This command returns volume copy source information as shown in this example.

```
Volume Name: finance
   Capacity: 4.0 GB
   Volume Group: 1
Volume Name: engineering
   Capacity: 4.0 GB
   Volume Group: 2
```

Show volume copy

The `show volumeCopy` command returns information about volume copy operations.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

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 snapshot volume copy pairs.

Syntax

```
show volumeCopy (allVolumes | source ["sourceName"] |
target ["targetName"])
```

Parameters

Parameter	Description
allVolumes	The setting to return information about volume copy operations for all of the volume copy pairs.
source	The name of the source volume about which you want to retrieve information. Enclose the source volume name in double quotation marks (" ") inside of square brackets ([ ]).
target	The name of the target volume about which you want to retrieve information. Enclose the target volume name in double quotation marks (" ") inside of square brackets ([ ]).

Show volume group export dependencies

The `show volumeGroup exportDependencies` 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.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

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

Parameter

Parameter	Description
volumeGroup	The name of the volume group for which you want to show export dependencies. Enclose the volume group name in square brackets ([ ]).

Notes

This command spins up the drives in a volume group, reads the DACstore, and shows a list of import dependencies for the volume group. The volume group must be in an Exported state or a Forced state.

Minimum firmware level

7.10

Show volume group import dependencies

The `show volumeGroup importDependencies` 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.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Syntax

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

Parameters

Parameter	Description
volumeGroup	The name of the volume group for which you want to show import dependencies. Enclose the volume group name in square brackets ([ ]).
cancelImport	The setting to spin the drives back down after the volume group dependencies have been read. To spin down the drives, set this parameter to TRUE. To let the drives stay spinning, set this parameter to FALSE.

Notes

This command returns the dependencies of a specific volume group, which must be in an Exported state or a Forced state. If a decision is made to retain the listed dependencies, then the cancelImport parameter can be enforced to spin the drives back down.

You must run the show volumeGroup importDependencies command before you run the start volumeGroup import command.

Minimum firmware level

7.10

Show volume group

The show volumeGroup command returns information about a volume group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Storage Monitor role.

Context

This command returns this information about a volume group:

- The status (such as Optimal, Degraded, Failed, Missing)
- The capacity
- The current owner (the controller in slot A or the controller in slot B)
- The RAID level
- The drive media type (HDD or SSD)
- The drive interface type (Fibre Channel, iSCSI, InfiniBand, SAS)
- Tray loss protection (yes or no)

- Secure capable - indicates whether the volume group is composed of all secure-capable drives. Secure-capable drives can be either FDE drives or FIPS drives.

- Secure - Indicates whether the volume group has drive security turned on (this is called secure enabled).

- The associated volumes and free capacity

- The associated drives

- Data Assurance capabilities and presence of Data Assurance enabled volumes

- Resource provisioning capabilities

Syntax

```
show volumeGroup [volumeGroupName]
```

Parameter

Parameter	Description
volumeGroup	The name of the volume group for which you want to show information. Enclose the volume group name in square brackets ([ ]).

Notes

This command returns volume group information as shown in this example:

```
Name:                 SecureGroup

      Status:           Optimal
      Capacity:         120.000 GB
      Current owner: Controller in slot A

      Quality of Service (QoS) Attributes

         RAID level:                   5
         Drive media type:             Hard Disk Drive
         Drive interface type:         SAS
         Shelf loss protection:        No
         Secure Capable:               Yes
         Secure:                       No
         Data Assurance (DA) capable: Yes
         DA enabled volume present:    No
         Resource-provisioned:            Yes


   Total Volumes:          1
      Standard volumes:    1
      Repository volumes:  0
      Free Capacity:       110.000 GB

   Associated drives - present (in piece order)
   Total drives present: 5

      Tray      Slot
      99        1
      99        2
      99        3
      99        4
      99        5
```

Minimum firmware level

6.10

smcli …

Test alerts

The SMcli alertTest command sends out a test alert to the Windows Event Log and all configured syslog receivers.

Supported Arrays

This command applies only to the E2700 and E5600 storage arrays.

Context

> ⓘ 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

Syntax

```
SMcli -alertTest
```

Parameters

None.

Minimum Firmware Level

7.83

Display AutoSupport bundle collection settings

The `SMcli -autoSupportConfig show` command displays the AutoSupport bundle collection settings for the management domain. These settings apply to all of the storage arrays in your management domain for which you have enabled AutoSupport.

Supported Arrays

This command applies to all E2700 and E5600 storage arrays in the management domain at once. It does not apply to E2800 or E5700 storage arrays.

Context

The command output from this command shows the following configuration information:

- The activation status for this management domain of the AutoSupport feature, the AutoSupport OnDemand feature, and the AutoSupport Remote Diagnostics feature

- Delivery parameters that depend on the configured delivery method:

    ◦ Delivery method is SMTP: Destination email address, mail relay server, and sender email address are shown

    ◦ Delivery method is HTTP or HTTPs:

        ▪ Direct connection - destination IP address is shown

        ▪ Proxy server connection - Host address, port number, and authentication details are shown

        ▪ Automatic proxy configuration script (PAC) connection - script location is shown

- A table that lists, for each storage array, the name of the array, whether or not it is an ASUP-capable array, the chassis serial numbers, and the IP addresses for the controllers in the array

Context

ⓘ 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 applies to all E2700 and E5600 storage arrays in the management domain at once. It does not apply to E2800 or E5700 storage arrays.

Syntax

```
SMcli -autoSupportConfig show
```

Parameters

None.

Minimum Firmware Level

8.25

Example output for the activation statuses

```
The AutoSupport feature is activated on this storage management station.
The AutoSupport OnDemand feature is de-activated on this storage
management station.
The AutoSupport Remote Diagnostics feature is de-activated on this storage
management station.
```

Example output for the SMTP delivery method

```
Delivery method: SMTP
Destination email address:  http://asupserver.corp.netapp.com/put/AsupPut/
Mail relay server: server.eng.netapp.com
Sender email address:  user@netapp.com
```

Example output for the HTTP or HTTPS delivery method with a direct connection

```
Delivery method:  HTTP
Destination IP address:  http://asupserver.corp.netapp.com/put/AsupPut/
Connection:  Direct
```

Example output for the HTTP delivery method with a proxy connection

```
Connection:   Proxy server
Host Address:   10.227.76.123
Port number: 8080
Authentication required: Yes
User name: admin
Password: **********
```

Example output for the HTTP delivery method with an automatic proxy configuration script (PAC)

```
Connection: Automatic proxy configuration script (PAC)
Script location: http://esgweb.eng.netapp.com/~user/proxy.pac
```

Example output for array table (all delivery methods)

```
Name  AutoSupport Capable    Chassis Serial Number    IP Address
SA_1  Yes (enabled)          SX94500434               10.113.173.123,
10.113.173.456
SA_2  Yes (disabled)         SX94607107               10.113.174.789,
10.113.174.345
SA_3  No                     Not available            10.113.59.58,
10.113.59.59
```

Test the AutoSupport configuration

Use the `SMcli -autoSupportConfig test` command to test the AutoSupport configuration by sending a test message. This command operates on the management domain. The storage management software chooses an Auto-Support capable array in the management domain for sample data to include with the test message.

Supported Arrays

This command applies to all E2700 and E5600 storage arrays in the management domain at once. It does not apply to E2800 or E5700 storage arrays.

Context

ⓘ 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.

ⓘ The Persistent Monitor should be running on the management station to send scheduled or event-triggered AutoSupport messages. Start the service before using this command.

Syntax

```
SMcli -autoSupportConfig test reply-toEmail<address>
```

Parameters

The following table lists the parameters for sending an AutoSupport test message.

Parameter	Description
test	Required parameter for the command. Requires no value.
reply-toEmail	Allows the user to specify the reply-to email address for the AutoSupport messages of SMTP delivery type.

Minimum Firmware Level

8.25

Example of testing using HTTP/HTTPs delivery

Following are examples of the usage of this command when using an HTTP or HTTPs delivery type, where you will not specify an email-address for delivery.

```
SMcli -autoSupportConfig test
The sample AutoSupport message was successfully sent to the ASUP gateway.

SMcli completed successfully.
```

Example of testing using SMTP delivery

Following are examples of the usage of this command. When using an SMTP delivery method, you can use the reply-toEmail parameter to specify the destination address.

```
SMcli -autoSupportConfig test reply-toEmail:user@netapp.com
The sample AutoSupport message was successfully sent to the ASUP gateway.

An email has been sent to 'user@netapp.com', please check the mailbox
for delivery confirmation.

SMcli completed successfully.
```

Specify the AutoSupport delivery method

The `SMcli -autoSupportConfig` command sets up the delivery method for sending AutoSupport messages.

Supported Arrays

This command applies to all E2700 and E5600 storage arrays in the management domain at once. It does not apply to E2800 or E5700 storage arrays.

Context

> ⓘ 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.

You can create two major types of delivery methods for sending AutoSupport messages:

- SMTP — Use this method when you want to use email as the delivery method for sending AutoSupport messages.

- HTTP/HTTPS — Use this method when you want to send AutoSupport messages using the HTTP or HTTPS protocols. You need to use HTTPS if you want to use AutoSupport OnDemand or AutoSupport Remote Diagnostics.

Syntax for SMTP Delivery Method

```
SMcli -autoSupportConfig deliveryMethod=SMTP
mailRelayServer=<mailRelayServerName> senderMail=<senderEmailAddress>
```

Parameters for the SMTP Delivery Method

Parameter	Description
deliveryMethod	Allows you to specify the delivery method of the AutoSupport messages. Valid choice is SMTP. See the next section of this topic for information about using HTTP or HTTPS, which are also valid.
mailRelayServer	Allows you to specify the mail relay server for the AutoSupport messages.
senderMail	Allows you to specify the sender email address for the AutoSupport messages.

Syntax for HTTP/HTTPs Delivery Methods

```
SMcli -autoSupportConfig deliveryMethod={HTTP|HTTPS}
  {direct|proxyConfigScript=<proxyConfigScript>| proxyServer
hostAddress:<address>portNumber=<portNumber>
[userName=<userName>password=<password>]}
```

Parameters for the HTTP/HTTPS Delivery Methods

The following table lists the parameters for the HTTP/HTTPS delivery methods.

Parameter	Description
deliveryMethod	Allows you to specify the delivery method of the AutoSupport messages. Valid choices are HTTPS and HTTP (see prior section for use of SMTP, which is also valid).
direct	Allows you to connect directly to the destination technical support systems using the HTTPS or HTTP protocols.
proxyConfigScript	Allows you to specify the location of a Proxy Auto-Configuration (PAC) script file.
proxyServer	Allows you to specify the HTTP(s) proxy server details required for establishing connection with the destination technical support system.
hostAddress	The host IP address of the proxyServer.
portNumber	The port number of the proxy server. This parameter is required when the proxyServer parameter is used.
userName	The user name. This parameter is required.
password	The authentication password. This parameter is required.

Minimum Firmware Level

8.25

Examples

```
SMcli —autoSupportConfig deliveryMethod=SMTP
mailRelayServer:server.eng.netapp.com
senderEmail:user@netapp.com
```

```
SMcli -autoSupportConfig deliveryMethod=HTTPS
proxyServer hostAddress:10.117.12.112 portNumber=8080
userName=user password=0987654321
```

Verification

Send a test message using the `SMcli -autoSupportConfig test` command to verify that your delivery methods are set up correctly.

Capture or view an AutoSupport log

The `SMcli -autoSupportLog` command allows you to view an AutoSupport log file. This file provides information about status, history of transmission activity, and any errors encountered during delivery of the AutoSupport messages. The log is available for all AutoSupport-capable and AutoSupport-enabled storage arrays.

Supported Arrays

This command applies to all E2700 and E5600 storage arrays in the management domain at once. It does not apply to E2800 or E5700 storage arrays.

Context

This command allows you to view two types of logs:

- Current log- View the log captured at this point in time.
- Archive log- View the log from an archived file.

> (i) 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.

Syntax

```
SMcli -autoSupportLog (all|-n "storageArrayName" | -w "wwID")
inputArchive=n outputLog=filename
```

Parameters

The following table lists the command parameters.

Parameter	Description
`all`	Use this parameter if you want to create a transmission log for all of the storage arrays in the management domain with AutoSupport capability that have been AutoSupport enabled.

Parameter	Description
`n`	The name for the storage array for which you want to view an AutoSupport log.
`w`	The World Wide Identifier (WWID) of the storage array for which you want to view an AutoSupport log.
`inputArchive`	Allows you to specify the archived AutoSupport log, where the archive file is `n`, an integer from 0 to 5. (i) Omitting this parameter means you select the current AutoSupport log (captured at this point in time).
`outputLog`	Allows you to specify the output AutoSupport log filename. (i) This parameter is required.

Minimum Firmware Level

8.25

Example

```
SMcli -autosupportLog -n StorageArrayName inputArchive=0
outputLog=ASUPTransmissionLog
```

Verification

View the AutoSupport log you requested, which is in the client directory where the storage management software was installed.

Reset AutoSupport message collection schedule

The `SMcli autoSupportSchedule reset` command resets the daily and weekly times and days of the week that AutoSupport messages are sent. You can accept default random values generated by the management software, or you can specify values with this command.

Supported Arrays

This command applies to all E2700 and E5600 storage arrays in the management domain at once. It does not apply to E2800 or E5700 storage arrays.

Context

> ℹ️ 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.

- If AutoSupport is enabled, the management software sends both daily AutoSupport messages and weekly AutoSupport messages.
- The management software randomly selects a time of day for both daily and weekly messages and a day of the week for weekly messages. Management software makes all attempts to ensure that no two storage arrays within a management domain sends scheduled AutoSupport messages at the same time.
- You can specify a range (hour-level granularity) of when to send daily and when to send weekly messages for the storage arrays in your management domain.
- For the weekly schedule, you select preferred days of the week for AutoSupport collection and transmission.

Syntax

```
SMcli -autoSupportSchedule reset | (dailyTime=<startTime>-<endTime>
    dayOfWeek=[Sunday Monday Tuesday Wednesday Thursday Friday Saturday]
    weeklyTime=<startTime>-<endTime>)
```

Parameters

Parameter	Description
`reset`	Resets and generates new schedules using a 24 hour day and 7 day weeks (Sunday to Saturday) time interval.
`dailyTime`	`<startTime> - <endTime>` Specifies the time of day that you want to start and end the collection of AutoSupport data for all storage arrays. The startTime and endTime must be in the form of HH:MM[am|pm}.
`dayOfWeek`	[Sunday|Monday|Tuesday|Wednesday|Thursday|Friday|Saturday] Specifies the preferred days of the week (Sunday through Saturday) that you want to collect AutoSupport bundle collection data for all storage arrays. The `dayOfWeek` parameter must be surrounded by brackets and separated with a space.
`weeklyTime`	`<startTime> - <endTime>` Specifies the time of day that you want to start and end the collection of the AutoSupport bundle collection data for each day of the week that you have selected. The `startTime` and `endTime` must be in the form of HH:MM[am|pm].

Minimum Firmware Level

8.25

Example

```
  SMcli -autoSupportSchedule dailyTime=10:00am-11:00am
 dayOfWeek=[Monday Thursday Friday] weeklyTime=2:00am-3:00am
```

```
SMcli -autoSupportSchedule dailyTime=10:00am-11:00am dayOfWeek=[Monday Thursday
Friday] weeklyTime=2:00am-3:00am
```

Verification

Use the `SMcli -autoSupportSchedule show` command to see the resulting change to the schedule in the management domain.

Display AutoSupport message collection schedule

The `SMcli -autoSupportSchedule show` command shows the schedule for collection and processing of both daily and weekly AutoSupport messages.

Supported Arrays

This command applies to all E2700 and E5600 storage arrays in the management domain at once. It does not apply to E2800 or E5700 storage arrays.

Context

> ⓘ 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.

Note the following with regard to the scheduling of Automatic Support Bundle collection:

- If AutoSupport is enabled, the management software sends both daily AutoSupport messages and weekly AutoSupport messages.
- The management software randomly selects a time of day for both daily and weekly messages and a day of the week for weekly messages.
- The management software makes all attempts to ensure that no two storage arrays within a management domain send scheduled AutoSupport messages at the same time.
- Using the `SMcli -autoSupportSchedule reset` command, you can specify a range (hour-level granularity) of preferred times to send both daily and weekly messages for the storage arrays in your management domain. For the weekly messages schedule, you use the command to select preferred days of the week.

Syntax

```
SMcli -autoSupportSchedule show
```

Parameters

None.

Minimum Firmware Level

8.25

Example

The output shows both the preferred time ranges, followed by the daily and weekly schedule.

> (i) If you do not select preferred time ranges for both schedules, and preferred days of the week, then this command shows the daily schedule and weekly schedule that the storage management software picked at random.

```
SMcli -autoSupportSchedule show
The AutoSupport daily schedule preferred time range is from 12:00 AM to
01:00 AM.
The AutoSupport weekly schedule preferred time range is from 10:00 PM to
11:00 PM on Thursday, Saturday.

Name              Daily Schedule          Weekly Schedule
Accounting        12:55 AM                10:08 PM on Thursdays
Finance           12:02 AM                10:30 PM on Saturdays

SMcli completed successfully.
```

Enable or disable AutoSupport at the EMW management domain level (SMcli only)

The `SMcli enable autoSupportFeature` command turns on the AutoSupport (ASUP) feature for all managed storage arrays and makes it possible to transmit messages to the 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.

Supported Arrays

This command applies to all E2700 and E5600 storage arrays in the management domain at once. It does not apply to E2800 or E5700 storage arrays.

Context

> ℹ️ 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.

> ℹ️ The Persistent Monitor must be enabled for the AutoSupport feature to work.

> ℹ️ No customer data is ever transmitted to the technical support site.

This command impacts all ASUP-capable storage arrays in the management domain. After enabling this feature for the management domain, you have control over the feature enablement for each storage array.

After enabling this feature, you can next enable the AutoSupport OnDemand feature (if desired), and then enable the AutoSupport Remote Diagnostics feature (if desired).

You must enable the three features in the following order:

1. **Enable AutoSupport**
2. **Enable AutoSupport OnDemand**
3. **Enable AutoSupport Remote Diagnostics**

Syntax

```
SMcli enable|disable autoSupportFeature
```

Parameters

None.

Verification

Use the `SMcli -autoSupportConfig show` command to see whether you have enabled the feature. The initial line of the displayed output shows the enable status:

```
The AutoSupport feature is activated on this storage management station.
```

Minimum Firmware Level

7.86

Enable or disable the AutoSupport OnDemand feature at the EMW management domain level (SMcli only)

The `SMcli enable|disable autoSupportOnDemand` command turns on or turns off the AutoSupport OnDemand feature. This feature allows technical support to coordinate AutoSupport data transmission, and allows them to request the re-transmission of

missing support data.

Supported Arrays

This command applies to all E2700 and E5600 storage arrays in the management domain at once. It does not apply to E2800 or E5700 storage arrays.

Context

> ⓘ 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.

Before enabling this feature, you must first enable the AutoSupport feature on the management domain. After enabling this feature, you can next enable the AutoSupport Remote Diagnostics feature (if desired). The AutoSupport Remote Diagnostics features is enabled, by default, when the AutoSupport OnDemand feature is enabled.

Syntax

```
SMcli enable|disable autoSupportOnDemand
```

Parameters

None.

Verification

Use the `SMcli -autoSupportConfig show` command to see if you have enabled the feature. The initial two lines of the displayed output show the enable status of the AutoSupport feature, followed by the AutoSupport OnDemand feature:

```
The AutoSupport feature is activated on this storage management
station.
The AutoSupport OnDemand feature is activated on this storage
management station.
```

Minimum Firmware Level

8.25

Enable or disable the AutoSupport remote diagnostics feature at the EMW management domain level (SMcli only)

The `SMcli enable|disable autoSupportRemoteDiag` command turns on or turns off the AutoSupport Remote Diagnostics feature. This feature enables technical support to request support data to diagnose problems remotely.

Supported Arrays

This command applies to all E2700 and E5600 storage arrays in the management domain at once. It does not apply to E2800 or E5700 storage arrays.

Context

ⓘ 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 impacts all ASUP-capable storage arrays in the management domain.

Before enabling this feature, first enable the AutoSupport feature and then the AutoSupport OnDemand feature on the management domain.

You must enable the three features in this order.

1. **Enable AutoSupport**
2. **Enable AutoSupport OnDemand**
3. **Enable AutoSupport Remote Diagnostics**

Syntax

```
SMcli enable|disable autoSupportRemoteDiag
```

Parameters

None.

Verification

Use the `SMcli -autoSupportConfig show` command to see whether you have enabled the feature. The initial three lines of the displayed output show the enable status of the AutoSupport feature, followed by the AutoSupport OnDemand feature, followed by the status of the AutoSupport Remote Diagnostics feature:

```
The AutoSupport feature is activated on this storage management
station.
The AutoSupport OnDemand feature is activated on this storage management
station.
The AutoSupport Remote Diagnostics feature is activated on this storage
management station.
```

Minimum Firmware Level

8.25

Schedule automatic support bundle collection configuration

The `SMcli -supportBundle schedule` 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.

> (i) 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.

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

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

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

Parameters

The following table lists the parameters for a daily/weekly schedule.

Parameter	Description
`enable`	Enable automatic collection of support bundles when a critical MEL event is detected. This parameter resumes collecting support bundle data if it has been suspended. You must use the parameter whenever you create a new schedule or modify an existing schedule.
`all`	Use this parameter if you want to set a collection schedule for all of the storage arrays detected from the host.
`storageArrayName`	The name of a specific storage array for which you want to set a schedule.
`startTime`	The time of day that you want the collection of a support bundle to start. The format for entering the time is HH:MM, where HH is the hour and MM is the minute past the hour. Use a 24-hour clock. The default time is 00:00, midnight. If you do not enter a time to start and you have enabled support bundle collection, collection of the data automatically occurs at midnight.
`startDate`	A specific date on which you want to start collecting support bundle data. The format for entering the date is MM:DD:YY. The default date is the current date.

Parameter	Description
endDate	A specific date on which you want to stop collecting support bundle data. The format for entering the date is MM:DD:YY. The default is none. If you use this parameter, it must be at least one week after the start date and cannot occur in the past.
daysOfWeek	Specific day or days of the week on which you want to collect support bundle data. Use this parameter when you want to collect support bundle data on one or more days of week. For example: ``` daysOfWeek=[Tuesday] ``` ``` daysOfWeek=[Monday Wednesday Friday] ``` Enclose the days of the week in square brackets ([ ]). If you enter more than one day, separate each day with a space.
data	The file path and the file name to which you want to save the support bundle data. For example: ``` file="C:\Program Files\CLI\sup\data.txt" ``` (i)　You can use any file extension. Enclose the file path and name in double quotation marks (" ").

The following table lists the parameters for a monthly/yearly schedule.

Parameter	Description
enable	Enable automatic collection of support bundles when a critical MEL event is detected. This parameter resumes collecting support bundle data if it has been suspended. You must use the parameter whenever you create a new schedule or modify an existing schedule.

Parameter	Description
`all`	Use this parameter if you want to set a collection schedule for all of the storage arrays detected from the host.
`storageArrayName`	The name of a specific storage array for which you want to set a schedule.
`startTime`	The time of a day that you want the collection of a support bundle to start. The format for entering the time is HH:MM, where HH is the hour and MM is the minute past the hour. Use a 24-hour clock. The default time is 00:00, midnight. If you do not enter a time to start and you have enabled support bundle collection, collection of the data automatically occurs at midnight.
`startDate`	A specific date on which you want to start collecting support bundle data. The format for entering the date is MM:DD:YY. The default date is the current date.
`endDate`	A specific date on which you want to stop collecting support bundle data. The format for entering the date is MM:DD:YY. The default is none.
| `months` | Specific month or months of the year on which you want to collect support bundle data. Use this parameter when you want to collect support bundle data on one or more months of a year. For example:<br><br>```
months=[June]
```<br><br>```
months=[January April July October]
```<br><br>Enclose the month in square brackets ([ ]). If you enter more than one month, separate each month with a space. |

Parameter	Description
weekNumber	A week in the month during which you want to collect support bundle data. For example: ```weekNumber=first```
dayOfWeek	A specific day of the week on which you want to collect support bundle data. Use this parameter when you want to collect support bundle data on only one day of the week. For example: ```dayOfWeek=Wednesday```

onDays	Specific day or days in a month on which you want to collect support bundle data. For example:
	
	```onDays=[15]```
	
	```onDays=[7 21]```
	
	Enclose the day in square brackets ([ ]). If you enter more than one day, separate each day with a space.
	
	(i) You cannot use the **onDays** parameter with either the **weekNumber** parameter or the **dayOfWeek** parameter.

data	The file path and the file name to which you want to save the support bundle data. For example: ```file="C:\Program Files\CLI\sup\data.txt"``` (i) You can use any file extension. Enclose the file path and name in double quotation marks (" ").

The following table lists the parameters for removing a schedule.

Parameter	Description
`disable`	Disables the automatic collection of support bundles and deletes any previously defined schedules immediately. (i) Disabling a schedule also deletes the schedule.
`all`	Use this parameter if you want to set a collection schedule for all of the storage arrays detected from the host.
`storageArrayName`	The name of a specific storage array for which you want to set a schedule.

Notes

When you use the `all` parameter to set a common schedule for all of the storage arrays, the schedules for individual storage arrays are deleted. If a schedule is set for all storage arrays, newly discovered storage arrays will follow the same schedule. If a schedule is set for all storage arrays and then a schedule is set for a single storage array, newly discovered storage arrays will not have a schedule defined.

Following are examples of the usage of this command. The first example is of a daily/weekly schedule that meets these criteria for collecting support bundle data:

- The storage array name is DevKit4
- The collection start time is 02:00 (2:00 in the morning)
- The start date is 05:01:2013 (May 1, 2013)
- Data will be collected on Monday and Friday of each week
- This schedule does not have an end date, and can be stopped only by running the `SMcli -supportBundle schedule disable` command

```
SMcli -supportBundle schedule enable DevKit4 startTime=02:00
startDate=05:01:2013 endDate=05:10:2014 daysOfWeek=[Monday Friday]
```

The second example is of a monthly/yearly schedule that meets these criteria for collecting support bundle data:

- The storage array name is eng_stor1
- The collection start time is 04:00 (4:00 in the morning)
- The start date is 05:01:2013 (May 1, 2013)
- Data will be collected in March, April, May, June, and August
- Data will be collected on the first and twenty-first days of each month
- This schedule does not have an end date, and can be stopped only by running the `SMcli -supportBundle schedule disable` command

```
SMcli -supportBundle schedule enable eng_stor1 startTime=04:00
startDate=05:01:2013 months=[March April May June August] onDays=[1 21]
```

The third example is of a monthly/yearly schedule that meets these criteria for collecting support bundle data:

- The storage array name is firmware_2
- The collection start time is 22:00 (10:00 at night)
- The start date is 05:01:2013 (May 1, 2013)
- Data will be collected in March, April, May, June, and August
- Data will be collected on Friday of the first week of each month
- This schedule will end on 05:10:2014 (May 10, 2014)

```
SMcli -supportBundle schedule enable firmware_2 startTime=22:00
startDate=05:01:2013 endDate=05:10:2014 months=[March April May June
August]
weekNumber=First dayOfWeek=Friday
```

Minimum firmware level

7.83

start …

Start asynchronous mirroring synchronization

The `start asyncMirrorGroup synchronize` command starts Asynchronous Mirroring synchronization.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameter

Parameter	Description
`asyncMirrorGroup`	The name of the asynchronous mirror group for which you want to start synchronization. Enclose the asynchronous mirror group name in double quotation marks (" ") inside square brackets ([" "]).
`deleteRecoveryPointIfNecessary`	The parameter to delete the recovery point if the recoverable synchronization data has exceeded time threshold for recovery. Recovery point age is measured from the time the data was frozen on the primary storage array.

Minimum firmware level

7.84

8.10 adds the `deleteRecoveryPointIfNecessary` parameter.

11.80 adds EF600 and EF300 array support

Start consistency group snapshot rollback

The `start cgSnapImage rollback` command starts a rollback operation to the member base volumes in a snapshot consistency group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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")
```

Parameter

Parameter	Description
`cgSnapImage`	The name of the consistency group snapshot image for which you want to start a rollback operation. The name of a snapshot image is comprised of two parts: • The name of the snapshot group • An identifier for the snapshot image in the snapshot group. The identifier for the snapshot image can be one of these: • An integer value that is the sequence number of the snapshot in the snapshot group. • `NEWEST` — Use this option when you want to show the latest snapshot image created in the snapshot group. • `OLDEST` — Use this option when you want to show the earliest snapshot image created in the snapshot group. Enclose the snapshot image name in double quotation marks (" ") inside square brackets ([ ]).
`memberVolumeSet`	The name of one or more member base volumes in a consistency group that you want to rollback. Enclose each member base volume name in double quotation marks (" ") inside parentheses. You can enter more than one volume name. Enclose all of the volume names in one set of square brackets ([ ]). Enclose each volume name in double quotation marks (" "). Separate each volume name with a space. When the `memberVolumeSet` parameter is not used the rollback process applies to all member volumes of the consistency group.

Notes

The name of a snapshot image has two parts separated by a colon (:):

- The identifier of the snapshot group
- The identifier of the snapshot image

For example, if you want to start a roll back operation for the newest snapshot image in an entire consistency group that has the name CG1, you would use this command:

```
start cgSnapImage ["CG1:newest"] rollback;
```

To start a roll back operation for the snapshot image 12345 for base volume members memVol1, memVol2, and memVol3 in a consistency group that has the name CG2, you would use this command:

```
start cgSnapImage ["CG2:12345"] rollback memberVolumeset=("memVol1 memVol2 memVol3");
```

Minimum firmware level

7.83

Start check volume parity job

The `start check volume parity job` command starts a new check volume parity operation on a given volume.

Supported Arrays

This command applies to any individual storage array, including the EF600 and EF300 arrays; as long as all SMcli packages are installed.

Roles

To execute this command on an EF600 and EF300 storage array, you must have the Storage Admin role.

Syntax

```
start check volume[<volume_label>] parity job
(startingLba=<start_lba> endingLba=<end_lba> scanPriority=<scan_priority>
repairParityErrors=<true | false>
repairMediaErrors=<true | false>);
```

Parameters

Parameter	Description
startingLba	The volume logical block address where the parity scan will start. The default value is `0`.
endingLba	The volume logical block address where the parity scan will stop. The default value is `maximum volume lba`.
scanPriority	The parity scan priority. The default value is `medium`
repairParityErrors	Determines whether to automatically attempt to repair parity errors detected during the parity scan. Default value is `true`.
repairMediaErrors	Determines whether to automatically attempt to repair media errors detected during the parity scan. Default value is `true`.

Minimum firmware level

11.80

Start iSCSI DHCP refresh

The `start controller iscsiHostPort dhcpRefresh` command initiates a refresh of the DHCP parameters for the iSCSI interface.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

If the configuration method for the interface is not set to DHCP, the procedure returns an error.

Syntax

```
start controller [(a|b)] iscsiHostPort [portLabel] dhcpRefresh
```

Parameter

Parameter	Description
`controller`	The identifier letter of the controller that has the iSCSI host ports. Valid controller identifier values are `a` or `b` where `a` is the controller in slot A, and `b` is the controller in slot B.
`iscsiHostPort`	The host port label or the number of the iSCSI host port for which you want to refresh the DHCP parameters.

See the following for more information:

"Identifying an iSCSI host port label" |

Identifying an iSCSI host port label

You must specify a label for the host port. Follow these steps to specify the host port label:

Steps

1. If you do not know the port label for the iSCSI host port, run the `show controller` command.

2. In the Host interface section of the results, locate the host port you want to select.

   (i)   The port label is the complete value returned for the `Port` field.

3. Enclose the entire value of the port label in both quotes and square brackets: ["portLabel"]. For example, if the port label is `Ch 2`, specify the iSCSI host port as follows:

   ```
   iscsiHostPort[\"ch 2\"]
   ```

   (i)   If you are using a Windows command line and the label contains a pipe (|), the character should be escaped (using ^); otherwise, it will be interpreted as a command. For example, if the port label is `e0b|0b`, specify the iSCSI host port as follows:

   ```
   iscsiHostPort[\"e0b^|0b\"]
   ```

> **ⓘ** For backward compatibility, the iscsiPortNumber, enclosed by braces [ ] rather than quotes and braces [" "] can still be used for E2700, E5600, or EF560 controllers (and other previous generations of E-Series or EF-Series controllers). For those controllers, valid values for iscsiPortNumber are as follows:
>
> - For controllers with integrated host ports, the numbering is 3, 4, 5, or 6.
> - For controllers with host ports on a host interface card only, the numbering is 1, 2, 3, or 4.
>
> An example of the prior syntax is as follows:
>
> ```
> iscsiHostPort[3]
> ```

Notes

This operation ends the iSCSI connections for the portal and temporarily brings down the portal.

Minimum firmware level

7.10

8.10 revises the numbering system for iSCSI host ports.

8.30 revises the identification method for iSCSI host ports in the E2800.

Start controller trace

The `start controller` command starts an operation that saves debug trace information to a compressed file.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

The debug trace information can be used by technical support 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"
```

Parameters

Parameter	Description
`controller`	The controller for which you want to collect the trace debug information. Valid controller identifiers are `a` or `b`, where `a` is the controller in slot A , and `b` is the controller in slot B. You can also simultaneously collect debug for both controllers by entering `both` . Enclose the controller identifier in square brackets ([ ]). If you do not specify a controller, the storage management software returns a syntax error.
`dataType`	The type of data that you want to collect: `current` — Retrieves the current DQ traces `flushed` — Retrieves all flushed DQ traces `currentFlushed` — Retrieves both the current DQ trace and the flushed DQ trace `all` — Retrieves the current DQ trace, flushed DQ trace, and all platform DQ traces (i) If `dataType=flushed` and `forceFlush=True`, an error message is returned indicating that only active traces can be flushed to the buffer on retrieval.

Parameter	Description
forceFlush	The setting to move the DQ information in the current buffer to the flushed buffer when the DQ trace information defined by the `dataType` parameter is retrieved. To enable force flush, set this parameter to `TRUE`. To disable force flush, set this parameter to `FALSE`. ⓘ If `dataType=flushed` and `forceFlush=True`, an error message is returned indicating that only active traces can be flushed to the buffer on retrieval.
`file`	The file path and the file name to which you want to save the DQ trace information. Enclose the file name in double quotation marks (" "). Refer to the Notes section for information about naming the files.

Notes

The DQ trace information is written to a compressed file with an extension of .zip. The file name is a combination of a user-defined file name and the storage array identifier (SAID). A constant of "dq" is also added to the file name. The complete file name has this form:

```
user_defined_file_name-SAID-dq.zip
```

The compressed file contains the information listed in this table.

File Name	Directory	Comments
`user_provided_file_name-SAID-A.dq`	`SAID/timestamp/`	The DQ trace data retrieved from controller A.
`user_provided_file_name-SAID-B.dq`	`SAID/timestamp/`	The DQ trace data retrieved from controller B.
`user_provided_file_name-SAID-trace_description.xm`	`SAID/timestamp/`	The description file in an xml format that describes the DQ file attributes for future data mining.

Minimum firmware level

7.75

Start Disk Pool Full Provisioning

The `start diskPool fullProvisioning` command starts a full provisioning operation on all volumes in the disk pool and optionally disables resource provisioning on the disk pool.

Supported Arrays

This command applies to any individual storage array, including the EF600 and EF300 arrays; as long as all SMcli packages are installed.

Roles

To execute this command on an EF600 and EF300 storage array, you must have the Storage Admin role.

Context

The Resource Provisioning feature improves SSD wear-life and increases write performance by leaving a larger portion of the drive blocks in an unallocated state than a standard volume. A resource-provisioned volume is a thick volume in an SSD volume group or pool, where drive capacity is allocated (assigned to the volume), but the drive blocks are deallocated (unmapped) during volume creation. Drive blocks are allocated as needed to complete host write IOs. Host unmap operations can return drive blocks back to the unallocated state . Resource Provisioning also eliminates time-bound background initialization, allowing for large volumes to be initialized quickly.

Resource Provisioned volumes are supported only on SSD volume groups and pools, where all drives in the group or pool support the NVMe Deallocated or Unwritten Logical Block Error Enable (DULBE) error recovery capability. Performance improvement varies with each drive model and capacity.

The full provisioning format ensures all blocks needed by the volumes in the storage pool are fully mapped on the drives. This command is only applicable to resource provisioned storage pools. If the option to `disableResourceProvisioning` is not set to `FALSE`, then the volumes will still be resource provisioned and new volumes created on the storage pool will be resource provisioned. If the option to disable resource provisioning is set to `TRUE`, then the volumes will no longer be resource provisioned and new volumes created on the storage pool will not be resource provisioned.

Syntax

```
start diskPool[diskPoolName] fullProvisioning
[disableResourceProvisioning=(TRUE | FALSE)]
```

Parameters

Parameter	Description
diskPool	The disk pool you want to start the full provisioning operation. Enclose the disk pool name in square brackets ([ ])

Parameter	Description
`disableResourceProvisioning`	The setting to specify if resource provisioning should be disabled after the full provisioning operation completes. To skip disabling resource provisioning, set this to `FALSE`. The default value is `TRUE`. ⓘ To re-enable resource provisioning on a storage pool and all associated volumes, use the `Start Disk Pool Resource Provisioning` command.

Minimum firmware level

11.72

Start disk pool locate

The `start diskPool locate` command identifies the drives that are logically grouped together to form the specified disk pool by blinking the indicator lights on the drives.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

(Use the `stop diskPool locate` command to turn off the indicator lights on the drives.)

Syntax

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

Parameter

Parameter	Description
`diskPool`	The name of the disk pool for which you want to locate. Enclose the disk pool name in square brackets ([ ]). If the disk pool name has special characters or numbers, you must enclose the disk pool name in double quotation marks (" ") inside square brackets.

Minimum firmware level

7.83

Start Disk Pool Resource Provisioning

The `start diskPool resourceProvisioning` command enables resource provisioning on a given disk pool and starts a resource provisioning enablement asynchronous operation on each volume in the disk pool. Resource provisioning requires that all the drives in the disk pool support NVMe's DULBE feature.

Supported Arrays

This command applies to any individual storage array, including the EF600 and EF300 arrays; as long as all SMcli packages are installed.

Roles

To execute this command on an EF600 and EF300 storage array, you must have the Storage Admin role.

Context

To disable resource provisioning on a disk pool, use the full provisioning command with the option to disable resource provisioning. A disk pool will be resource provisioned when created if all the drives are DULBE capable and the storage array's `resourceProvisionedVolumes` setting is `true`.

Syntax

```
start diskPool[diskPoolName] resourceProvisioning
```

Parameters

Parameter	Description
`diskPoolName`	The disk pool you want to enable the resource provisioning feature. Enclose the disk pool name in square brackets ([ ]).

Minimum firmware level

11.73

Start drive erase

The `start drive erase` command erases all of the data from one or more drives.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 array. It does not operate on E2700 and E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

Run this command only if you want to permanently remove all data on a drive. If the drive is secure-enabled, the `start drive erase` command option performs a cryptographic erase and resets the drive's security attributes back to secure-capable.

> ⓘ The erase operation cannot be undone. Make sure you select the correct drive when using this command.

Syntax

```
start drive [trayID,[drawerID,]slotID] | drives[trayID1,[drawerID1
,]slotID1 ... trayIDn,[drawerIDn,]slotIDn] erase
```

Parameters

Parameter	Description
`drive`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]). > ⓘ The drives list cannot contain all of the drives in the storage array, or the command will be rejected.

Minimum firmware level

11.70.1

Start drive initialize

The `start drive initialize` command starts a drive initialization.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

ⓘ **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
```

Parameter

Parameter	Description
drive	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are 0 to 99. Drawer ID values are 1 to 5. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).

Notes

The `drive` parameter supports 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.

Minimum firmware level

6.10

7.60 adds the `drawerID` user input.

Start drive locate

The `start drive locate` command locates a drive by turning on an indicator light on the drive.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Run the `stop drive locate` command to turn off the indicator light on the drive.

Syntax

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

Parameter

Parameter	Description
`drive`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).

Notes

The `drive` parameter supports 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.

Minimum firmware level

6.10

7.60 adds the `drawerID` user input.

Start drive reconstruction

The `start drive reconstruct` command starts reconstructing a drive.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameter

Parameter	Description
`drive`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).

Notes

The `drive` parameter supports 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.

Minimum firmware level

5.43

7.60 adds the `drawerID` user input.

Start drive channel fault isolation diagnostics

The `start driveChannel faultDiagnostics` command runs the drive channel fault isolation diagnostics and stores the results.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

With firmware version 8.10, the `start driveChannel faultDiagnostics` command is deprecated.

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,[drawerID1,]slotID1 ... trayIDn,[drawerIDn,]slotIDn]
|[dataPattern=(fixed | pseudoRandom) |
patternNumber=[(0xhexadecimal | number)] |
maxErrorCount=integer |
testIterations=integer |
timeout=timeInterval]
```

Parameters

Parameter	Description
`driveChannel`	The identifier number of the drive channel that you want to locate. Valid values for the identifier number for the drive channel are `1`, `2`, `3`, `4`, `5`, `6`, `7`, or `8`. Enclose the drive channel identifier number in square brackets ([ ]).
`controller`	The identifier letter of the controller that you want to test. Valid controller identifier values are `a` or `b`, where `a` is the controller in slot A, and `b` is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).

Parameter	Description
testDevices	The identifiers of the devices (controllers, environmental services module [ESMs], or drives) that you want to test. You can specify `all` or enter the specific identifiers for the devices that you want to diagnose.The `controller` identifiers are `a` or `b`, where `a` is the RAID controller module in slot A, and `b` is the RAID controller module in slot B. The `esms` identifiers are tray ID and left or right, where tray ID is a value from 0 through 99, and left or right are determined when viewing the drive tray from the rear. The `drive` identifiers include a tray identifier, a drawer identifier when the tray has drawers, and a slot identifier. For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).
dataPattern	The method of repeatability that you want to test.
patternNumber	The hexadecimal data pattern that you want to use to run the test. This number can be any hexadecimal number between `0000` to `FFFF`. You must place `0x` in front to indicate a hexadecimal number.
maxErrorCount	The number of errors that you want to accept before terminating the test.
testIterations	The number of times that you want to repeat the test.
timeout	The length of time in minutes that you want to run the test.

Notes

You can enter more than one type of device to test, and you can enter more than one type of test to run.

Use the `save driveChannel faultDiagnostics` command and the `stop driveChannel faultDiagnostics` command with the `start driveChannel faultDiagnostics` command. These commands are needed to save diagnostic test results to a file and to stop the diagnostic test.

Examples of valid `patternNumber` entries are `0xA5A5`, `0x3C3C`, `8787`, and `1234`.

You also can stop this command at any time by pressing `Ctrl+C`.

Minimum firmware level

7.15

Start drive channel locate

The `start driveChannel locate` 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.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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
```

Parameter

Parameter	Description
`driveChannel`	The identifier number of the drive channel that you want to locate. Valid values for the identifier number for the drive channel are `1`, `2`, `3`, `4`, `5`, `6`, `7`, or `8`. Enclose the drive channel identifier number in square brackets ([ ]).

Minimum firmware level

6.10

7.15 adds an update to the drive channel identifier.

Test email alert configuration

The `start emailAlert test` command allows you to test the alert configuration by sending a sample email message.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
start emailAlert test
```

Parameters

None.

Examples

```
SMcli -n Array1 -c "start emailAlert test;"

The sample alert message was successfully sent to the email addresses.

SMcli completed successfully.
```

Minimum firmware level

8.40

Increase capacity of volume in disk pool or volume group

The `start increaseVolumeCapacity volume` command increases the capacity of either a standard volume or a repository volume in a disk pool or volume group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

In this command, a standard volume is also called a thick volume.

> ⓘ 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)]
```

Parameters

Parameter	Description
volume	The name of the volume in a disk pool or volume group for which you want to increase capacity. Enclose the volume name in double quotation marks (" ").
incrementalCapacity	The setting to increase the storage size (capacity) for the volume. Size is defined in units of bytes, KB, MB, GB, or TB. The default value is bytes.

Parameter	Description
`addDrives`	The setting to add new drives to the volume. For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]). ⓘ The `addDrives` parameter can only be used to increase the capacity of a volume group. The parameter cannot be used to increase the capacity of a disk pool.

Notes

In some cases a `drive` parameter might appear as valid input for the command syntax. However, you cannot use the `drive` parameter with this command.

Setting the `incrementalCapacity` parameter, starts a long-running operation that you cannot stop. Long-running operations are performed in the background and do not prevent you from running other commands. To show the progress of long-running operations, use the `show volume actionProgress` command.

The `addDrives` parameter supports 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.

Minimum firmware level

7.83

Start input output controller (IOC) dump

The `start IOCLog` command produces a dump of the IOC log of data transmissions between a host and a controller.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Controllers are identified as "a " or "b". Each controller can have up to four host channels; each channel is uniquely identified by a number from 1 through 4.

Syntax

```
start IOCLog [(a1 | a2 | a3 | a4 | b1 | b2 | b3 | b4)]
[overwrite=(TRUE | FALSE)]
```

Parameters

Parameter	Description
`controller-channel identifiers`	This parameter specifies the controller and host channel from which to produce the IOC dump. Valid controller identifiers are `a` or `b`, where `a` is the controller in slot A, and `b` is the controller in slot B. Host channels have numerical identifiers. Enclose the controller identifier and host channel identifier in square brackets ([ ]). Valid controller identifier and host channel values are `a1`, `a2`, `a3`, `a4`, `b1`, `b2`, `b3`, `b4`. If you do not specify a controller, the storage management software returns a syntax error.
`overwrite`	This parameter causes the new IOC log dump to overwrite an existing dump. To overwrite the existing dump, set this parameter to `TRUE`. The default value is `FALSE`.

Notes

This command generates a debug log from the IOC of the selected controller and stores the data in a compressed format in a persistent memory buffer on the controller. You can retrieve the data from the debug log using the `save IOCLog` command. The controller returns an error for these conditions:

* The controller platform and HIC do not support an IOC dump.

- The specified controller has an outstanding IOC dump and the overwrite parameter is false.
- The specified controller identifier or channel identifier are out of the valid range.

Minimum firmware level

8.20

Start FDE secure drive erase

The `start secureErase drive` command erases all of the data from one or more full disk encryption (FDE) drives so that they can be reused as FDE drives.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

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.

> ⓘ To erase a FIPS drive when the drive is locked and the security key to unlock it is unavailable, use the `set drive securityID` command.

Syntax

```
[start secureErase (drive [trayID,[drawerID,]slotID] | drives [trayID1
,[drawerID1,]slotID1 ... trayIDn,[drawerIDn,]slotIDn])
```

Parameters

Parameter	Description
`drive` or `drives`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]). ⓘ The drives list cannot contain all of the drives in the storage array, or the command will be rejected. To secure erase all drives, run this command twice, specifying the drive list in two separate groups.

Notes

The controller firmware creates a lock that restricts access to the FDE drives. FDE drives have a state called Security Capable. When you create a security key, the state is set to Security Enabled, which restricts access to all FDE drives that exist within the storage array.

Minimum firmware level

7.40

Start snapshot image rollback

The `start snapImage rollback` command starts a rollback operation for a set of snapshot images.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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.

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

Syntax

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

Parameter

Parameter	Description
`snapImage`	The name of the snapshot image. The name of a snapshot image is comprised of two parts: • The name of the snapshot group • An identifier for the snapshot image in the snapshot group The identifier for the snapshot image can be one of these: • An integer value that is the sequence number of the snapshot in the snapshot group. • `NEWEST` — Use this option when you want to show the latest snapshot image created in the snapshot group. • `OLDEST` — Use this option when you want to show the earliest snapshot image created in the snapshot group. Enclose the snapshot image name in double quotation marks (" ") inside square brackets ([ ]).

Notes

The name of a snapshot image has two parts separated by a colon (:):

- The identifier of the snapshot group
- The identifier of the snapshot image

For example, if you want to start a rollback operation for snapshot image 12345 in a snapshot group that has the name snapGroup1, you would use this command:

```
start snapImage ["snapGroup1:12345"] rollback;
```

To start a rollback operation for the most recent snapshot image in a snapshot group that has the name snapGroup1, you would use this command:

```
start snapImage ["snapGroup1:newest"]rollback;
```

Minimum firmware level

7.83

Test SNMP trap destination

The `start snmpTrapDestination` command tests the connection and identification of the trap receiver for a specific Simple Network Management Protocol (SNMP) community or user. This command tests the trap destination by sending a trap message to the trap receiver.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
start snmpTrapDestination trapReceiverIP=ipAddress
    (communityName="communityName" | (userName="userName" [engineId=(local
| engineId)]))
```

Parameters

Parameter	Description
trapReceiverIP	The IP address of the SNMP manager to which you want to send trap messages.
communityName	The name of the SNMP community for which you want to send trap messages.

Parameter	Description
userName	The name of the SNMP user for which you want to send trap messages.
engineId	The engine ID of the SNMP user for which you want to send trap messages. The engine ID is required if there is more than one USM user with the same user name. The value may be "local" to specify the local SNMP agent is the authoritative agent or a hexidecimal digit string to specify a remote SNMP agent engine ID.

Minimum firmware level

8.30

Start SSD cache locate

The `start ssdCache locate` 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.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Support Admin role.

Context

Use the `stop ssdCache locate` command to turn off the indicator lights on the drives.

Syntax

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

Parameters

Parameter	Description
ssdCache	The name of the SSD cache that you want to locate. Enclose the SSD cache name in square brackets ([ ]). If the SSD cache name contains special characters or consists only of numbers, you must enclose the SSD cache name in double quotation marks (" ") inside square brackets.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Start SSD cache performance modeling

The `start ssdCache performanceModeling` command starts performance modeling for the SSD cache.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Support Admin role.

Context

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
```

Parameters

Parameter	Description
`ssdCache`	The name of the SSD cache for which you want to model performance. Enclose the SSD cache name in square brackets ([ ]). If the SSD cache name contains special characters or consists only of numbers, you must enclose the SSD cache name in double quotation marks (" ") inside square brackets.

Notes

Performance modeling ends and the performance modeling data is available when one of the following conditions occurs:

- Run the `stop ssdCache performanceModeling` command.
- Retrieve the performance modeling data using the storage management software.

Performance modeling ends, but no data is available when one of the following conditions occurs:

- You reboot the controller.
- You make any changes to the SSD cache configuration.
- The state of the SSD cache changes.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Test AutoSupport delivery settings

The `start storageArray autoSupport deliveryTest` command sends a sample AutoSupport bundle collection message so you can test the connection to the destination technical support system using the specified delivery parameters.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
start storageArray autoSupport deliveryTest [replyToEmail="address"]
```

Parameters

Parameter	Description
`replyToEmail`	Allows the user to specify the reply-to email address for the AutoSupport test message. It is only used/required when delivery method is set to email.

Examples

```
SMcli -n Array1 -c "start storageArray autoSupport deliveryTest;"

SMcli -n Array1 -c "start storageArray autoSupport deliveryTest
replyToEmail=\"user@company.com\";"

The sample AutoSupport message was successfully sent to the ASUP gateway
server.

SMcli completed successfully.
```

Minimum firmware level

8.40

Start Storage Array AutoSupport Manual Dispatch

The `start storageArray autoSupport manualDispatch` command initiates a complete support bundle and ASUP dispatch for the bundle.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Due to the amount of time for it to complete, the command returns successful if it can start the process.

Syntax

```
start storageArray autoSupport manualDispatch
```

Parameters

None

Minimum firmware level

8.63

Start storage array configuration database diagnostic

The `start storageArray configDbDiagnostic` command runs a consistency check against a configuration database.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
`sourceLocation`	This parameter specifies the location of the database. • `disk` indicates that data comes directly from the database on the drive • `onboard` indicates that data comes from the RPA memory location The default location is `disk`.

Parameter	Description
diagnosticType	The level of diagnostic testing that you want to run on the database. You can run one of these levels of testing: fileSystem — This option checks the structural integrity of the database. mirror — The tests run using this option vary according to the value of the sourceLocation parameter: • When the **sourceLocation** parameter is set to disk, the peer controller initiates a block check. • When the **sourceLocation** parameter is set to onboard, the peer controller initiates a record check. (i) You can run the mirror option only from a command line or from the Script editor. This option is not available through the storage management software GUI. The mirror option starts a long running operation that you cannot stop. The default value is fileSystem.
controller	The controller that has the database on which you want to run the diagnostic tests. Valid controller identifiers are a or b, where a is the controller in slot A, and b is the controller in slot B. Enclose the controller identifier in square brackets ([ ]).

Notes

This command runs a consistency check against a configuration database. All database records are checked. Error data is written to a file in the data folder on disk automatically. You do not need to specify an output file.

(i) Running a consistency check with the diagnosticType parameter set to mirror and with the sourceLocation parameter set to onboard can cause the operation to run for a long time. This can have adverse effects on host I/O processing. This operation should be done only under direction from the support organization.

Upon completion of the diagnostic test, the controller firmware returns one of these results:

• Diagnosis completed without errors. No ZIP file created.

• Diagnosis completed with errors. Refer to the ZIP file created at:

```
...\Install_dir\data\FirmwareUpgradeReports\timestamp_buildNo.zip
```

If the diagnostic test detects an inconsistency in the configuration database, the controller firmware performs these actions:

- Returns a description of the inconsistency
- Saves a ZIP file containing raw binary data

The controller firmware saves the ZIP file to this location:

```
...\Install_dir\data\FirmwareUpgradeReports\timestamp_buildNo.zip
```

You can use the binary data to help determine the cause of the problem, or you can send the file containing the binary data to technical support.

To stop the database configuration diagnostic test, use the `stop storageArray configDbDiagnostic` command.

In addition, you can start the database configuration diagnostic test through the storage management software GUI; however, you cannot stop the database configuration diagnostic test through the storage management software GUI. If you want to stop a running diagnostic test, you must use the `stop storageArray configDbDiagnostic` command.

Minimum firmware level

7.75

7.83 adds these parameters:

- `sourceLocation`
- `diagnosticType`
- `controller`

Start storage array controller health image

The `start storageArray controllerHealthImage controller` command produces a storage array controller health image on storage arrays that support the controller health image feature.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

ⓘ   With firmware version 8.20 the `coreDump` parameter is replaced with the `controllerHealthImage` parameter.

ⓘ   Use this command only under the direction of technical support.

If the storage array does not support the controller health image feature, the command returns an error.

Syntax

```
start storageArray controllerHealthImage controller [(a|b)]
```

Parameters

Parameter	Description
`controller`	This parameter specifies the controller from which to produce the controller health image. Valid controller identifiers are `a` or `b`, where `a` is the controller in slot A, and `b` is the controller in slot B. Enclose the controller identifier in square brackets ([ ]). If you do not specify a controller, the storage management software returns a syntax error.

Notes

This command forces the selected controller to dump its core data to cache. Use the `save storageArray controllerHealthImage` command to save a copy of the cache data to a host file.

Minimum firmware level

7.83

8.20 replaces the `coreDump` parameter with the `controllerHealthImage` parameter.

Test storage array directory server

The `start storageArray directoryServices test` command checks communication with all configured directory servers and validates the server domain configurations.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

This command returns an error if at least one directory server has not already been added to the domain.

Syntax

```
start storageArray directoryServices test
```

Parameters

None.

Examples

```
SMcli -n Array1 -c "start storageArray directoryServices test;"

<test results for each domain configured are returned>

SMcli completed successfully.
```

Test external key management communication

The `start storageArray externalKeyManagement test` command uses the configured credentials (certificates, address of the KMIP server, and the KMIP port number) to verify that the storage array is able to communicate with the external KMIP server.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Context

(i)   This command applies only to external key management.

Syntax

```
start storageArray externalKeyManagement test
```

Parameters

None.

Minimum firmware level

8.40

Start storage array iSNS server refresh

The `start storageArray isnsServerRefresh` command initiates a refresh of the network address information for the iSNS server.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

If the DHCP server is marginal or unresponsive, the refresh operation can take from two to three minutes to complete.

ⓘ This command is for IPv4 only.

Syntax

```
start storageArray isnsServerRefresh
```

Parameter

None.

Notes

If you used the `set storageArray isnsIPv4ConfigurationMethod` command to set the configuration but did not set the configuration to DHCP, running the `start storageArray isnsServerRefresh` returns an error.

Minimum firmware level

7.10

Start storage array locate

The `start storageArray locate` command locates a storage array by turning on the indicator lights for the storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Use the `stop storageArray locate` command to turn off the indicator lights for the storage array.

Syntax

```
start storageArray locate
```

Parameters

None.

Minimum firmware level

6.10

Start OCSP server URL test

The `start storageArray ocspResponderUrl test` command checks for an open connection to the specified URL of the Online Certificate Status Protocol (OCSP) server.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Parameters

Parameter	Description
url	The literal string of the OCSP server's URL. (i) If you do not specify a URL, the command uses the OCSP responder URL found in the certificate revocation settings.

Syntax

```
start storageArray ocspResponderUrl test (url=stringLiteral)
```

Minimum firmware level

8.42

Start storage array syslog test

The `start storageArray syslog test` command allows you to test communications between the storage array and a syslog server.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Security Admin role.

Syntax

```
start storageArray syslog test id="<id>"
```

Parameters

Parameter	Description
id	Syslog configuration ID to test. The ID is available using the `show storageArray syslog` command.

```
SMcli -n Array1 -c "start storageArray syslog test
id=\"331998fe-3154-4489-b773-b0bb60c6b48e\";"
SMcli completed successfully.
```

Minimum firmware level

8.42

Start synchronous mirroring synchronization

The `start syncMirror primary synchronize` command starts synchronous mirroring synchronization.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, and E5700 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800 or E5700 storage array, you must have the Storage Admin role.

Context

> 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
```

Parameter

Parameter	Description
`primary`	The name of the primary volume for which you want to start synchronization. Enclose the primary volume name in double quotation marks (" ") inside of square brackets ([ ]).

Minimum firmware level

6.10

Test syslog configuration

The `start syslog test` command sends a sample message to test the syslog configuration.

Supported Arrays

This command applies to an individual E2800, E5700, EF600 or EF300 storage array. It does not operate on E2700 or E5600 storage arrays.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin or Support Admin role.

Syntax

```
start syslog test
```

Parameters

None.

Examples

```
SMcli -n Array1 -c "start syslog test;"

The sample alert message was successfully sent to the syslog servers.

SMcli completed successfully.
```

Minimum firmware level

8.40

Start tray locate

The `start tray locate` command locates a tray by turning on the indicator light.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Use the `stop tray locate` command to turn off the indicator light for the tray.

Syntax

```
start tray [trayID] locate
```

Parameter

Parameter	Description
`tray`	The tray that you want to locate. Tray ID values are `0` to `99`. Enclose the tray ID value in square brackets ([ ]).

Minimum firmware level

6.10

Start volume initialization

The `start volume initialize` command starts the formatting of a volume in a storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

> ⓘ   Formatting a volume starts a long-running operation that you cannot stop.

Syntax

```
start volume [volumeName] initialize
```

Parameter

Parameter	Description
`volume`	The name of a volume that you want to format. Enclose the volume name in square brackets ([ ]). If the volume name has special characters or numbers, you must enclose the name in double quotation marks (" ") inside square brackets.

Minimum firmware level

6.10

Initialize thin volume

The `start volume initialize` command initializes or re-initializes a thin volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

The action depends on the parameters used:

- 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.

ⓘ 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)]
```

Parameter

Parameter	Description
volume	The name of the volume on which you are starting the initialization. Enclose the volume name in square brackets ([ ]). If the volume name contains special characters or numbers, you must enclose the volume name in double quotation marks (" ") inside square brackets.
existingRepositoryLabel	This parameter replaces the repository volume by the candidate volume specified. • The value specified is an existing repository volume user label. The volume specified must be an unused repository volume with the name in the proper form. • If the newly specified repository volume is on a different disk pool, the thin volume will change ownership to that pool. • The old repository volume will be deleted by default. If the existing repository volume name contains special characters or consists only of numbers, you must enclose the volume name in double quotation marks (" ").
diskPool	The name of the disk pool in which you want to create a new repository volume with the specified capacity. If the disk pool name contains special characters or consists only of numbers, you must enclose the disk pool name in double quotation marks (" "). You must use this parameter with the capacity parameter to create a new repository volume with the specified capacity.
capacity	The size that you want to set for the repository volume that you are creating. Size is defined in units of bytes, KB, MB, GB, or TB. The minimum physical capacity is 4 GB. The maximum physical capacity is 257 TB. You must use this parameter with the diskPool parameter to create a new repository volume with the specified capacity.

Parameter	Description
`retainRepositoryMembers`	If this parameter is set to `TRUE`, the old repository is retained. By default, the old repository is deleted. This parameter is ignored if the existing repository is reused.

Notes

If you do not specify a volume with the `volume` parameter, this command resets the metadata in the repository and, in effect, causes the thin volume to appear empty to the host. If you specify a volume with the **`volume`** parameter, that volume is either replaced by a newly created volume or by an existing volume if you specify one with the `existingRepositoryLabel` parameter. If you specify an existing volume with the `existingRepositoryLabel` parameter that is in a different disk pool, the thin volume will change ownership to the new disk pool.

The volume parameters of the thin volume, such as virtual capacity, quota and warning threshold, retain their previous values after you reinitialize the thin volume.

ⓘ   Immediate Availability Format (IAF) does not apply to volumes greater than 64 TB.

The following table lists the capacity limits for a thin volume.

Type of Capacity	Size
Minimum virtual capacity	32 MB
Maximum virtual capacity	256 TB
Minimum physical capacity	4 GB
Maximum physical capacity	257 TB

Thin volumes support all of the operations that standard volumes do with the following exceptions:

- You cannot change the segment size of a thin volume.
- You cannot enable the pre-read redundancy check for a thin volume.
- You cannot use a thin volume as the target volume in a volume copy.
- You cannot use a thin volume in a Synchronous Mirroring operation.

If you want to change a thin volume to a standard volume, use the volume copy operation to create a copy of the thin volume. The target of a volume copy is always a standard volume.

Minimum firmware level

7.83

8.30 increases the maximum capacity of a thin volume to 256 TB.

Start volume group defragment

The `start volumeGroup defragment` command starts a defragment operation on the specified volume group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

> ⓘ Defragmenting a volume group starts a long-running operation that you cannot stop.

Syntax

```
start volumeGroup [volumeGroupName] defragment
```

Parameter

Parameter	Description
volumeGroup	The name of the volume group that you want to defragment. Enclose the volume group name in square brackets ([ ]).

Notes

Host I/O errors might result in the volume groups with more than 32 volumes. This operation also might result in internal controller reboots because the timeout period ends before the volume group definition is set. If you experience this issue, quiesce the host I/O operations, and try the command again.

Minimum firmware level

6.10

Start volume group export

The `start volumeGroup export` command moves a volume group into an Exported state.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and

EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Then you can remove the drives that comprise the volume group and reinstall the drives in a different storage array.

> ⚠️ Do not perform these steps without first performing the steps listed in Learn about volume group migration.

> ℹ️ Within the volume group, you cannot move volumes that are associated with the features from one storage array to another storage array.

Syntax

```
start volumeGroup [volumeGroupName] export
```

Parameter

Parameter	Description
volumeGroup	The name of the volume group that you want to export. Enclose the volume group name in square brackets ([ ]).

Notes

When this command is successful, you can run the `start volumeGroup import` command to finish moving the volume group to a Complete state, which makes the volume group available to the new storage array.

If this command is unsuccessful because hardware problems prevented the completion of the export, use the `set volumeGroup forceState` command. The `set volumeGroup forceState` command lets you use the `start volumeGroup import` command to import a volume group.

After the volume group is in an Exported state or a Forced state, you can remove the drives that comprise the volume group from the storage array. You can reinstall the drives in a different storage array.

Minimum firmware level

7.10

Start Volume Group Full Provisioning

The `start volumeGroup fullProvisioning` command starts a full provisioning operation on all volumes in the disk pool and optionally disables resource provisioning on

the volume group.

Supported Arrays

This command applies to any individual storage array, including the EF600 and EF300 arrays; as long as all SMcli packages are installed.

Roles

To execute this command on an EF600 and EF300 storage array, you must have the Storage Admin role.

Context

The Resource Provisioning feature improves SSD wear-life and increases write performance by leaving a larger portion of the drive blocks in an unallocated state than a standard volume. A resource-provisioned volume is a thick volume in an SSD volume group or pool, where drive capacity is allocated (assigned to the volume), but the drive blocks are deallocated (unmapped) during volume creation. Drive blocks are allocated as needed to complete host write IOs. Host unmap operations can return drive blocks back to the unallocated state . Resource Provisioning also eliminates time-bound background initialization, allowing for large volumes to be initialized quickly.

Resource Provisioned volumes are supported only on SSD volume groups and pools, where all drives in the group or pool support the NVMe Deallocated or Unwritten Logical Block Error Enable (DULBE) error recovery capability. Performance improvement varies with each drive model and capacity.

The full provisioning format ensures all blocks needed by the volumes in the volume group are fully mapped on the drives. This command is only applicable to resource provisioned volume group. If the option to `disableResourceProvisioning` is not set to `FALSE`, then the volumes will still be resource provisioned and new volumes created on the volume group will be resource provisioned. If the option to disable resource provisioning is set to `TRUE`, then the volumes will no longer be resource provisioned and new volumes created on the volume group will not be resource provisioned.

Syntax

```
start volumeGroup[volumeGroupName] fullProvisioning
[disableResourceProvisioning=(TRUE | FALSE)]
```

Parameters

Parameter	Description
volumeGroup	The volume group you want to start the full provisioning operation. Enclose the volume group name in square brackets ([ ])

Parameter	Description
`disableResourceProvisioning`	The setting to specify if resource provisioning should be disabled after the full provisioning operation completes. To skip disabling resource provisioning, set this to `FALSE`. The default value is `TRUE`. ⓘ To re-enable resource provisioning on a volume group and all associated volumes, use the `Start Volume Group Resource Provisioning` command.

Minimum firmware level

11.72

Start volume group import

The `start volumeGroup import` command moves a volume group into a Complete state to make a newly introduced volume group available to its new storage array.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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.

ⓘ Within the volume group, you cannot move volumes that are associated with the features from one storage array to another storage array.

Syntax

```
start volumeGroup [volumeGroupName] import
```

Parameter

Parameter	Description
volumeGroup	The name of the volume group that you want to import. Enclose the volume group name in square brackets ([ ]).

Notes

Higher-level volumes that are specifically related to features (Synchronous Mirroring, Volume Copy, mapping, and persistent reservations) are removed as part of the import operation.

You must run the `show volumeGroup importDependencies` command before you run the `start volumeGroup import` command.

Minimum firmware level

7.10

Start volume group locate

The `start volumeGroup locate` command identifies the drives that are logically grouped together to form the specified volume group by blinking the indicator lights on the drives.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

Use the `stop volumeGroup locate` command to turn off the indicator lights on the drives.

Syntax

```
start volumeGroup [volumeGroupName] locate
```

Parameter

Parameter	Description
`volumeGroup`	The name of the volume group for which you want to locate the drives that belong to that volume group. Enclose the volume group name in square brackets ([ ]).

Minimum firmware level

6.16

Start Volume Group Resource Provisioning

The `start volumeGroup resourceProvisioning` command enables resource provisioning on a given volume group and starts a resource provisioning enablement asynchronous operation on each volume in the volume group. Resource provisioning requires that all the drives in the volume group support NVMe's DULBE feature.

Supported Arrays

This command applies to any individual storage array, including the EF600 and EF300 arrays; as long as all SMcli packages are installed.

Roles

To execute this command on an EF600 and EF300 storage array, you must have the Storage Admin or Support Admin roles.

Context

To disable resource provisioning on a volume group, use the full provisioning command with the option to disable resource provisioning. A volume group will be resource provisioned when created if all the drives are DULBE capable and the storage array's `resourceProvisionedVolumes` setting is `true`.

Syntax

```
start volumeGroup[volumeGroupName] resourceProvisioning
```

Parameters

Parameter	Description
`volumeGroupName`	The volume group you want to enable the resource provisioning feature. Enclose the volume group name in square brackets ([ ]).

Minimum firmware level

11.73

stop …

Cancel asynchronous mirror group role reversal

The `stop asyncMirrorGroup rolechange` command cancels a pending role reversal operation between asynchronous mirror groups.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameter

Parameter	Description
asyncMirrorGroup	The name of the asynchronous mirror group for which or which you want to cancel the pending role reversal operation. Enclose the asynchronous mirror group name in square brackets ([ ]). If the asynchronous mirror group name contains special characters or consists only of numbers, you must enclose the name in double quotation marks (" ") inside square brackets.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Stop consistency group snapshot rollback

The `stop cgSnapImage rollback` command stops a rollback operation to member base volumes in a snapshot consistency group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

ⓘ 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")
```

Parameter

Parameter	Description
cgSnapImage	The name of the consistency group snapshot image for which you want to stop a rollback operation. The name of a snapshot image is comprised of two parts: • The name of the snapshot group • An identifier for the snapshot image in the snapshot group The identifier for the snapshot image can be one of these: • An integer value that is the sequence number of the snapshot in the snapshot group. • NEWEST — Use this option when you want to show the latest snapshot image created in the snapshot group. • OLDEST — Use this option when you want to show the earliest snapshot image created in the snapshot group. Enclose the snapshot image name in double quotation marks (" ") inside square brackets ([ ]).

Parameter	Description
memberVolumeSet	The name of one or more member base volumes in a consistency group that you want to stop a rollback operation. Enclose each member base volume name in double quotation marks (" ") inside parentheses. You can enter more than one member base volume name. Enclose all of the member base volume names in one set of square brackets ([ ]). Enclose each member base volume name in double quotation marks (" "). Separate each member base volume name with a space. When the memberVolumeSet parameter is not used stopping the rollback process applies to all member volumes of the consistency group.

Notes

The name of a snapshot image has two parts separated by a colon (:):

- The identifier of the snapshot group
- The identifier of the snapshot image

For example, if you want to stop a roll back operation for the newest snapshot image in an entire consistency group that has the name CG1, you would use this command:

```
stop cgSnapImage ["CG1:newest"] rollback;
```

To stop a roll back operation for the snapshot image 12345 for base volume members memVol1, memVol2, and memVol3 in a consistency group that has the name CG2, you would use this command:

```
stop cgSnapImage ["CG2:12345"] rollback memberVolumeset=("memVol1 memVol2
memVol3");
```

Minimum firmware level

7.83

Stop consistency group snapshot volume

The `stop cgSnapVolume` command stops the copy-on-write operation for creating a consistency group snapshot volume.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

To restart the copy-on-write operation use the `resume cgSnapVolume` command.

> ℹ️ 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]
```

Parameter

Parameter	Description
`cgSnapVolume`	The name of the consistency group snapshot volume that you want to stop creating. Enclose the volume name in square brackets ([ ]). If the volume name has special characters or numbers, you must enclose the name in double quotation marks (" ") inside square brackets.

Minimum firmware level

7.83

Stop check volume parity job

The `stop check volume parity job` command stops an in-progress check volume parity job.

Supported Arrays

This command applies to any individual storage array, including the EF600 and EF300 arrays; as long as all SMcli packages are installed.

Roles

To execute this command on an EF600 and EF300 storage array, you must have the Storage Admin role.

Syntax

```
stop check volume parity job jobId=<job_id>;
```

Parameters

Parameter	Description
jobId	The job id corresponding to the check volume parity job to stop. This value is required.

Minimum firmware level

11.80

Stop pending snapshot images on consistency group

The `stop consistencyGroup pendingSnapImageCreation` command stops all of the pending snapshot images that are to be created on a snapshot consistency group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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
```

Parameters

Parameter	Description
consistencyGroupName	The name of the consistency group for which you want to stop any pending snapshot operation. Enclose the name of the consistency group in square brackets ([ ]). If the consistency group name has special characters or numbers, you must enclose the consistency group name in double quotation marks (" ") inside square brackets.

Minimum firmware level

7.83

Stop disk pool locate

The `stop diskPool locate` command turns off the indicator lights on the drives that were turned on by the `start diskPool locate` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
stop diskPool locate
```

Parameters

None.

Minimum firmware level

7.83

Stop drive locate

The `stop drive locate` command turns off the indicator light on the drive that was turned on by the `start drive locate` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
stop drive locate
```

Parameters

None.

Minimum firmware level

6.10

Stop drive replace

The `stop drive replace` command stops a data copy operation that was started by either a `set drive` command or a `replace drive` command with the **copyDrive** user input.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
`drive`	For high-capacity drive trays, specify the tray ID value, the drawer ID value, and the slot ID value for the drive. For low-capacity drive trays, specify the tray ID value and the slot ID value for the drive. Tray ID values are `0` to `99`. Drawer ID values are `1` to `5`. All slot ID maximums are 24. Slot ID values either begin at 0 or 1, depending on the tray model. Drive trays compatible with E2800 and E5700 controllers have slot ID numbers starting at 0. Drive trays compatible with E2700 and E5600 controllers have slot ID numbers starting at 1. Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).

Parameter	Description
`drive`	The World Wide Identifier (WWID) of the drive that you want to replace. Enclose the WWID in double quotation marks (" ") inside angle brackets (< >).

Notes

The `drive` parameter supports 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.

Minimum firmware level

8.20

Stop drive channel fault isolation diagnostics

The `stop driveChannel faultDiagnostics` command stops the drive channel fault isolation diagnostics, which stops the `start drive channel fault isolation diagnostics` command before it completes.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

(i) With firmware version 8.10, the `stop driveChannel faultDiagnostics` command is deprecated.

Syntax

```
stop driveChannel faultDiagnostics
```

Parameters

None.

Notes

Use the `start driveChannel faultDiagnostics` command and the `save driveChannel faultDiagnostics` command with the `stop driveChannel faultDiagnostics` command. These commands are needed to start the diagnostic test and save diagnostic test results to a file.

You also can stop the `start driveChannel faultDiagnostics` command at any time by pressing `Ctrl+C`.

Minimum firmware level

7.15

Stop drive channel locate

The `stop driveChannel locate` command turns off the indicator lights on the drive trays that were turned on by the `start driveChannel locate` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
stop driveChannel locate
```

Parameters

None.

Minimum firmware level

6.10

Stop snapshot group pending snapshot images

The `stop pendingSnapImageCreation` command cancels all of the pending snapshot images that are to be created on a snapshot or snapshot consistency group.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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
```

Parameters

Parameter	Description
snapGroup	The name of the snapshot group for which you want to stop pending snapshot images. Enclose the snapshot group name in square brackets ([ ]). If the snapshot group name has special characters or numbers, you must enclose the snapshot group name in double quotation marks (" ") inside square brackets.
consistencyGroup	The name of the snapshot consistency group for which you want to stop pending snapshot images. Enclose the snapshot consistency group name in square brackets ([ ]). If the snapshot consistency group name has special characters or numbers, you must enclose the snapshot group name in double quotation marks (" ") inside square brackets.

Minimum firmware level

7.83

Stop snapshot image rollback

The `stop snapImage rollback` command stops a snapshot image rollback operation that was initiated by the `start snapImage rollback` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

ⓘ 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]
```

Parameter

Parameter	Description
snapImage	The name of the snapshot image for which you want to stop a rollback operation. The name of a snapshot image is comprised of two parts: • The name of the snapshot group • An identifier for the snapshot image in the snapshot group The identifier for the snapshot image can be one of these: • An integer value that is the sequence number of the snapshot in the snapshot group. • NEWEST — Use this option when you want to show the latest snapshot image created in the snapshot group. • OLDEST — Use this option when you want to show the earliest snapshot image created in the snapshot group. Enclose the snapshot image name in double quotation marks (" ") inside square brackets ([ ]).

Notes

The name of a snapshot image has two parts separated by a colon (:):

• The identifier of the snapshot group

• The identifier of the snapshot image

For example, if you want to stop a rollback operation for snapshot image 12345 in a snapshot group that has the name snapGroup1, you would use this command:

```
stop snapImage ["snapGroup1:12345"] rollback;
```

To stop a rollback operation for the most recent snapshot image in a snapshot group that has the name snapGroup1, you would use this command:

```
stop snapImage ["snapGroup1:newest"] rollback;
```

Minimum firmware level

7.83

Stop snapshot volume

The `stop snapVolume` command stops a snapshot volume operation.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
stop snapVolume ["snapVolumeName"]
```

Parameters

Parameter	Description
snapVolume	The name of the snapshot volume that you want to stop. Enclose the snapshot volume name in double quotation marks (" ") inside square brackets ([ ]).

Notes

You can use any combination of alphanumeric characters, underscore (_), hyphen (-), and pound (#) for the names. Names can have a maximum of 30 characters.

Minimum firmware level

7.83

Stop SSD cache locate

The `stop ssdCache locate` command turns off the indicator lights on the Solid State Disks (SSDs) that were turned on by the `start ssdCache locate` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Support Admin role.

Syntax

```
stop ssdCache locate
```

Parameters

None.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Stop SSD cache performance modeling

The `stop ssdCache performanceModeling` command stops the performance modeling operation and displays the performance modeling data for the SSD cache.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Support Admin role.

Context

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"]
```

Parameters

Parameter	Description
`ssdCache`	The name of the SSD cache for which you want to stop modeling performance. Enclose the SSD cache name in square brackets ([ ]). If the SSD cache name has special characters or numbers, you must enclose the SSD cache name in double quotation marks (" ") inside square brackets.
`file`	The file path and the file name to which you want to save the performance modeling data. Enclose the file name in double quotation marks (" "). For example: `file="C:\Program Files\CLI\logs\ssdcacheperf.csv"` You can use any file name, but you must use the `.csv` extension.

Notes

This command returns the performance modeling information similar to this example. The size of your monitor determines how the information wraps and will affect how the information appears.

```
SSD Cache Name: my_cache
Start time: 4/18/12 2:38:26  PM IST
Stop time: 4/18/12 2:38:45 PM IST
Duration : 00:00:19

SSD Cache Performance Modeling Data (Response Time):

                        SSD Reads                HDD Reads                HDD
Writes
          Overall       Avg.                     Avg.                     Avg.
Cache     Response      Response     % of        Response     % of        Response
% of
Capacity  Time          Time         I/Os        Time         I/Os        Time
```

```
I/Os
186 GB        0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %
372 GB        0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %
557 GB *      0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %
558 GB        0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %
744 GB        0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %
931 GB        0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %
1117 GB       0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %
1303 GB       0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %
1489 GB       0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %
1675 GB       0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %
1862 GB       0 ms          0 ms         0.0 %    0 ms        0.0 %    0 ms
0.0 %

* = Current SSD cache physical capacity.


SSD Cache Performance Modeling Data (Cache Hit %):

Cache Capacity    Cache Hit %
186 GB            0 %
372 GB            0 %
557 GB *          0 %
558 GB            0 %
744 GB            0 %
931 GB            0 %
1117 GB           0 %
1303 GB           0 %
1489 GB           0 %
1675 GB           0 %
1862 GB           0 %
* = Current SSD cache physical capacity.
```

Minimum firmware level

7.84

Stop storage array configuration database diagnostic

The `stop storageArray configDbDiagnostic` command stops the diagnostic test to validate the configuration database in the controller firmware that was started by the `start storageArray configDbDiagnostic` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
stop storageArray configDbDiagnostic
```

Parameters

None.

Notes

The controller firmware returns a confirmation that the diagnostic test was cancelled.

In addition, you can start the database configuration diagnostic test through the storage management software GUI; however, you cannot stop the database configuration diagnostic test through the storage management software GUI. If you want to stop a running diagnostic test, you must use the `stop storageArray configDbDiagnostic` command.

If you try to use the `stop storageArray configDbDiagnostic` command after validation of the storage array configuration has finished, you do not receive any message that the validation has finished. This behavior is expected.

Minimum firmware level

7.75

7.77 refines usage.

Stop storage array drive firmware download

The `stop storageArray driveFirmwareDownload` command stops a firmware download to the drives in a storage array that was started with the `download storageArray driveFirmware` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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
```

Parameters

None.

Minimum firmware level

6.10

Stop storage array iSCSI session

The `stop storageArray iscsiSession` command forces the termination of a storage array iSCSI session.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
stop storageArray iscsiSession [SessionNumber]
```

Parameter

Parameter	Description
`iscsiSession`	The identifier number of the iSCSI session. Enclose the identifier number of the iSCSI session in square brackets ([ ]).

Minimum firmware level

7.10

Stop storage array locate

The `stop storageArray locate` command turns off the indicator lights on the storage array that were turned on by the `start storageArray locate` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
stop storageArray locate
```

Parameters

None.

Minimum firmware level

6.10

Stop tray locate

The `stop tray locate` command turns off the indicator light on the tray that was turned on by the `start tray locate` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
stop tray locate
```

Parameters

None.

Minimum firmware level

6.10

Stop volume copy

The `stop volumeCopy target source` command stops a volume copy operation. This command is valid for snapshot volume copy pairs.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

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

Parameters

Parameter	Description
target	The name of the target volume for which you want to stop a volume copy operation. Enclose the target volume name in square brackets ([ ]). If the target volume name has special characters or numbers, you must enclose the target volume name in double quotation marks (" ") inside square brackets.

Parameter	Description
source	The name of the source volume for which you want to stop a volume copy operation. Enclose the source volume name in square brackets ([ ]). If the source volume name has special characters or numbers, you must enclose the source volume name in double quotation marks (" ") inside square brackets.

Stop volume group locate

The `stop volumeGroup locate` command turns off the indicator lights on the drives that were turned on by the `start volumeGroup locate` command.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600 and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Syntax

```
stop volumeGroup locate
```

Parameters

None.

Minimum firmware level

6.16

suspend …

Suspend asynchronous mirror group

The `suspend asyncMirrorGroup` command suspends the synchronization of data on all mirrored pairs at the asynchronous mirror group level.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Storage Admin role.

Context

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]
```

Parameters

Parameter	Description
`asyncMirrorGroup`	The name of the asynchronous mirror group for which you want to suspend synchronization of data. Enclose the asynchronous mirror group name in square brackets ([ ]). If the asynchronous mirror group name has special characters or numbers, you must enclose the asynchronous mirror group name in double quotation marks (" ") inside square brackets.

Notes

When an asynchronous mirror group is in a suspended state, no attempt is made to copy data from the primary volumes to the secondary volumes of the mirrored pairs. Any writes to the primary side of the asynchronous mirror group are persistently logged in its associated mirror repository volumes. After the asynchronous mirror group is resumed, only the modified regions of the primary volumes are written to the secondary volumes.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Suspend SSD cache

The `suspend ssdCache` command temporarily stops caching for all of the volumes that are using the SSD cache.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, E5700, EF600, and EF300 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800, E5700, EF600, or EF300 storage array, you must have the Support Admin role.

Context

While caching is stopped, host reads are serviced from the base volumes instead of from the SSD cache.

Syntax

```
suspend ssdCache [ssdCacheName]
```

Parameter

Parameter	Description
ssdCache	The name of the SSD cache that you want to suspend. Enclose the SSD cache name in square brackets ([ ]). If the SSD cache name has special characters or numbers, you must enclose the SSD cache name in double quotation marks (" ") inside square brackets.

Notes

To restart caching, use the `resume ssdCache` command.

Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

Suspend synchronous mirroring

The `suspend syncMirror primaries` command suspends a synchronous mirroring operation.

Supported Arrays

This command applies to any individual storage array, including the E2700, E5600, E2800, and E5700 arrays, as long as all SMcli packages are installed.

Roles

To execute this command on an E2800 or E5700 storage array, you must have the Storage Admin role.

Context

(i) 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)]
```

Parameters

Parameter	Description
`primary`	The name of the primary volume for which you want to suspend 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.
`primaries`	The names of several primary volumes for which you want to suspend operations. All of the volumes will have the same properties. Enter the names of the volumes using these rules: • 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: • 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.
`writeConsistency`	This parameter defines whether the volumes identified in this command are in a write-consistency group or are separate. For the volumes in the same write-consistency group, set this parameter to `TRUE`. For the volumes that are separate, set this parameter to `FALSE`.

Notes

If you set the `writeConsistency` parameter to `TRUE`, the volumes must be in a write-consistency group (or

groups). This command suspends all write-consistency groups that contain the volumes. For example, if volumes A, B, and C are in a write-consistency group and they have remote counterparts A', B', and C', the command:

```
suspend syncMirror volume ["A"] writeConsistency=TRUE
```

suspends A-A', B-B', and C-C'. If you have a write-consistency group 1={A, B, C} and write-consistency group 2={D, E, F}, the command:

```
suspend syncMirror volumes ["A" "D"] writeConsistency=TRUE
```

suspends both write-consistency groups.

Minimum firmware level

6.10