



## D

### SANtricity commands

NetApp  
July 26, 2024

# Table of Contents

- D ..... 1
- Deactivate synchronous mirroring ..... 1
- Deactivate asynchronous mirroring ..... 1
- Delete asynchronous mirror group ..... 2
- Delete audit log records ..... 3
- Delete certificates ..... 4
- Delete consistency group snapshot image ..... 5
- Delete consistency group ..... 6
- Remove installed root/intermediate CA certificates ..... 7
- Delete disk pool ..... 8
- Delete email alert recipient ..... 9
- Delete host ..... 10
- Delete host group ..... 11
- Delete host port ..... 12
- Delete initiator ..... 13
- Delete iSCSI initiator ..... 14
- Delete consistency group snapshot volume ..... 15
- Delete snapshot group ..... 16
- Delete snapshot image ..... 17
- Delete snapshot volume ..... 19
- Unregister SNMP community ..... 20
- Unregister SNMP trap destination ..... 21
- Unregister SNMPv3 USM user ..... 22
- Delete SSD cache ..... 23
- Delete storage array directory server ..... 23
- Remove installed external key management certificate ..... 24
- Delete storage array login banner ..... 25
- Delete storage array syslog configuration ..... 26
- Remove installed trusted CA certificates ..... 27
- Delete syslog server ..... 28
- Delete volume from disk pool ..... 29
- Delete volume ..... 31
- Delete volume group ..... 33
- Test asynchronous mirror group connectivity ..... 33
- Diagnose controller iSCSI host cable ..... 35
- Diagnose controller ..... 38
- Diagnose synchronous mirroring ..... 40
- Disable external security key management ..... 41
- Disable storage array feature ..... 43
- Install server signed certificate ..... 43
- Install root/intermediate CA certificates ..... 45
- Install trusted CA certificates ..... 46
- Download drive firmware ..... 47

Download storage array drive firmware . . . . .	49
Download storage array firmware/NVSRAM . . . . .	51
Install storage array external key management certificate . . . . .	53
Download storage array NVSRAM. . . . .	55
Download tray configuration settings . . . . .	56
Download environmental card firmware . . . . .	57

# D

## Deactivate synchronous mirroring

The `deactivate storageArray feature` command deactivates the synchronous mirroring feature, disassembles the mirror repository volume, and releases the controller owner of the secondary volume.

### 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 Support Admin role.

### Context

The controller host port that is dedicated to the secondary volume is available for host data transfers.



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

### Syntax

```
deactivate storageArray feature=syncMirror
```

### Parameters

None.

### Minimum firmware level

6.10

## Deactivate asynchronous mirroring

The `deactivate storageArray feature` deactivates the Asynchronous Mirroring 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

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

## Syntax

```
deactivate storageArray feature=asyncRemoteMirror
```

## Parameters

None.

## Minimum firmware level

7.84

## Delete asynchronous mirror group

The `delete asyncMirrorGroup` command deletes one or more asynchronous mirror groups from the local storage array and the 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

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

## Syntax

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

## Parameter

Parameter	Description
<code>allAsyncMirrorGroups</code>	Use this parameter if you want to remove all asynchronous mirror groups from the local storage array and the remote storage array.
<code>asyncMirrorGroup</code>	The name of the asynchronous mirror group that you want to delete. Enclose the asynchronous mirror group name in double quotation marks (" ") inside square brackets ([ ]).
<code>asyncMirrorGroups</code>	The names of several asynchronous mirror groups that you want to delete. Enter the names of the asynchronous mirror groups using these rules: <ul style="list-style-type: none"><li>• Enclose all of the names in square brackets ([ ]).</li><li>• Enclose each of the names in double quotation marks (" ").</li><li>• Separate each of the names with a space.</li></ul>

## Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

## Delete audit log records

The `delete auditLog` command deletes some or all of the records in the audit log.

## 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

```
delete auditLog (all | (endRecord=timestamp | endDate=date) |  
(retentionCount=integer))
```

## Parameters

Parameter	Description
all	Allows you to delete all audit log records.
endRecord	Allows you to specify the ending record to delete, starting from the oldest record. The value is the integral value that represents the time stamp of the last audit log record, inclusive.
endDate	Allows you to specify the ending date to delete, starting from the oldest record. The format for entering the date is MM:DD:YY in the client time zone.   The audit log records, including the date specified, will be deleted.
retentionCount	Allows you to specify the number of the newest audit log records to be retained.

## Examples

```
SMcli -n Array1 -c "delete auditLog all;"  
  
SMcli -n Array1 -c "delete auditLog endRecord=1493070393313;"  
  
SMcli -n Array1 -c "delete auditLog endDate=04:30:17;"  
  
SMcli -n Array1 -c "delete auditLog retentionCount=1000;"  
  
SMcli completed successfully.
```

## Minimum firmware level

8.40

## Delete certificates

The `Delete certificates` command allows you to delete a certificate from the CLI package trust store.

## Supported Arrays

This command applies to the EF600 and EF300 storage arrays.

## Syntax

```
delete localCertificate all | alias alias
```

## Parameters

Parameter	Description
alias	Allows you to specify a certificate through the user-defined alias.

## Minimum firmware level

8.60

## Delete consistency group snapshot image

The `delete cgSnapImage consistencyGroup` command deletes the snapshot images in 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

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

## Parameters

Parameter	Description
consistencyGroup	The name of the consistency group from which you want to delete the snapshot images. Enclose the consistency group name in double quotation marks ("").



Parameter	Description
<code>deleteCount</code>	<p>The number of snapshot images that you want to delete from the consistency group. Use integer values.</p> <p>This parameter deletes the oldest snapshot image first and continues to delete the oldest snapshot images until reaching the number that you enter.</p>
<code>retainCount</code>	<p>The number of snapshot images that you want to keep in the consistency group. Use integer values.</p> <p>This parameter keeps the most recent snapshot images in the consistency group.</p>
<code>ignoreSnapVolume</code>	<p>Determines whether the associated consistency group snapshot volume is kept or deleted. This parameter applies only if the consistency group snapshot image is associated with a consistency group snapshot volume. To keep the snapshot volume, set this parameter to <code>TRUE</code>. To delete the snapshot volume, set this parameter to <code>FALSE</code>. The default value is <code>FALSE</code>.</p>

## Notes

If the snapshot images cannot be deleted for all of the relevant member volumes of the consistency group, the operation fails and none of the snapshot images are deleted.

When you delete a consistency group snapshot image that is associated with a consistency group snapshot volume, the corresponding snapshot volume member in the consistency group snapshot volume are transitioned to the Stopped state. A snapshot volume member in the Stopped state no longer has a relationship to the snapshot group of the deleted snapshot image. However, a snapshot volume member in the Stopped state keeps its relationship to its consistency group snapshot volume.

## Minimum firmware level

7.83

## Delete consistency group

The `delete consistencyGroup` command deletes 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

This command works in two ways:

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

## Syntax

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

## Parameter

Parameter	Description
consistencyGroup	The name of the snapshot consistency group that you want to delete. Enclose the snapshot consistency group name in double quotation marks ( " ") inside square brackets ([ ]).
deleteRepositoryMembers	The setting to delete on or retain the repository volumes. To delete the repository volumes, set this parameter to TRUE. To retain the repository volumes, set this parameter to FALSE. The default setting is FALSE.

## Minimum firmware level

7.83

## Remove installed root/intermediate CA certificates

The `delete controller caCertificate` command removes the installed root/intermediate CA certificate 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

```
delete controller [(a|b)] caCertificate aliases=("alias1" ... "aliasN")
```

## Parameters

Parameter	Description
controller	Allows you to specify the controller on which you want to delete 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 ([ ]).
aliases	Allows you to specify one or more CA certificates to be deleted using the alias names or specify all. The aliases must be from the controller for which the certificate is being deleted. Enclose all the aliases in parentheses. If you enter more than one alias, separate them with a space.

## Examples

```
SMcli -n Array1 -c "delete controller[a] caCertificate aliases=("myAlias" "anotherAlias");"
```

```
SMcli completed successfully.
```

## Minimum firmware level

8.40

## Delete disk pool

The `delete diskPool` command deletes 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



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

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

## Syntax

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

## Parameters

Parameter	Description
<code>diskPoolName</code>	The name of the disk pool that you want to delete. Enclose the disk pool name in square brackets ([ ]). If the disk pool name contains special characters or consists only of numbers, you must enclose the name in double quotation marks (" ") inside square brackets.
<code>force</code>	This parameter forces the deletion of volumes if your storage management software does not support automatic deletion of the volumes in the disk pool. To force the deletion of a disk pool and the volumes that it contains, set this parameter to <code>TRUE</code> . The default is <code>FALSE</code> .

## 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.

## Minimum firmware level

7.83

## Delete email alert recipient

The `delete emailAlert` command deletes recipient email address(es) from the Email

alert 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

```
delete emailAlert
    (allEmailRecipients |
     emailRecipients [emailAddress1 ... emailAddressN])
```

## Parameters

Parameter	Description
allEmailRecipients	Allows you to delete all email recipients.
emailRecipients	Allows you to delete the recipient addresses. Enclose the email addresses in square brackets ([ ]).

## Examples

```
SMcli -n Array1 -c "delete emailAlert allEmailRecipients;"

SMcli -n Array1 -c "delete emailAlert emailRecipients
[\"person1@email.domain.com\" \"person3@email.domain.com\"];"

SMcli completed successfully.
```

## Minimum firmware level

8.40

## Delete host

The `delete host` command deletes one or more hosts.

## 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

```
delete host [hostName]
```

## Parameters

Parameter	Description
host	The name of the host that you want to delete. Enclose the host name in square brackets ([ ]). If the host name has special characters, you must enclose the host name in double quotation marks (" ") inside square brackets.

## Notes

A host is a computer that is attached to the storage array and accesses the volumes on the storage array through the host ports on the host.

## Minimum firmware level

5.20

## Delete host group

The `delete hostGroup` command deletes 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.

## Context



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

## Syntax

```
delete hostGroup [hostGroupName]
```

## Parameter

Parameter	Description
hostGroup	The name of the host group that you want to delete. Enclose the host group name in square brackets ([ ]). If the host group name contains special characters or consists only of numbers, you must enclose the host group name in double quotation marks (" ") inside square brackets.

## Notes

A host group is an optional topological element that is a collection of hosts that share access to the same volumes. The host group is a logical entity.

## Minimum firmware level

5.20

## Delete host port

The `delete hostPort` command deletes a host port identification.

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



This command does not work in an iSCSI environment, where the host ports are considered initiators. Instead, use the `delete iscsiInitiator` command. See [Delete iSCSI initiator](#).

## Syntax

```
delete hostPort [hostPortName]
```

## Parameter

Parameter	Description
hostPort	The name of the host port that you want to delete. Enclose the name of the host port in square brackets ([ ]). If the host port name contains special characters or consists only of numbers, you also must enclose the name in double quotation marks (" ") inside square brackets.

## Notes

A host port is a physical connection on a host adapter that resides within a host computer. A host port provides a host access to the volumes in a storage array.

## Minimum firmware level

5.20

## Delete initiator

The `delete initiator` command deletes 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



This command replaces the deprecated [Delete iSCSI initiator](#) command.



This command is applicable only to iSCSI, iSER, NVMe over RoCE, NVMe over InfiniBand, and NVMe over Fibre Channel.



## Syntax

```
delete initiator (["initiatorName"] | <"initiatorQualifiedName">)
```

## Parameters

Parameter	Description
initiator	Allows you to specify the initiator identifier for which you want to delete. 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 (for example, iqn or nqn).

## Minimum firmware level

8.41

## Delete iSCSI initiator

The `delete iscsiInitiator` command deletes a specific iSCSI initiator object.

## 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 [Delete initiator](#) command.

## Syntax

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

## Parameters

Parameter	Description
<code>iscsiInitiator</code>	<p>The identifier of the iSCSI initiator that you want to delete. The identifier of the iSCSI initiator can be either an iSCSI ID or a unique name.</p> <p>Enclose an iSCSI ID in double quotation marks ( " ") inside angle brackets (&lt; &gt;).</p> <p>Enclose the name in double quotation marks ( " ") inside square brackets ([ ]).</p>

## Minimum firmware level

7.10

8.41 This command is deprecated.

## Delete consistency group snapshot volume

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

### 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

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

### Parameters

Parameter	Description
<code>cgSnapVolume</code>	The name of the consistency group snapshot volume that you want to delete. Enclose the name of the consistency group snapshot volume in double quotation marks ( " ") inside square brackets ([ ]).

Parameter	Description
<code>deleteRepositoryMembers</code>	The parameter to save or delete the member volumes. To save the member volumes, set this parameter to <code>TRUE</code> . To delete the member volumes, set this parameter to <code>FALSE</code> . The default value is <code>TRUE</code> .

## Minimum firmware level

7.83

## Delete snapshot group

The `delete snapGroup` command an entire snapshot group and optionally the associated repository 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.

### Context



**Possible damage to the storage array configuration** — All of the data in the snapshot group is lost as soon as you run this command.

### Syntax

```
delete snapGroup ["snapGroupName"]
[deleteRepositoryMembers=(TRUE | FALSE)]
```

### Parameters

Parameter	Description
<code>snapGroup</code>	The name of the snapshot group that you want to delete. Enclose the snapshot group name in double quotation marks ( " ") inside square brackets ( [ ] ).

Parameter	Description
<code>deleteRepositoryMembers</code>	The parameter to delete or save the repository volumes. To delete the repository volumes, set this parameter to <code>TRUE</code> . To save the repository volumes, set this parameter to <code>FALSE</code> . The default value is <code>FALSE</code> .

## 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.

You can delete a snapshot group if it is empty or if it contains snapshot images. All of the snapshot images in the snapshot group are deleted along with the snapshot group. If any existing snapshot image within the snapshot group has an associated snapshot volume, each snapshot volume is stopped and detached from the snapshot image. When you delete a snapshot group the associated repository volume is also deleted. By default, all member volumes in the repository volume are retained as unused, unmapped standard volumes. To remove the member volumes set the `deleteRepositoryMembers` parameter to `TRUE`, or do not use this parameter. To keep the member volumes, set the `deleteRepositoryMembers` parameter to `FALSE`.

## Minimum firmware level

7.83

## Delete snapshot image

The `delete snapImage` command deletes one or more snapshot images from 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

```

delete snapImage (snapGroup="snapGroupName" |
snapGroups= (" snapGroupName1 "
... "snapGroupName") )
[deleteCount=numberOfSnapImages]
[retainCount=numberOfSnapImages]
[ignoreSnapVolume=(TRUE | FALSE)]
[snapImageID=OLDEST]

```

## Parameters

Parameter	Description
snapGroup	The name of the snapshot group that has the snapshot image that you want to delete. Enclose the name of the snapshot group in double quotation marks (" ").
snapGroups	The names of several snapshot groups that has the snapshot image that you want to delete. Enter the names of the snapshot groups using these rules: <ul style="list-style-type: none"> <li>• Enclose all of the names in parentheses.</li> <li>• Enclose each of the names in double quotation marks (" ").</li> <li>• Separate each of the names with a space.</li> </ul>
deleteCount	The number of snapshot images that you want to delete from the snapshot group. Use integer values.  This parameter deletes the oldest snapshot image first and continues to delete the oldest snapshot images until reaching the number that you enter.  If the number that you enter is greater than the actual number of all of the snapshot images in the snapshot group, all of the snapshot images will be deleted. The snapshot group is left empty.
retainCount	The number of snapshot images that you want to keep in the snapshot group. Use integer values.  This parameter keeps the most recent snapshot images in the snapshot group and deletes older snapshot images.  If the number of existing snapshot images in the snapshot group is less than the number that you enter, none of the snapshot images are deleted.

Parameter	Description
ignoreSnapVolume	<p>Use this parameter to make sure that you do not delete a snapshot image that has a snapshot volume associated with the snapshot image. You can use one of these values:</p> <ul style="list-style-type: none"> <li>• <code>TRUE</code> - Use this value to delete the snapshot image even though the snapshot image has an associated snapshot volume.</li> <li>• <code>FALSE</code> - Use this value to keep the snapshot image when the snapshot image has an associated snapshot volume.</li> </ul> <p>The default value is <code>TRUE</code>.</p>
snapImageID	<p>The <code>snapImageID</code> parameter accepts only the <code>OLDEST</code> option. This parameter deletes the earliest snapshot image created.</p>

## Notes

You can delete the oldest snapshot image from a snapshot group repository volume. The definition of a snapshot image that you delete is removed from the system. The space occupied by the snapshot image that you delete from the snapshot group repository volume is released and made available for reuse within the snapshot group.

If you do not use any other parameters with the `snapGroup` parameter or `snapGroups` parameter, by default the oldest snapshot image is deleted.

Any snapshot volumes that exist for a snapshot image transition to the Stopped state when the snapshot image is deleted.

This command will not run when the controller is in Lock-down mode.

## Minimum firmware level

7.83

## Delete snapshot volume

The `delete snapVolume` command deletes a snapshot volume and optionally the associated snapshot repository members.

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

## Syntax

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

## Parameters

Parameter	Description
snapVolume	The name of the snapshot volume that you want to delete. Enclose the snapshot volume name in double quotation marks ( " ") inside square brackets ( [ ] ).
deleteRepositoryMembers	The parameter to save or delete the repository members. To save the repository members, set this parameter to FALSE. To delete the repository members, set this parameter to TRUE. The default value is TRUE. If you do not use this parameter, the repository members are automatically deleted.

## Minimum firmware level

7.83

## Unregister SNMP community

The `delete snmpCommunity` command deletes an existing Simple Network Management Protocol (SNMP) community that you previously created and registered using the `create snmpCommunity` command. Deleting an SNMP community effectively unregisters the community. Any trap destinations associated with that community are also removed.

## 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

```
delete snmpCommunity communityName="snmpCommunityName"
```

## Parameters

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

## Minimum firmware level

8.30

## Unregister SNMP trap destination

The `delete snmpTrapDestination` command deletes an existing Simple Network Management Protocol (SNMP) trap destination that you previously created and registered using the `create snmpTrapDestination` command.

## 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

```
delete snmpTrapDestination trapReceiverIP=ipAddress
```

## Parameters



Parameter	Description
trapReceiverIP	The IP address of the SNMP manager from which you want to stop sending trap messages.

## Minimum firmware level

8.30

## Unregister SNMPv3 USM user

The `delete snmpUser userName` command deletes an existing Simple Network Management Protocol (SNMP) USM user that you previously created and registered using the `create snmpUser` command. Deleting an SNMP user effectively unregisters the user. Any trap destinations associated with that user are also removed.

## 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

```
delete snmpUser userName="snmpUserName" [engineId=(local | engineId)]
```

## Parameters

Parameter	Description
userName	The name of the SNMP USM user that you want to delete. 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 <code>local</code> to specify the local SNMP agent is the authoritative agent or a hexadecimal digit string to specify a remote SNMP agent engine ID.

## Minimum firmware level

8.72

## Delete SSD cache

The `delete ssdCache` command deletes the SSD cache. All data in the SSD cache is purged.

### 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

```
delete ssdCache [ssdCacheName]
```

### Parameter

Parameter	Description
<code>ssdCache</code>	The name of the SSD cache that you want to delete. 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

## Delete storage array directory server

The `delete storageArray directoryServers` command allows you to delete one or more directory 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

```
delete storageArray (allDirectoryServers |
  directoryServers ["domainId1" ... "domainIdN"])
```

## Parameters

Parameter	Description
allDirectoryServers	Allows you to delete all directory servers.
directoryServers	Allows you to specify one or more directory servers to delete, each identified with the domain ID.   Enclose the IDs in square brackets ([ ]). If you supplied more than one, then separate them with a space.

## Examples

```
SMcli -n Array1 -c "delete storageArray directoryServers ["domain1"
"domain3"];"
```

```
SMcli -n Array1 -c "delete storageArray allDirectoryServers;"
```

```
SMcli completed successfully.
```

## Minimum firmware level

8.40 adds the command.

## Remove installed external key management certificate

The `delete storageArray keyManagementCertificate` command removes the installed external key management certificate from 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.

## Context



This command applies only to external key management.

## Syntax

```
delete storageArray keyManagementCertificate
certificateType=certificate_type
```

## Parameters

Parameter	Description
certificateType	Allows you to specify the certificate type to delete. Valid choices are: <code>client</code> or <code>server</code> .

## Example

```
SMcli -n Array1 -c "delete storageArray keyManagementCertificate
certificateType='client';"

SMcli completed successfully.
```

## Minimum firmware level

8.40

## Delete storage array login banner

The `delete storageArray loginBanner` command allows you to delete the login banner text file that was previously uploaded and saved.

## 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

```
delete storageArray loginBanner
```

## Parameters

None.

## Minimum firmware level

8.41

# Delete storage array syslog configuration

The `delete storageArray syslog` command allows you to delete the specified syslog configuration used for storing audit logs.

## 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

```
delete storageArray syslog (allServers | id="<id>")
```

## Parameters

Parameter	Description
<code>allServers</code>	Delete all syslog configurations.
<code>id</code>	ID of the syslog server to delete. The ID is available using the <code>show storageArray syslog</code> command.

## Minimum firmware level

8.42

# Remove installed trusted CA certificates

The `delete storageArray trustedCertificate` command removes the specified user installed 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

```
delete storageArray trustedCertificate [(allUserInstalled |  
aliases=("alias1" ... "aliasN"))]
```

## Parameters

Parameter	Description
<code>allUserInstalled</code>	Allows you to specify the removal of all user installed certificates.
<code>aliases</code>	Allows you to specify one or more CA certificates to be deleted using the alias names or specify all. The aliases can be from any controllers. Enclose all the aliases in parentheses. If you enter more than one alias, separate them with a space.

## Examples

```
SMcli -n Array1 -c "delete storageArray trustedCertificate
allUserInstalled;"
```

```
SMcli -n Array1 -c "delete storageArray trustedCertificate
aliases=("19527b38-8d26-44e5-8c7f-5bf2ca9db7cf" "04bf744c-413a-49f1-
9666-88d74189591d");"
```

```
SMcli completed successfully.
```

## Minimum firmware level

8.40

## Delete syslog server

The `delete syslog` command deletes one or more servers from the syslog configuration so that it no longer receives alerts.

### 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

```
delete syslog (allServers | serverAddresses [serverAddress1 ...
serverAddressN])
```

### Parameters

Parameter	Description
<code>allServers</code>	Allows the user to delete all syslog servers.
<code>serverAddresses</code>	Allows the user to delete the syslog servers. Enclose the servers in square brackets ([ ]).

### Examples

```
SMcli -n Array1 -c "delete syslog allServers;

SMcli -n Array1 -c "delete syslog serverAddresses
["serverName1.company.com"]";

SMcli completed successfully.
```

## Minimum firmware level

8.40

## Delete volume from disk pool

The `delete volume` command deletes either normal or thin volumes from 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

You also can use this command to delete any schedules related to the volume. When you delete the schedule the volume is not deleted.

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

## Syntax

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



## Parameters

Parameter	Description
<code>allVolumes</code>	This parameter deletes all of the volumes on a disk pool.
<code>volume</code>	The name of a specific volume that you want to delete. Enclose the volume name in square brackets ([ ]). If the volume name contains special characters or consists only of numbers, you must enclose the volume name in double quotation marks (" ") inside square brackets.
<code>volumes</code>	The names of several volumes that you want to delete. Enter the names of the volumes using these rules: <ul style="list-style-type: none"><li>• Enclose all of the names in square brackets ([ ]).</li><li>• Separate each of the names with a space.</li></ul>
<code>force</code>	Use this parameter to force the immediate deletion of a volume even if the controllers are performing other operations. To immediately force the deletion of a volume, set this parameter to <code>TRUE</code> . To wait until the controllers have finished performing other operations, do not use this parameter or set this parameter to <code>FALSE</code> .
<code>schedule</code>	This parameter deletes any schedule for related to a specific disk pool volume. Only the schedule is deleted, the disk pool volume remains.
<code>retainRepositoryMembers</code>	When you delete a thin volume, the associated repository volume is deleted by default. However, when the <code>retainRepositoryMembers</code> is set to <code>TRUE</code> , the repository volume is retained. For normal volumes, this parameter has no effect.

## Notes

When you use the `allVolumes` parameter, this command deletes volumes until all of the volumes are removed or until an error is encountered. If an error is encountered, this command does not try to delete the remaining volumes. Deleting volumes from different volume groups is possible. All of the volume groups that become empty are deleted if you set the `removeVolumeGroup` parameter to `TRUE`.

## Minimum firmware level

7.83

# Delete volume

The `delete volume` command deletes one or more standard 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.

## Context



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



When a volume exceeds a given size (currently 128 TB) the delete is being performed in background and the freed space may not be immediately available.

## Syntax

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

## Parameters

Parameter	Description
<code>allVolumes</code>	This parameter deletes all of the volumes in a storage array.
<code>volume</code>	The name of a volume that you want to delete. Enclose the volume name in square brackets ([ ]). If the volume name has special characters or consists only of numbers, you must enclose the volume name in double quotation marks (" ") inside square brackets.

Parameter	Description
volumes	<p>The names of several volumes that you want to delete. Enter the names of the volumes using these rules:</p> <ul style="list-style-type: none"> <li>• Enclose all of the names in square brackets ([ ]).</li> <li>• Separate each of the names with a space.</li> </ul> <p>If the volume names have special characters or consist only of numbers, enter the names using these rules:</p> <ul style="list-style-type: none"> <li>• Enclose all of the names in square brackets ([ ]).</li> <li>• Enclose each of the names in double quotation marks (" ").</li> <li>• Separate each of the names with a space.</li> </ul>
removeVolumeGroup	<p>Deleting the last volume in a volume group does not delete the volume group. You can have a standalone volume group (minus any volumes). To remove the standalone volume group, set this parameter to <code>TRUE</code>. To keep standalone volume groups intact, set this parameter to <code>FALSE</code>.</p>
force	<p>Use this parameter to force the immediate deletion of a volume even if the controllers are performing other operations. To immediately force the deletion of a volume, set this parameter to <code>TRUE</code>. To wait until the controllers have finished performing other operations, do not use this parameter or set this parameter to <code>FALSE</code>.</p>

## Notes

When you use the `allVolumes` parameter, this command deletes volumes until all of the volumes are removed or until an error is encountered. If an error is encountered, this command does not try to delete the remaining volumes. Deleting volumes from different volume groups is possible. All of the volume groups that become empty are deleted if you set the `removeVolumeGroup` parameter to `TRUE`.

If you want to delete an entire volume group, you can also use the `delete volumeGroup` command.

## Minimum firmware level

6.10

7.10 adds the `removeVolumeGroup` parameter.

# Delete volume group

The `delete volumeGroup` command deletes an entire volume group and its associated 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.

## Context



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

## Syntax

```
delete volumeGroup [volumeGroupName]
```

## Parameter

Parameter	Description
<code>volumeGroup</code>	The name of the volume group that you want to delete. Enclose the volume group name in square brackets ([ ]).

## Minimum firmware level

6.10

# Test asynchronous mirror group connectivity

The `diagnose asyncMirrorGroup` command tests possible communication problems between the local storage array and the remote storage array associated with an asynchronous mirror group.

## 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, E5700, EF600, and EF300 array, the client type must be set to `symbol`. This command will not execute if the client type is set to `https`.

## Roles

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

## Syntax

```
diagnose asyncMirrorGroup [asyncMirrorGroupName]  
testID=(all | connectivity | latency | bandwidth | portConnections)
```

## Parameter

Parameter	Description
<code>asyncMirrorGroup</code>	The name of an existing asynchronous mirror group that you want to test. 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.

Parameter	Description
testID	<p>The identifier for the diagnostic test you want to run. The identifier and corresponding tests are as follows:</p> <ul style="list-style-type: none"> <li>• <b>All</b> — Performs all the tests associated with this command.</li> <li>• <b>Connectivity</b> — Verifies that the two controllers have a communication path. The connectivity test sends an inter-controller message between the storage arrays, and then validates that the corresponding asynchronous mirror group on the remote storage array exists. It also validates that the volume members of the asynchronous mirror group on the remote system match the volume members of the asynchronous mirror group on the local system.</li> <li>• <b>Latency</b> — Sends a SCSI test unit command to each volume on the remote storage array associated with the asynchronous mirror group to test the minimum, average, and maximum latency.</li> <li>• <b>Bandwidth</b> — Sends two inter-controller messages to the remote storage array to test the minimum, average, and maximum bandwidth as well as the negotiated link speed of the port on the controller performing the test.</li> <li>• <b>Port connections</b> — Shows the port that is being used for mirroring on the local storage array and the port that is receiving the mirrored data on the remote storage array.</li> </ul>

## Minimum firmware level

7.84

11.80 adds EF600 and EF300 array support

## Diagnose controller iSCSI host cable

The `diagnose controller iscsiHostPort` command runs diagnostic tests on the copper cables between iSCSI host interface cards 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

You can run diagnostics on a selected port or all ports. The ports must be able to support the cable diagnostics. If the ports do not support cable diagnostics, an error is returned.

## Syntax

```
diagnose controller [(a|b)]
iscsiHostPort ([all] | [portLabel])
testID=cableDiagnostics
```

## Parameters

Parameter	Description
controller	The controller on which you want to run the cable diagnostic test. Valid controller identifiers are <code>a</code> or <code>b</code> , where <code>a</code> is the controller in slot A, and <code>b</code> is the controller in slot B. Enclose the controller identifier in square brackets ( <code>[ ]</code> ). If you do not specify a controller, the storage management software returns a syntax error.
iscsiHostPort	The iSCSI host port on which you want to run the diagnostic tests. You can run the diagnostics on all iSCSI host ports, or you can run the diagnostics on a specific iSCSI host port.  See the following for more information:  <a href="#">"Identifying an iSCSI host port label"</a>
testID	The identifier for the diagnostic test that you want to run. For this diagnostic test, the only choice is <code>cableDiagnostics</code> .

## 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]
```

## Notes

When you run the cable diagnostic test, the firmware returns the following information:

- **Host Port:** The port on which the diagnostic test was run.
- **HIC:** The host interface card associated with this port.
- The date and time the test was run.
- **Status:**
  - **OK:** All of the pairs of cables are good and do not have any faults.
  - **Open:** One or more of the four pairs of cables are open.
  - **Short:** One or more of the four pairs of cables are shorted.
  - **Incomplete:** One or more of the four pairs returned incomplete or invalid test results.
- **Length:** The length of the cables are listed in meters and the following information about the cables is returned:
  - When the cable status is OK, the approximate lengths of the cable pairs are returned. The lengths of the cable pairs are shown as a range (L1-L2), which are the shortest and the longest lengths of the cable pairs.



- If the cable status is Open or Short, the approximate distance to the failure in the cable pairs. If there is one failure, the length is reported for that cable pair. If there is more than one failure, the information returned is both the shortest and longest lengths to the failures. The lengths are listed as a range (L1-L2) where L1<L2.
- If the cable status is Incomplete, the information returned are the lengths for the shortest and longest cable pairs that the firmware can successfully test. The lengths are listed for the valid cable pairs as a range (L1-L2) where L1<L2.
- Register values for the cable diagnostic registers. The values are in a hexadecimal format:
  - Two bytes show the combined cable status (four bits per port).
  - Four two-byte numbers show the length of each channel.

## Minimum firmware level

7.77

8.10 revises the numbering system for iSCSI host ports.

## Diagnose controller

The `diagnose controller` command runs diagnostic tests on the 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

The diagnostic tests consist of loopback tests in which data is written to the drives and read from the drives.

### Syntax

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

### Parameters

Parameter	Description
controller	The controller 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 ([ ]). If you do not specify a controller, the storage management software returns a syntax error.
loopbackDriveChannel	The drive channels on which you want to run the diagnostic tests. You can either choose to run the diagnostics on all channels or select a specific channel on which to run diagnostics. If you select a specific channel, valid values for the drive channels are 1, 2, 3, 4, 5, 6, 7, or 8.
testID	The identifier for the diagnostic test you want to run. The identifier and corresponding tests are as follows: <ul style="list-style-type: none"> <li>• 1 — Read test</li> <li>• 2 — Write test</li> <li>• 3 — Data loop-back test</li> <li>• discreteLines — Discrete lines diagnostic test</li> </ul>
patternFile	The file path and the file name that contains a data pattern that you want to use as test data. Enclose the file name of the data pattern in double quotation marks (" "). For example: <pre>file="C:\Program Files\CLI\sup\patfile.txt"</pre>

## Notes

When you run a data loop-back test, you can optionally specify a file that contains a data pattern. If you do not specify a file, the controller firmware provides a default pattern.

Discrete lines are control lines and status lines that are connected between two controllers in a controller tray. The discrete lines diagnostic test lets each controller check that control signal transitions can be observed at the control inputs of the alternate controller. The discrete lines diagnostic test automatically runs after each power-cycle or each controller-reset. You can run the discrete lines diagnostic test after you have replaced a component that failed the initial discrete lines diagnostic test. The discrete lines diagnostic test returns one of these messages:

- When the discrete lines diagnostic test runs successfully, this message appears:

```
The controller discrete lines successfully passed the diagnostic
test. No failures were detected.
```

- If the discrete lines diagnostic test fails, this message appears:

```
One or more controller discrete lines failed the diagnostic test.
```

- If the CLI cannot run the discrete lines diagnostic test, the CLI returns Error 270, which means that the discrete lines diagnostic test could not start nor complete.

## Minimum firmware level

6.10 adds the read test, the write test, and the data loop-back test.

6.14 adds the discrete lines diagnostic test.

7.30 adds the updated drive channel identifier.

## Diagnose synchronous mirroring

The `diagnose syncMirror` command tests the connection between the specified primary volumes and the mirror volumes on a storage array with the synchronous mirroring feature enabled.

### 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

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

### Parameter

Parameter	Description
primary	The name of the primary volume of the remote mirror pair that you want to test. Enclose the primary volume name in square brackets ([ ]). If the primary volume name has special characters or consists only of numbers, you must enclose the primary volume name in double quotation marks (" ") inside square brackets.
primaries	<p>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.</p> <p>The names of several volumes that you want you want to use as primary volumes. Enter the names of the primary volumes using these rules:</p> <ul style="list-style-type: none"> <li>• Enclose all of the names in square brackets ([ ]).</li> <li>• Enclose each of the names in double quotation marks (" ").</li> <li>• Separate each of the names with a space.</li> </ul>

## Minimum firmware level

6.10

## Disable external security key management

The `disable storageArray externalKeyManagement file` command disables external security key management for a storage array that has Full Disk Encryption drives.

### 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

```
disable storageArray externalKeyManagement
file="fileName"
passPhrase="passPhraseString"
saveFile=(TRUE | FALSE)
```

## Context




This command enables internal key management as the alternate form of Drive Security.



This command applies only to external key management.

## Parameters

Parameter	Description
file	<p>The file path and the file name where the internal security key file is stored. For example:</p> <pre>file="C:\Program Files\CLI\sup\drivesecurity.slk"</pre> <p> The file name must have an extension of .slk.</p>
passPhrase	<p>A character string that encrypts the security key so that you can store the security key in an external file.</p>
saveFile	<p>Verifies and saves the security key to a file. Set to <code>FALSE</code> to not save and verify the security key to a file. The default value is <code>TRUE</code>.</p>

## Notes

Your pass phrase must meet these criteria:

- Must be between eight and 32 characters long.
- No whitespace.
- Must contain at least one uppercase letter.
- Must contain at least one lowercase letter.
- Must contain at least one number.
- Must contain at least one non-alphanumeric character, for example, < > @ +.



If your pass phrase does not meet these criteria, you will receive an error message.

## Minimum firmware level

8.40

8.70 adds the `saveFile` parameter.

## Disable storage array feature

The `disable storageArray` command disables a storage array 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

Run the `show storageArray` command to show a list of the feature identifiers for all enabled features in the storage array.

### Syntax

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

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

- `driveSecurity`

### Parameters

None.

## Minimum firmware level

8.20 adds the `driveSecurity` attribute and removes all other attributes.

## Install server signed certificate

The `download controller arrayManagementServerCertificate` command installs the server certificate 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 Security Admin role.

## Context

Perform this action for each controller using the signed certificate that is applicable to the controller. The signed certificate must include the controller's IPs/DNS names.

## Syntax

```
download controller [(a|b)] arrayManagementServerCertificate
file="filename"
```

## Parameters

Parameter	Description
controller	Allows the user to specify the controller on which you want to install the server signed certificate 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 ([ ]).
file	Allows the user to specify the file path and filename that contains the signed certificate. The acceptable extensions are .cer, .crt, .der.

## Examples

```
SMcli -n Array1 -c "download controller [a]
arrayManagementServerCertificate
file="C:\serverSignedCertificateA.cer";"

SMcli -n Array1 -c "download controller [b]
arrayManagementServerCertificate
file="C:\serverSignedCertificateB.cer";"

SMcli completed successfully.
```

## Minimum firmware level

8.40

## Install root/intermediate CA certificates

The `download controller caCertificate` command installs the root/intermediate CA certificates on the controllers' web servers to validate the web server signed 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.

### Context

Perform this action for each controller.

### Syntax

```
download controller[(a|b)] caCertificate [alias="string"]
file="filename"
```

### Parameters

Parameter	Description
<code>controller</code>	Allows you to specify the controller on which you want to install the root/intermediate signed certificate. 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 ([ ]).
<code>alias</code>	Allows you to specify an alias to represent the root/intermediate certificate. This alias is used to look up information about the root/intermediate certificates or to delete them. An alias is associated to a root/intermediate certificate and must be unique.



Parameter	Description
file	Allows you to specify the file that contains the root/intermediate CA certificate. The acceptable extensions are .pem, .cer, .crt, and .der.

## Examples

```
SMcli -n Array1 -c "download controller[a] caCertificate alias="myAlias"
file="C:\rootCA1.cer";"
SMcli -n Array1 -c "download controller[b] caCertificate
file="C:\rootCA1.cer";"

SMcli completed successfully.
```

## Minimum firmware level

8.40

## Install trusted CA certificates

The `download controller trustedCertificate` command installs the trusted CA certificates on the controllers' web servers to validate the LDAP server signed 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.

## Context

Perform this action only if the CA who signed the certificates is not well known or commonly trusted. The command installs the CA certificate on both controllers.

## Syntax

```
download storageArray trustedCertificate [alias=string] file="filename"
```

## Parameters

Parameter	Description
alias	Allows you to specify an alias to represent the trusted CA certificate. This alias is used to look up information about the trusted CA certificates or to delete them. An alias is associated to a trusted certificate and must be unique.
file	Allows you to specify the file that contains the trusted CA certificate. The acceptable extensions are .pem, .cer, .crt, and .der.

## Examples

```
SMcli -n Array1 -c "download storageArray trustedCertificate
alias="myAlias"
file="C:\rootCA1.cer";"
SMcli -n Array1 -c "download storageArray trustedCertificate
file="C:\rootCA1.cer";"

SMcli completed successfully.
```

## Minimum firmware level

8.40

## Download drive firmware

The `download drive firmware` command downloads a firmware image to 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 or Support Admin role.

## Context



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



The `content` parameter is deprecated. Use the `firmware` parameter instead.

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

## Syntax

```
download (drive \trayID, [drawerID, slotID \| drives\ trayID1, [drawerID1, slotID1 ... trayIDn, [drawerIDn, slotIDn]])
[online|offline] firmware file="filename"
```

## Parameters

Parameter	Description
drive or drives	<p>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.</p> <p>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.</p> <p>Enclose the tray ID value, the drawer ID value, and the slot ID value in square brackets ([ ]).</p>
online or offline	<p>Select <code>online</code> to perform an online drive firmware download, otherwise select <code>offline</code>. The default value is <code>offline</code>.</p>
file	<p>The file path and the file name of the file that contains the firmware image. Enclose the file path and the file name of the firmware image in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\dnld\drvfrm.dlp"</pre> <p>Valid file names have a <code>.dlp</code> extension.</p>
firmware	<p>Indicates to download controller firmware.</p>

## Notes

Before trying to download drive firmware, take these precautions:

- Unless you are using the `online` parameter, stop all I/O activity to the storage array before you download the firmware image. The `download drive firmware` command without the `online` parameter blocks all I/O activity until the download finishes or fails; however, as a precaution, make sure that all I/O activity that might affect the drive is stopped.
- Make sure that the firmware image file is compatible with the drive tray. If you download a firmware image file that is not compatible with the drive tray that you have selected, the drive tray might become unusable.
- Do not make any configuration changes to the storage array while you download drive firmware. Trying to make a configuration change can cause the firmware download to fail and make the selected drives unusable.
- For online drive firmware update requests issued using this command, the controller will remove RAID 0 volume group drives from the list of drives to which new firmware is downloaded. Individual drive return status will be set to `Never Attempted With Reason`.

When you download the firmware to the drives, you must provide the full path and file name to the firmware image that is stored on your system.

You can use `download drive` command to test the firmware on one drive before you install the firmware on all of the drives in a storage array. The download returns one of these statuses:

- Successful
- Unsuccessful With Reason
- Never Attempted With Reason

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

7.60 adds the `drawerID` user input.

8.25 adds the `online` parameter.

## Download storage array drive firmware

The `download storageArray driveFirmware file` command downloads firmware images to all of 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 or Support Admin role.

## Syntax

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

## Parameter

Parameter	Description
file	<p>The file path and the file name of the file that contains the firmware image. Enclose the file path and the file name of the firmware image in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\dnld\sdrvfrm.dlp"</pre> <p>Valid file names have a .dlp extension.</p>

## Notes

When you run this command, you can download more than one firmware image file to the drives in a storage array. The number of firmware image files that you can download depends on the storage array. The storage management software returns an error if you try to download more firmware image files than the storage array can accept.

You can schedule downloads for multiple drives at the same time, including multiple drives in a redundant volume group. Each firmware image file contains information about the drive types on which the firmware image runs. The specified firmware images can be downloaded only to a compatible drive. Use the `download drive firmware` command to download a firmware image to a specific drive.

The `download storageArray driveFirmware` command blocks all I/O activity until either `download try` has been made for each candidate drive or you run the `stop storageArray downloadDriveFirmware` command. When the `download storageArray driveFirmware` command finishes downloading the firmware image, each candidate drive shows the download status for each drive. One of these statuses is returned:

- Successful
- Unsuccessful With Reason
- Never Attempted With Reason

## Minimum firmware level

5.20

# Download storage array firmware/NVSRAM

The `download storageArray firmware` command downloads firmware and, optionally, NVSRAM values for the storage array 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 or Support Admin role.

## Context

If you want to download only NVSRAM values, use the `download storageArray NVSRAM` command.

## Syntax

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

## Parameters

Parameter	Description
NVSRAM	This parameter downloads a file with NVSRAM values when you download a firmware file. Do not include square brackets with this parameter. Include a comma after the <code>firmware</code> parameter.
file	This parameter specifies the file path and the file name that contains the firmware. Enclose the file path and the file name in double quotation marks (" "). For example:  <code>file="C:\Program Files\CLI\dnld\safm.dlp"</code>  Valid file names have a <code>.dlp</code> extension.

Parameter	Description
NVSRAM-filename	<p>This parameter specifies the file path and the file name that contains the NVSRAM values. Enclose the NVSRAM file name in double quotation marks (" "). For example:</p> <pre>file="C:\Program Files\CLI\dnld\safirm.dlp"</pre> <p>Valid file names have a .dlp extension.</p> <p>Include a comma before the file name when you download both firmware and NVSRAM.</p>
downgrade	<div data-bbox="846 688 906 743" style="float: left; margin-right: 10px;"> </div> <p><b>Possible damage to the storage array configuration</b> — Downloading a previous version of the controller firmware or NVSRAM incorrectly can result in damage to the controllers or a loss of data access. Contact technical support before using this parameter.</p> <p>This setting allows a previous version of firmware to be loaded. The default value is <code>FALSE</code>. Set the <code>downgrade</code> parameter to <code>TRUE</code> if you want to download an earlier version of firmware.</p> <div data-bbox="846 1066 906 1121" style="float: left; margin-right: 10px;"> </div> <p>This parameter is not valid when you are only downloading NVSRAM.</p>
activateNow	<p>This setting activates the firmware image and the NVSRAM image. The default value is <code>TRUE</code>. If you set the <code>activateNow</code> parameter to <code>FALSE</code>, you must run the <code>activate storageArray</code> firmware command to activate the firmware and the NVSRAM at a later time.</p> <div data-bbox="846 1444 906 1499" style="float: left; margin-right: 10px;"> </div> <p>This parameter is not valid when you are only downloaded NVSRAM.</p>

Parameter	Description
healthCheckMelOverride	<p>This setting overrides the results of the health check of the major event log (MEL). MEL validation still occurs; it is not bypassed. If the MEL check fails, you can bypass the failure by using this parameter when running the command.</p> <p>Before any download, the controller checks the event log to determine if an event has occurred that might prevent the new controller firmware from successfully downloading. If such an event has occurred, the controller will normally not download new firmware.</p> <p>This parameter forces the controller to download new firmware. The default value is <code>FALSE</code>. Set this value to <code>TRUE</code> if you want to force the controller to download new controller firmware.</p>
healthCheckNeedsAttnOverride	<p>This setting overrides the health check results from specific set of Needs Attention conditions. Needs Attention validation for a specific set of conditions still occurs; it is not bypassed. If the Needs Attention check fails, you can bypass the failure by using this parameter when running the command.</p> <p>Before any download, the controller checks a specific set of Needs Attention conditions to determine if a failure has occurred that might prevent the new controller firmware from successfully downloading. If such an event has occurred, the controller will normally not download new firmware.</p> <p>This parameter forces the controller to download new firmware. The default value is <code>FALSE</code>. Set this value to <code>TRUE</code> if you want to force the controller to download new controller firmware.</p>

## Minimum firmware level

5.00

8.10 adds the `healthCheckMelOverride` parameter.

8.70 adds `healthCheckNeedsAttnOverride` parameter.

## Install storage array external key management certificate

The download `storageArray keyManagementCertificate` command installs the external key management certificates 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.

## Context



This command applies only to external key management.

## Syntax

```
download storageArray keyManagementClientCertificate
certificateType=(client|server) file="filename"
```

## Parameters

Parameter	Description
certificateType	Allows you to specify the certificate file type. Valid choices are <code>client</code> or <code>server</code> .
file	Allows you to specify the client signed certificate or server root/intermediate CA certificate. The file must be in PEM/DER format.

## Examples

```
SMcli -n Array1 -c "download storageArray keyManagementClientCertificate
certificateType=client
file="C:\serverSignedKeyMgmtClientCert.cer";"
```

```
SMcli completed successfully.
```

## Minimum firmware level

8.40

# Download storage array NVSRAM

The `download storageArray NVSRAM` command downloads the NVSRAM values for the storage array 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 or Support Admin role.

## Syntax

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

## Parameters

Parameter	Description
file	<p>The file path and the file name that contains the NVSRAM values. Enclose the NVSRAM file name in double quotation marks ( " "). For example:</p> <pre>file="C:\Program Files\CLI\dnld\afrm.dlp"</pre> <p>Valid file names have a <code>.dlp</code> extension.</p>
healthCheckMelOverride	<p>The setting to override the results of the health check of the major event log (MEL). MEL validation still occurs, it is not bypassed. If the MEL check fails, you can bypass the failure by using this parameter when running the command.</p> <p>Before any download, the controller checks the event log to determine if an event has occurred that might prevent the new NVSRAM from successfully downloading. If such an event has occurred, the controller will normally not download new NVSRAM.</p> <p>This parameter forces the controller to download new NVSRAM. The default value is <code>FALSE</code>. Set this value to <code>TRUE</code> if you want to force the controller to download new NVSRAM.</p>

## Minimum firmware level

6.10

8.10 adds the `healthCheckMelOverride` parameter.

## Download tray configuration settings

The `download tray configurationSettings` command downloads the factory default settings to all of the drive trays in a storage array or to a specific drive tray in a storage array.

### 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

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

### Parameters

Parameter	Description
<code>allTrays</code>	This parameter downloads new firmware to all of the trays in the storage array.
<code>tray</code>	The drive tray that contains the ESM card to which you want to load new firmware. Tray ID values are 0 to 99. Enclose the tray ID value in square brackets ([ ]).
<code>file</code>	The file path and the file name of the file that contains the firmware image. Enclose the file path and the file name of the firmware image in double quotation marks (" "). For example:  <code>file="C:\Program Files\CLI\dnld\trayset.dlp"</code>  Valid file names have a <code>.dlp</code> extension.

## Notes

The `tray` parameter downloads the factory default configuration settings to a specific drive tray. If you need to download the factory default configuration settings to more than one drive tray, but not all drive trays, you must enter this command for each drive tray.

## Minimum firmware level

7.75

## Download environmental card firmware

The `download tray firmware file` command downloads environmental services module (ESM) firmware.

## 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




On duplex systems managed by System Manager (for example, E2800), there is an IOM Auto-Synchronization Service running on the controllers that will automatically sync the IOM firmware with the version contained in the SANtricity OS bundle that is loaded on the controllers. If you do not want the IOM firmware to be reverted to match the version loaded on the controllers, you will need to disable this service. The IOM Auto-Synchronization Service can be suspended using the System Manager or the REST API. When suspending this service, be aware that leaving auto-synchronization enabled ensures the IOM firmware is up to date.

## Syntax

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

## Parameters

Parameter	Description
allTrays	This parameter downloads new firmware to all of the compatible trays in the storage array. The firmware package you select determines which trays are compatible. Incompatible trays are skipped. No error message is displayed about incompatible trays.
tray	<p>The drive tray that contains the ESM card to which you want to load new firmware. Tray ID values are 0 to 99. Enclose the tray ID value in square brackets ([ ]).</p> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;">  <p>There can be no leading zero in the tray ID. For example, if the displayed tray ID is "02," this command requires it to be specified as [2], not [02].</p> </div>
file	<p>The file path and the file name of the file that contains the firmware image. Enclose the file path and the file name of the firmware image in double quotation marks (" "). For example:</p> <pre data-bbox="818 930 1252 993">file="C:\Program Files\CLI\dnld\esmfrm.esm"</pre> <p>Valid file names have an .esm extension.</p>

## Notes

The `tray` parameter downloads new firmware to a specific drive tray. If you need to download new firmware to more than one drive tray, but not all drive trays, you must enter this command for each drive tray.

## Minimum firmware level

5.20

## Copyright information

Copyright © 2024 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

## Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.