Dell Storage Center OS Version 7
Command Utility Reference Guide

Notes, Cautions, and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Contents

About this Guide

This guide describes how to use Storage Center Command Utility to manage your Dell storage infrastructure.

Revision History

Document Number: 680-018-014

Revision	Date	Description
A	May 2016	Initial release for Storage Center OS Version 7

Audience

Storage administrators make up the target audience for this document. The intended reader has a working knowledge of storage and networking concepts.

Related Publications

The following documentation is available for Dell storage components managed using Dell Storage Manager.

Storage Center Documents

- *Storage Center Release Notes*
  Contains information about features and open and resolved issues for a particular product version.
- *Dell Storage Manager Administrator's Guide*
  Contains in-depth feature configuration and usage information.
- *Storage Center Deployment Guide*
  Provides cabling instructions for Storage Center controllers, switches, and enclosures and provides instructions for configuring a new Dell Storage Center.
- *Storage Center Software Update Guide*
  Describes how to update Storage Center software from an earlier version to the current version.
- *Storage Center Update Utility Administrator's Guide*
  Describes how to update Storage Center software on Storage Center controllers. Updating Storage Center software using the Storage Center Update Utility is intended for use only by sites that cannot update Storage Center using the standard update options available through Dell Storage Manager.
- *Storage Center Command Set for Windows PowerShell*
  Provides instructions for getting started with Windows PowerShell cmdlets and scripting objects that interact with the Storage Center via the PowerShell interactive shell, scripts, and hosting applications. Help for individual cmdlets is available online.

Contacting Dell

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services might not be available in your area.

To contact Dell for sales, technical support, or customer service issues, go to www.dell.com/support.

- For customized support, enter your system service tag on the support page and click **Submit**.
- For general support, browse the product list on the support page and select your product.

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Getting Started

The Dell Storage Center Command Utility is a Java application that provides a command-line interface (CLI) for users who want to use commands and write scripts to manage or automate the management of a Dell Storage Center. Command Utility commands are available to perform most common management operations.

The Dell Storage Center Command Utility commands support Storage Center functionality on Microsoft Windows, Linux, Solaris, and AIX platforms. Commands can be executed from a command prompt or included in a script file for batch execution.

Requirements

A system must meet the minimum requirements to use the latest Storage Center Command Utility features.

Requirement	Description
Storage Center	Storage Center 4.1 or later
Software	• Java Runtime Environment (JRE) version 1.6 or later. • Storage Center Command Utility executable (**CompCU.jar**).
Privileges	Storage Center host name, user name, and password are required. Users have access to folders, volumes, and views, depending on their privilege level and the groups to which they belong. • Admin users have read and write access to the entire Storage Center. Only Admin users can create and delete other users and groups. Admin users have access to all users and groups — there is no restriction on their access. • Volume Manager users have access to the folders associated with their assigned user group. They can create volumes in the allowed volume folders and map them to existing servers in the allowed server folders. • Reporter users have read-only access to the folders associated with their assigned user group. NOTE: For script file execution, it is required to have write access to either the directory in which **CompCU.jar** is located or the directory in which the script file is located. For additional information, see the *Dell Storage Manager Administrator's Guide*.

Command Formats

A Storage Center Command Utility command consists of the command name and options. Required options are shown as part of the format statement for the command. Options that are not required are described under the Options section of the command description.

NOTE: Command names and options are case-sensitive. Enter commands as shown.

Command Format Conventions

The following are the formatting conventions for commands run in the Storage Center Command Utility.

Item	Description
braces {}	Surround a set of required options from which you must choose one item.
brackets []	Indicate optional items.
ellipsis...	Indicates that an item can be repeated.
italics	Indicate a variable.
vertical line |	Indicates mutually exclusive options within braces or brackets.

Data Types

The following are the types of data that can be specified in a command run in the Storage Center Command Utility.

Data Type	Description
true | false	Specifies a Boolean value. Most Boolean options accept both true or false and 1 or 0 as valid entries.
filename	Specifies a filename. Filenames that contain the space character must be enclosed by single quote marks. For example: `–file 'my output file'`
integer	Specifies a whole number.
string	Specifies any alphanumeric characters. Strings that contain the spaces must be enclosed by single quote marks. For example: `–name 'replay of volume33'`

CompCU.jar Executable

The Storage Center Command Utility executable file is named **CompCU.jar**.

Format

```
java –jar compcu.jar {logon} [options...options]
```

Options

`–c "`*`command`*`"`

Specifies a Storage Center CU command to execute. CU commands and options must be enclosed by double quotation (") marks. For example:

```
java –jar compcu.jar –c "server"
```

```
–default
```

Using the values specified by the **–host**, **–user**, and **–password** options, sets (or changes) a default for Storage Center logon. Logon parameters are stored in an encrypted file.

```
–defaultname filename
```

Specifies the name of the encrypted file used to store logon information for a specified Storage Center. For example:

To save a default file with a specified name for storagecenter1:

```
java –jar compcu.jar –default –defaultname saved_default_01 –host
storagecenter1 –user admin –password mmm
```

To use the newly created default file:

```
java –jar compcu.jar –defaultname saved_default_01 –c "anycommand"
```

The ability to specify a default file name allows you to specify different default files for each Storage Center you manage.

```
–file filename
```

Specifies a file in which to save output.

```
–h
```

Shows help for command options.

```
–host string
```

Specifies the Storage Center IP Address/Host Name or the Storage Center Management IP.

```
–password string
```

Specifies the password for the logon user. Passwords that contain the space character must be enclosed by double quotation (") marks. For example:

```
–password "my password"
```

```
–s filename
```

Specifies a script file of Storage Center CU commands to execute. Script file names that contain the space character must be enclosed by double (") quotation marks. For example:

```
–s "my script.txt"
```

```
–user string
```

Specifies the Storage Center logon user. Logon user names that contain the space character must be enclosed by double (") quotation marks. For example:

```
–user "my username"
```

```
–verbose
```

Shows debug output.

`–xmloutputfile string`

Specifies the xml file to which return code information is returned. For example:

```
java –jar compcu.jar -xmloutputfile 'command_out_file.xml' -c "anycommand"
```

Logon Options

To execute **CompCU.jar**, the Storage Center logon must be provided. Logon information can be provided in the following ways:

- Use the **–host**, **–user**, and **–password** parameters to specify the logon information.
- Use the **–default** option with the **–host**, **–user**, and **–password** parameters to set a default for the Storage Center logon. For example:

```
java –jar compcu.jar –default –host storagecenter1 –user admin –password mmm
```

- Use the **–defaultname** option with the name of the encrypted file used to store logon information for a specific Storage Center.

Once the default logon is set, you need not specify the logon information. Logon information is automatically supplied from an encrypted file.

Getting Command Help

All Storage Center CU commands provide the **–h** option. Use the **–h** option to display help information for the command and command options.

To get a list of all commands, execute **CompCU.jar** with the **–h** option:

```
java -jar compcu.jar -h
```

The format for **CompCU.jar**, as well as a list of all Storage Center CU commands is displayed.

To get help for an individual command, enter the command with the **–h** option. For example, to get help for the **volume create** command:

```
java -jar compcu.jar -c "volume create -h"
```

The format for the **volume create** command, as well as descriptions of all command options is displayed.

Command Output Options

By default, output from a command is displayed on the console. To save output to a file, use the **–file** option. For example, to save help information to a file named help_text.txt:

```
java –jar compcu.jar -h -file help_text.txt
```

File Options	Description
–csv *filename*	Saves output to a comma-separated file. Output items are delimited by commas.
–txt *filename*	Saves output to a text file. Output is a text version of the console display. That is, output is formatted and truncated exactly as it appears on the console display.

File Options	Description
–xml *filename*	Saves output to an xml file. Output object labels are used as the XML tags. XML is the preferred output method as this file type output has the same or more data than .txt or .csv output.

NOTE: For some commands xml output may differ from what is output to csv and txt output or what is output to the console. For example, xml output for the **volume show** command includes volume mapping information, whereas the csv and txt output does not. The **diskfolder show** command xml output shows Redundancy, but console output does not. The **diskfolder show** command xml output lists Storage Types found on the system after each defined disk folder. Neither cvs nor txt output lists Storage Type.

Exit Codes

When **CompCU.jar** terminates, it issues the following exit codes.

Exit Codes	Descriptions
0	Command executed successfully. Deprecated commands are ignored and return an exit code of 0.
non 0	Command terminated with an error. See the console (or output file) for a description of the error. If a Storage Center CU command terminates with an error after creating a Storage Center object, the object is not deleted when the command terminates.

Increasing Available Memory

By default, the Java Application Launcher assigns 64 MB to the memory allocation pool. If an out-of-memory exception occurs while executing a **CompCU.jar** command, use the **–Xms** *n* and **–Xmx** *n* arguments on the Java Application Launcher to increase the amount of available memory. For example:

```
java -Xms128m -Xmx1024m -jar compcu.jar -c "replay"
```

NOTE: The value must be a multiple of 1024 that is greater than 2 MB. Use k for kilobytes or m for megabytes. For complete information, see the Java Runtime Environment (JRE) documentation.

Executing CompCU Commands

The following sections provide **CompCU.jar** command examples.

Executing a Single Command

To execute a single command, use the **–c** option. Enclose the command and all command options with double quote marks ("). For example, to execute the volume command, enter the following:

```
java -jar compcu.jar -host storagecenter1 -user admin -password mmm -c "volume"
```

To execute the **volume** command and save output to a text file named **my output**:

```
java -jar compcu.jar -host storagecenter1 -user admin -password mmm -c "volume -
txt 'my output'"
```

Single Command Examples

The following samples are provided to illustrate basic command syntax: Create a server running Windows 2008 by specifying a server name and multiple HBA names:

```
server create -name 'server 1' -wwn 'hba0,hba1,hba2' -os 'windows 2008'
```

Create a volume with a specific storage profile:

```
volume create -name 'volume 1' -size 32g -storageprofile 'Low Priority'
```

Map the volume to a specific controller on 'server 1':

```
volume map -name 'volume 1' -server 'server 1' -controller 'leader'
```

Save information about 'server 1' to a txt file:

```
server show -name 'server 1' -txt txtfile.txt
```

Script Examples

Follow these guidelines when creating script files:

- Include one command per line.
- Use the pound sign (#) as the first character in a line to denote a comment.

To execute a script, use the **–s** option. For example, to execute a script named **my script.txt**:

```
java -jar compcu.jar -host storagecenter1 -user admin -password mmm -s "my
script.txt"
```

The Command Utility first verifies the command syntax for all commands in the script file. If there are no syntax errors, Storage Center CU executes the commands one-by-one. If an error is encountered (either in the initial syntax parsing or during a command execution), script execution is terminated.

```
java –jar compcu.jar –default -defaultname saved_default_01 -host
storagecenter1 -user admin -password mmm
```

The following samples are provided to illustrate basic script syntax:

```
# Sample Script 1
# Create a Volume
volume create -name 'new volume' -size 8g
# Output all volume information to an xml file
volume -xml 'volumes.xml'
# End of Sample Script 1
```

```
# Sample Script 2
# Create a server named ser1 with two HBAs
# Create four volumes and map the volumes to server 'ser1'
volume create -name 'vol 1' -size 32g -server 'ser1' -folder 'ser1 vols'
volume create -name 'vol 2' -size 32g -server 'ser1' -folder 'ser1 vols'
volume create -name 'vol 3' -size 32g -server 'ser1' -folder 'ser1 vols' -
storageprofile 'Low Priority'
volume create -name 'vol 4' -size 32g -server 'ser1' -folder 'ser1 vols'
# End of Sample Script 2
```

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Command Reference

The commands featured in this section perform common management operations from the Dell Storage Center Command Utility. Each command consists of the command name and options. This section lists all of the commands available for use in the Command Utility and their options.

alert acknowledge

Description

Marks a Storage Center alert as having been acknowledged. Acknowledgment indicates to the Storage Center that you have read the alert message and are aware of the problem. The following alert types can be acknowledged:

- **Alert**: This type of alert represents current issues on the Storage Center that are being actively monitored. These alerts clear automatically when the situation that caused them is corrected. Once cleared, a record of the alert can be found under History alerts.
- **History**: This type of alert allows you to keep a record of past conditions that have occurred on the Storage Center. History alerts can be acknowledged to indicate that you have read the alert and are aware of the problem. The process of acknowledging a History alert causes the alert to be removed from the Storage Center. Once the alert is removed, it cannot be recovered.
- **Indication**: Indication alerts are for informational purposes only. They show conditions on the Storage Center that may require user intervention. The process of acknowledging an Indication alert causes the alert to be removed from the Storage Center. Once the alert is removed, it cannot be recovered.
- **Maintenance**: Maintenance alerts can occur when the Storage Center Operation Mode is set to Install, Maintenance, or Pre-Production. This category exists to isolate these alerts from alerts that occur during normal operation. Maintenance alerts can be acknowledged to indicate to the Storage Center that you have read the alert and are aware of the problem.

Format

```
alert acknowledge –controller integer –index integer {options}
```

Options

`–controller integer`

Specifies the index of the controller for the alert.

`–h`

Shows help for command options.

`–index integer`

Specifies the index of the alert.

Example

Acknowledge a maintenance alert with an index of 20 on a controller with an index of 2:

```
alert acknowledge -controller 2 -index 20
```

alert show

Description

Returns information for alerts that were generated on a Storage Center. Output depends on the filter options specified in the command.

Format

```
alert show {options}
```

Options

`-acknowledged` *string*

Specifies an acknowledgment status by which to filter the display.

`-alert_type` *string*

Specifies the alert type by which to filter the display. Available options are:

- **Alert**: This type of alert represents current issues on the Storage Center that are being actively monitored. These alerts clear automatically when the situation that caused them is corrected. Once cleared, a record of the alert can be found under History alerts.
- **History**: This type of alert allows you to keep a record of past conditions that have occurred on the Storage Center. History alerts can be acknowledged to indicate that you have read the alert and are aware of the problem. The process of acknowledging a History alert causes the alert to be removed from the Storage Center. Once the alert is removed, it cannot be recovered.
- **Indication**: Indication alerts are for informational purposes only. They show conditions on the Storage Center that may require user intervention. The process of acknowledging an Indication alert causes the alert to be removed from the Storage Center. Once the alert is removed, it cannot be recovered.
- **Maintenance**: Maintenance alerts can occur when the Storage Center Operation Mode is set to Install, Maintenance, or Pre-Production. This category exists to isolate these alerts from alerts that occur during normal operation. Maintenance alerts can be acknowledged to indicate to the Storage Center that you have read the alert and are aware of the problem.

`-category` *string*

Specifies the alert category by which to filter the display. Available options are:

- **Connectivity**: Connectivity category indicates that an enclosure or an IO card is experiencing a connectivity problem.
- **Disk**: Disk category indicates that a disk or server is experiencing a problem.
- **Hardware**: Hardware category indicates that a hardware component, such as a fan or a sensor, is experiencing a problem.
- **Storage**: Storage category indicates that the Storage Center is experiencing a problem.
- **System**: System category indicates that a component within the controller is experiencing a problem.

`-controller` *string*

Specifies the index of the controller by which to filter the display.

`-count string`

Specifies the count by which to filter the display. The "count" shows the number of times the alert has been generated.

`-csv filename`

Specifies a csv file in which to save output.

`-date_cleared string`

Specifies a cleared date and time by which to filter the display.

`-date_created string`

Specifies a creation date and time by which to filter the display.

`-h`

Shows help for command options.

`-index string`

Specifies the alert index by which to filter the display.

`-message string`

Specifies an alert message by which to filter the display.

`-object_name string`

Specifies an object name by which to filter the display. This is the name of the object to which the alert pertains.

`-reference_number string`

Specifies a reference number by which to filter the display. The reference number is used when communicating with Dell Technical Support.

`-status string`

Specifies an alert status level by which to filter the display. Available options are:

- **Complete**: Indicates that an operation on the Storage Center has completed.
- **Critical**: Indicates that an item on the Storage Center is in a critical state and may be nearing failure.
- **Degraded**: Indicates that an item on the Storage Center is currently operating in a degraded mode. Items in this condition may operate in degraded mode indefinitely, but are not functioning to their full capability.
- **Deleting**: Indicates a transitory state that indicates the alert is in the process of being deleted either because the underlying condition has been corrected or the user has acknowledged the alert.
- **Down**: Indicates that an item on the Storage Center is down and not currently operational.
- **Emergency**: Indicates that an item on the Storage Center requires immediate attention to remain operational.
- **Informational**: Provides information regarding some operation that is occurring or has occurred on the Storage Center.

- **OK**: Indicates the clearing of a standing condition that caused a prior Down, Critical, Emergency, or Unavailable alert.
- **Unavailable**: Indicates that an item on the Storage Center that is expected to be present cannot currently be found for use.

`-txt filename`

Specifies a txt file in which to save output.

`-xml filename`

Specifies an xml file in which to save output.

Output

The following alert information is output to the console in table format.

Output	Description
Controller	Shows the index number of the controller of the alert.
Index	Shows the index of the alert.
Alert_Type	Shows the alert type for the alert.
Message	Shows the message contained in the alert.
Status	Shows the status level of the alert.
Date_Created	Shows the date and time an alert was created.
Object_Name	Shows the name of the object to which the alert pertains.
Category	Shows the category for the alert.
Count	Shows the number of times the alert has been generated.
Acknowledged	Shows whether the alert has been acknowledged.
Date_Cleared	Shows the date and time an alert was cleared.
Reference_Number	Shows the reference number for the alert.

Examples

Show all alerts with a status of "down":

```
alert show -status down
```

Show all history alerts and save results in a text file:

```
alert show -txt alert_history.txt
```

Show all active alerts:

```
alert show -alert_type alert
```

cache modify

Description

Modifies Storage Center cache.

Format

```
cache modify {options}
```

Options

```
-h
```

Shows help for command options.

```
-readcache {true|false}
```

Enables or disables global read cache. Specify true (or 1) to enable global read cache or false (or 0) to disable global read cache.

```
-writecache {true|false}
```

Enables or disables global write cache. Specify true (or 1) to enable global write cache or false (or 0) to disable global write cache.

Example

Enable global write cache:

```
cache modify -writecache true
```

cache show

Description

Shows Storage Center cache settings. Output depends on the filter options specified in the command.

Format

```
cache show {options}
```

Options

```
-csv filename
```

Specifies a csv file in which to save output.

```
-h
```

Shows help for command options.

```
-readcache {true|false}
```

Specifies a readcache setting by which to filter the display.

`-txt filename`

Specifies a txt file in which to save output.

`-writecache {true|false}`

Specifies the writecache setting by which to filter the display.

`-xml filename`

Specifies an xml file in which to save output.

Output

The following Storage Center cache information is output to the console in table format.

Output	Description
Read_Cache	Shows global read cache setting: true for on or false for off.
Write_Cache	Shows global write cache setting: true for on or false for off.

Examples

Show all Storage Center cache information and save results in a text file and an xml file:

```
cache show -txt cache_info.txt -xml cach_info.xml
```

Show global cache read and write settings:

```
cache show
```

cmm copy

Description

Creates a new CMM copy operation on the Storage Center. Copy/Mirror/Migrate (CMM) is a Storage Center feature that enables volumes to be migrated between different disk types and RAID levels.

Format

`cmm copy -sourcevolumeindex integer -destvolumeindex integer {options}`

Options

`-copyhistory {true|false}`

Specifies whether the Replay history of the source volume is copied to the destination volume. If set to false, only current active data is copied.

`-destvolumeindex integer`

Specifies the index of the destination volume for the copy operation.

`-h`

Shows help for command options.

`-priority` *string*

Specifies the priority of a CMM operation. Available options are:

- High
- Medium
- Low

`-sourcevolumeindex` *integer*

Specifies the index of the source volume for the copy operation.

Example

Copy current active data from a source volume with an index of 42 to a destination volume with an index of 56:

```
cmm copy -sourcevolumeindex 42 -destvolumeindex 56
```

cmm delete

Description

Deletes a CMM operation from the Storage Center by aborting the operation. Copy/Mirror/Migrate (CMM) is a Storage Center feature that enables volumes to be migrated between different disk types and RAID levels.

Format

`cmm delete -index` *integer* `{options}`

Options

`-h`

Shows help for command options.

`-index` *integer*

Specifies the index of the CMM operation to abort.

Example

Delete a CMM operation with an index of 4:

```
cmm delete -index 4
```

cmm migrate

Description

Creates a new CMM migrate operation on the Storage Center. Copy/Mirror/Migrate (CMM) is a Storage Center feature that enables volumes to be migrated between different disk types and RAID levels.

Format

```
cmm migrate –sourcevolumeindex integer –destvolumeindex integer {options}
```

Options

`–copyhistory {true|false}`

Specifies whether the Replay history of the source volume is copied to the destination volume. If set to false, only current active data is copied.

`–deletesource {true|false}`

Specifies whether to delete the source volume after migration.

`–destvolumeindex integer`

Specifies the index of the destination volume for the migrate operation.

`–h`

Shows help for command options.

`–priority string`

Specifies the priority of a CMM operation. Available options are:

- High
- Medium
- Low

`–reversemirror {true|false}`

Specifies whether to mirror back to the source volume upon completion of a migration.

`–sourcevolumeindex integer`

Specifies the index of the source volume for the migrate operation.

Examples

Migrate a source volume with an index of 42 to a destination volume with an index of 56 and mirror back to the source volume:

```
cmm migrate -sourcevolumeindex 42 -destvolumeindex 56 -reversemirror true
```

Migrate a source volume with an index of 5 to a destination volume with an index of 30 and copy Replay history in addition to current active data:

```
cmm migrate -sourcevolumeindex 5 -destvolumeindex 30 -copyhistory true
```

cmm mirror

Description

Creates a new CMM mirror operation on the Storage Center to mirror all data from a source volume to a destination volume. Copy/Mirror/Migrate (CMM) is a Storage Center feature that enables volumes to be migrated between different disk types and RAID levels.

Format

```
cmm mirror -sourcevolumeindex integer -destvolumeindex integer {options}
```

```
-copyhistory {true|false}
```

Specifies whether the Replay history of the source volume is copied to the destination volume.

```
-destvolumeindex integer
```

Specifies the index of the destination volume for the CMM operation.

```
-h
```

Shows help for command options.

```
-priority string
```

Specifies the priority of a CMM operation. Available options are:

- High
- Medium
- Low

```
-sourcevolumeindex integer
```

Specifies the index of the source volume for the CMM operation.

Examples

Mirror a source volume with an index of 42 to a destination volume with an index of 56:

```
cmm mirror -sourcevolumeindex 42 -destvolumeindex 56
```

Mirror a source volume with an index of 42 to a destination volume with an index of 56 and specify High priority:

```
cmm mirror -sourcevolumeindex 42 -destvolumeindex 56 -priority high
```

cmm modify

Description

Modifies the priority of a CMM operation. Copy/Mirror/Migrate (CMM) is a Storage Center feature that enables volumes to be migrated between different disk types and RAID levels.

Format

```
cmm modify –index integer –priority integer | string {options}
```

Options

`–h`

Shows help for command options.

`–index integer`

Specifies the index of a CMM operation.

`–priority string`

Specifies the priority of a CMM operation. Available options are:

- High
- Medium
- Low

Example

Modify the priority level of a CMM operation with an index of 77:

```
cmm modify -index 77 -priority high
```

cmm show

Description

Shows the attributes of CMM operations. Copy/Mirror/Migrate (CMM) is a Storage Center feature that enables volumes to be migrated between different disk types and RAID levels. Output depends on the filter options specified in the command.

Format

```
cmm show {options}
```

Options

`–copy_history string`

Specifies a copy history value for a CMM operation by which to filter the display. Available options are true and false. If set to false, only current active data is copied.

`–csv` *`filename`*

Specifies a csv file in which to save output.

`–current_position` *`string`*

Specifies the current position of a CMM operation by which to filter the display. Current position is defined as the number of blocks that have already been copied.

`–current_replay` *`string`*

Specifies a CMM current Replay being copied by which to filter the display.

`–delete_source` *`string`*

For CMM migrate operations, specifies the delete source value of the CMM operation by which to filter the display.

`–destination_volume_index` *`string`*

Specifies the index of a CMM destination volume by which to filter the display.

`–destination_volume_name` *`string`*

Specifies the name of a destination volume by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`–h`

Shows help for command options.

`–index` *`string`*

Specifies the index of a CMM operation by which to filter the display.

`–priority` *`string`*

Specifies the priority of the CMM operation by which to filter the display. Available options are:

- High
- Medium
- Low

`–reverse_mirror` *`string`*

For CMM migrate operations, specifies the reverse mirror value of the CMM by which to filter the display.

`–source_volume_index` *`string`*

Specifies the index of a CMM source volume by which to filter the display.

`–source_volume_name` *`string`*

Specifies the name of a CMM destination volume by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`–state` *`string`*

Specifies the state of a CMM operation by which to filter the display. This is the Replication object state. Available options are:

- Down
- Running
- Synced (If the state is synced, the replication is up to date.)

`-total_copy_size` *string*

Specifies the total size of a CMM copy operation by which to filter the display.

`-txt` *filename*

Specifies a txt file in which to save output.

`-type` *string*

Specifies the type of CMM operation by which to filer the display. Available options are:

- Copy
- Migrate
- Mirror

`-xml` *filename*

Specifies an xml file in which to save output.

Output

The following information is output to the console in table format.

Output	Description
Index	Shows the index of the CMM operation.
Type	Shows the type of the CMM operation.
Source_Vol	Shows the index of the source volume.
Source_Volume_Name	Shows the name of the source volume.
Destination_Vol	Shows the index of the destination volume.
Destination_Volume_Name	Shows the name of the destination volume.
State	Shows the state of the CMM operation.
Current_Position	Shows the current position of the CMM operation.
Total_Copy_Size	Shows total copy size of the CMM operation.
Priority	Shows the priority of the CMM operation.
Copy_History	Shows the copy history value for the CMM operation.
Current_Replay	Shows the current Replay being copied by the CMM operation.
Reverse_Mirror	Shows the reverse mirror value of a CMM migrate operation.
Delete_Source	Shows the delete source value of a CMM migrate operation.

consistencygroup show

Description

Shows the groups of Replays that are created with and associated with a Consistency Group. Output depends on the filter options specified in the command.

Format

```
consistencygroup show {options}
```

Options

`–csv` *filename*

Specifies a csv file in which to save output.

`–expectedgroupsize` *string*

Shows the expected number of Replays in a Consistency Group.

`–expire` *string*

Specifies a date/time expiration stamp for Replays in a Consistency Group by which to filter the display.

`–freeze` *string*

Specifies a date/time freeze stamp for Replays in a Consistency Group by which to filter the display.

`–groupsize` *integer*

Specifies the number of Replays in a Consistency Group by which to filter the display.

`–h`

Shows help for command options.

`–index` *string*

Specifies the index of groups of Replays created for a Consistency Group by which to filter the display.

`–name` *string*

Specifies the Replay name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`–txt` *filename*

Specifies a txt file in which to save output.

`–writeholdduration` *string*

Shows how long the writes where held when creating the Consistency Group.

`–xml` *filename*

Specifies an xml file in which to save output.

Output

The following information is output to the console in table format.

Output	Description
Index	Shows index of the Consistency Group.
Freeze	Shows time at which the Replay was taken.
Expire	Shows Replay expiration time.
ExpectedGroupSize	Shows expected number of Replays in a Consistency Group.
Name	Shows names of Replays in a Consistency Group.
WriteHoldDuration	Shows how long the writes where held when creating the Consistency Group.

controller show

Description

Shows configuration information for each controller present. Output depends on the filter options specified in the command.

Format

```
controller show {options}
```

Options

`–controllerindex` *`string`*

Specifies a controller index by which to filter the display.

`–controlleripaddress` *`string`*

Specifies the IP address for the controller IP port by which to filter the display.

`–controlleripgateway` *`string`*

Specifies the gateway address for the controller IP port by which to filter the display.

`–controlleripmask` *`string`*

Specifies the subnet mask for the controller IP port by which to filter the display.

`–csv` *`filename`*

Specifies a csv file in which to save output.

`–domainname` *`string`*

Specifies the domain name by which to filter the display.

`–h`

Shows help for command options.

`-ipcipaddress` *string*

Specifies the IP address for the controller IPCport by which to filter the display.

`-ipcipgateway` *string*

Specifies the gateway address for the controller IPCport by which to filter the display.

`-ipcipmask` *string*

Specifies the subnet mask for controller IPCport by which to filter the display.

`-lastboottime` *string*

Specifies a last boot time (date and time) for the controller by which to filter the display.

`-leader` *string*

Specifies whether the controller is the current leader. Available options are:

- **Yes** (leader)
- **No** (peer)

`-localportcondition` *string*

Specifies a Local Ports Balanced status by which to filter the display. Available options are:

- Balanced
- Unbalanced

`-name` *string*

Specifies a controller name by which to filter the display.

`-primarydns` *string*

Specifies the IP address of the primary Domain Name Server (DNS) by which to filter the display.

`-status` *string*

Specifies a a controller status by which to filter the display. Available options are:

- Down
- Up

`-txt` *filename*

Specifies a txt file in which to save output.

`-version` *string*

Specifies four-part controller/system software version by which to filter the display.

`-xml` *filename*

Specifies an xml file in which to save output.

Output

The following information is output to the console in table format.

Output	Description
ControllerIndex	Shows the controller index.
Name	Shows the controller name.
Leader	Shows controller status as leader.
Status	Shows controller operating status.
LocalPortCondition	Shows local port condition.
Version	Shows controller software version.
DomainName	Shows controller domain name.
PrimaryDNS	Shows controller primary DNS.
ControllerIPAddress	Shows the controller IP address.
ControllerIPGateway	Shows the controller IP gateway address.
ControllerIPMask	Shows the controller IP subnet mask.
IpcIPAddress	Shows the controller IPC IP address.
IpcIPGateway	Shows the controller IPC IP gateway.
IpcIPMask	Shows the controller IPC IP subnet mask.
LastBootTime	Shows the date and time of the last reboot.

diskfolder show

Description

Shows Storage Center disk folder information. Output depends on the filter options specified in the command.

Format

```
diskfolder show {options}
```

Options

`-allocatedspace` *string*

Specifies the allocated space for the disk folder by storage types by which to filter the display.

`-allocatedspaceblocks` *string*

Specifies the allocated space for each storage type in blocks by which to filter the display.

`-availablespaceblocks` *string*

Specifies the amount of available space for each storage type in blocks by which to filter the display.

`-csv filename`

Specifies a csv file in which to save output.

`-h`

Shows help for command options.

`-index`

Specifies diskfolder index by which to filter the display.

`-name string`

Specifies the name of the disk folder by which to filter the display. If no diskfolder name is specified, information for all disk folders is displayed. Names that contain spaces must be enclosed in single quotes.

`-nummanaged string`

Specifies the number of managed disks in the disk folder by which to filter the display.

`-numspare string`

Specifies the number of spare disks in the disk folder by which to filter the display.

`-numstoragetype string`

Specifies the number of storage types using the disk folder by which to filter the display.

`-totalavailablespace string`

Specifies the total available space for the disk folder by which to filter the display.

`-txt filename`

Specifies a txt file in which to save output.

`-xml filename`

Specifies an xml file in which to save output.

Output

The followingStorage Center disk folder information is output to the console in table format.

Output	Description
Index	Shows the index of the disk folder.
Name	Shows the name of the disk folder.
Num Managed	Shows number of managed disks in the disk folder.
Num Spare	Shows number of spare disks in the disk folder.
Num Storage Types	Shows number of storage types used by the disk folder.
TotalAvailableSpace	Shows total available space for the disk folder.
AvailableSpaceBlocks	Shows total available space for the disk folder in blocks.

Output	Description
AllocatedSpace	Shows total allocated space for the disk folder.
AllocatedSpaceBlocks	Shows total space available for the disk folder in blocks.

mapping show

Description

Shows mapping information for the Storage Center. Output depends on the filter options specified in the command.

Format

```
mapping show {options}
```

Options

`–csv` *filename*

Specifies a csv file in which to save output.

`–deviceid` *string*

Specifies a volume device ID by which to filter the display.

`–h`

Shows help for command options.

`–localport` *string*

Specifies a world wide name (WWN) of the local port by which to filter the display. (The **–localport** option is deprecated on Storage Center 5.0 and later.)

`–lun` *integer*

Specifies a logical unit number (LUN) by which to filter the display.

`–remoteport` *string*

Specifies the world wide name (WWN) of the remote port by which to filter the display.

`–serialnumber` *string*

Specifies the volume serial number by which to filter the display. (Available only when running on operating systems that expose serial numbers to the user.)

`–server` *string*

Specifies a server name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`–serverindex` *string*

Specifies the index of the server by which to filter the display.

`-txt filename`

Specifies a txt file in which to save output.

`-volume string`

Specifies a volume name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`-volumeindex string`

Specifies a volume index by which to filter the display.

`-xml filename`

Specifies an xml file in which to save output.

Output

For each Storage Center server, the following volume mapping information is output to the console in table format.

Output	Description
Server Index	Shows server index.
Server	Shows server name.
Volume Index	Shows volume index.
Volume	Shows the volume name.
DeviceID	Shows the volume device ID.
SerialNumber	Shows the volume serial number.
LocalPort	Shows the world wide name (WWN) of the local port to which the volume is mapped.
RemotePort	Shows the world wide name (WWN) of the remote port to which the volume is mapped.
LUN	Shows the logical unit number (LUN) for the mapped volume.

os show

Description

Shows server operating system information. Output depends on the filter options specified in the command.

Format

```
os show {options}
```

Options

`-csv filename`

Specifies a csv file in which to save output.

`-h`

Shows help for command options.

`-index string`

Specifies the operating system index by which to filter the display.

`-multipath string`

Specifies the operating system(s) that support multiple paths by which to filter the display.

`-name string`

Specifies the operating system name by which to filter the display.

`-product string`

Specifies the operating system product by which to filter the display.

`-txt filename`

Specifies a txt file in which to save output.

`-version string`

Specifies the operating system version by which to filter the display.

`-xml filename`

Specifies an xml file in which to save output.

Output

The following Storage Center operating system information is output to the console in table format.

Output	Description
Index	Shows operating system index.
Name	Shows operating system name.
Product	Shows operating system product name.
Version	Shows operating system version.
Multipath	Shows if the operating system supports multipath.

replay checkviews

Description

Checks for and deletes expired views:

- If the **–purge** option for an expired view is not set, moves the view to the recycle bin.
- If the **–purge** option for an expired view is set, permanently deletes the view.

See replay create for more information about the **–purge** option.

The **replay checkviews** command requires write access to the directory in which the views are located.

NOTE: A Replay is a Storage Center point-in-time copy that allows a site to restore data from a specific point in time. When planning Replay schedules and expiration settings, take care to balance restore requirements with the amount of resources consumed by unexpired Replays. Unexpired Replays can consume a disproportionate amount of Storage Center resources.

Format

```
replay checkviews {options}
```

Option

`–h`

Shows help for command options.

replay create

Description

Creates a Replay of a volume. In addition, optionally creates and maps a view volume from the Replay.

NOTE: A Replay is a Storage Center point-in-time copy that allows a site to restore data from a specific point in time. When planning Replay schedules and expiration settings, take care to balance restore requirements with the amount of resources consumed by unexpired Replays. Unexpired Replays can consume a disproportionate amount of Storage Center resources.

Format

```
replay create {-volumeindex <int> | -deviceid <string> | -serialnumber <string>
| -volume <string>}
```

Options

`–deviceid` *`string`*

Specifies the volume device ID.

`–expire` *`integer`*

Specifies the number of minutes after which the Replay expires. Specify 0 to indicate no expiration. The default is 0.

`–folder` *`string`*

Specifies a folder for the volume.

`–folderindex integer`

Specifies a folder index for the volume.

`–h`

Shows help for command options.

`–localport string`

Sets the world wide name (WWN) of the local port to which the volume is mapped. (Deprecated. The **–localport** option is ignored if the Storage Center version is 4.x and is invalid if the Storage Center version is 5.0 or later.)

`–lun integer`

For the **–view** option only. Specifies the logical unit number (LUN) to which to map the view volume. If not specified, the first available LUN is used.

`–move`

For the **–view** option only. If the view volume created by the **–view** option already exists, takes a Replay of the existing view volume before making the new view volume the active view for the created Replay. Changes to the existing view volume are retained in the Replay for the existing view volume. If the view volume created by the **–view** option already exists and you omit the **–move** option, the command terminates with an error.

`–name string`

Specifies the Replay name. Names that contain spaces must be enclosed in single quotes.

`–nomovereplay`

For the **–move** options only. If the view volume created by the **–view** option already exists, makes the new view volume the active view for the created Replay without first taking a Replay of the existing view volume. Changes to the existing view volume are not retained.

`–purge`

Indicates that expired views should be permanently deleted. If omitted, expired views are moved to the recycle bin.

`–readonly`

Makes the Replay read only.

`–remoteport`

Sets the world wide name (WWN) of the remote port to which the volume is mapped.

`–serialnumber string`

Specifies the volume serial number. (Available only when running on operating systems that expose serial numbers to the user.)

`–server integer`

For the **–view** option only. Specifies the server to which to map the view volume.

`–singlepath`

Indicates that only a single port can be used for mapping. If omitted, all local ports are used for mapping. Use this option with the **–localport** and **–remoteport** options to set the single port to use. (The **–localport** option is deprecated on Storage Center 5.0 and later.)

`–view string`

Specifies the name of a view volume to create from the Replay. Use the **–server** option to map the view volume. Use the **–move** or **–nomovereplay** option to determine actions for an existing view volume of the same name. Names that contain spaces must be enclosed in single quotes.

`–viewexpire integer`

Specifies the number of minutes at which to unmap and delete a view volume. Run the **replay checkviews** command to check for and delete expired views. See replay checkviews.

`–volume string`

Specifies the volume on which the Replay is located.

`–volumeindex integer`

Specifies the index of the volume on which the Replay is located.

Examples

Create an unnamed Replay without an expire time:

```
replay create -volume 'volume 1'
```

```
replay create -deviceid 6000d3100000c90000000000000000cb
```

Create a named Replay:

```
replay create -volume 'volume 1' -name 'replay cu'
```

Create a named Replay with an expiration time:

```
replay create -volume 'volume 1' -name 'replay cu' -expire 30
```

Create an unnamed Replay, a view volume, and map the view volume to a server:

```
replay create -volume 'volume 1' -view view1 -server 'server 1'
```

Create a Replay, create a read only view volume, and map the view volume to a specific server with a LUN:

```
replay create -volume 'volume 1' -view 'view1' -server 'server 1' -lun 200 -
readonly
```

Create a Replay of an existing view volume:

```
replay create -volume 'Volume 1' -view view1 -server 'server 1' -move
```

Create a Replay and corresponding view volume, and overwrite an existing view volume with the new view volume:

```
replay create -volume 'volume 1' -view view1 -server 'server 1' -move -
nomovereplay
```

Create a Replay, create a view volume from the Replay, map the view volume to a server, and specify an expiration time of 5 minutes:

```
replay create -volume 'volume 1' -view view1 -server 'server 1' -viewexpire 5
```

Create a Replay, create and map a view volume, and use the –purge option to permanently delete the view volume when it expires.

```
replay create -volume 'volume 1' -view view1 -server' server 1' -viewexpire 10 -
purge
```

See replay checkviews for information on using the **replay checkviews** command to move expired volume views to the recycle bin or to permanently delete expired volume views.

replay createview

Description

Creates a view volume on an existing Replay and optionally maps the new view volume to a server.

NOTE: A Replay is a Storage Center point-in-time copy that allows a site to restore data from a specific point in time. When planning Replay schedules and expiration settings, take care to balance restore requirements with the amount of resources consumed by unexpired Replays. Unexpired Replays can consume a disproportionate amount of Storage Center resources.

Format

```
replay createview –index <int> | ({–name <string> | –last} {–volumeindex <int>
| –volume <string> | –deviceid <string> | –serialnumber <string>})
```

Options

`–boot`

If present, designates the view volume on a Replay as a boot volume. The **–boot** and **–lun** options are mutually exclusive. Specifying the **–boot** option maps the view volume to lun0. If neither **–boot** nor **–lun** option is specified, the next available LUN is automatically assigned (Storage Center 5.0 and later).

`–deviceid` *`string`*

Specifies the volume device ID.

`–folder` *`string`*

Specifies a folder for the volume.

`–folderindex` *`integer`*

Specifies a folder by index for the volume.

`–h`

Shows help for command options.

`–index` *`string`*

Specifies the Replay index. If the index is specified, no other volume or Replay identifiers are required.

`–last`

Creates a view from the last frozen Replay.

`–localport` *`string`*

Sets the world wide name (WWN) of the local port to which the volume is mapped. (Deprecated. The **–localport** option is ignored if the Storage Center version is 4.x and is invalid if the Storage Center version is 5.0 or later.)

`–lun` *`integer`*

Specifies the logical unit number (LUN) for the mapped volume. The **–boot** and **–lun** options are mutually exclusive. If neither **–boot** nor **–lun** option is specified, the next available LUN is automatically assigned (Storage Center 5.0 and later).Dell recommends that you allow LUNs to be automatically assigned to avoid issues with operating systems that require sequential LUN ordering.

`–move`

For the **–view** option only. If the view volume created by the **–view** option already exists, takes a Replay of the existing view volume before making the new view volume the active view for the created Replay. Changes to the existing view volume are retained in the Replay for the existing view volume. If the view volume created by the **–view** option already exists and you omit the **–move** option, the command terminates with an error.

`–name` *`string`*

Specifies the Replay name. Names that contain spaces must be enclosed in single quotes.

`–nomovereplay`

For the **–move** options only. If the view volume created by the **–view** option already exists, makes the new view volume the active view for the created Replay without first taking a Replay of the existing view volume. Changes to the existing view volume are not retained.

`–purge`

Indicates that expired view volumes should be permanently deleted by the **replay checkviews** command. If omitted, expired views are moved to the recycle bin by the **replay checkviews** command. See replay checkviews.

`–readonly`

Makes the Replay read only.

`–remoteport` *`string`*

Sets the world wide name (WWN) of the remote port to which the volume is mapped.

`–serialnumber` *`string`*

Specifies the volume serial number. (Available only when running on operating systems that expose serial numbers to the user.)

`–server` *`string`*

Specifies the server to which to map the volume or view volume.

`–singlepath`

Indicates that only a single port can be used for mapping. If omitted, all local ports are used for mapping. Use this option with the **–localport** and **–remoteport** options to set the single port to use. (The **–localport** option is deprecated on Storage Center 5.0 and later.)

`–view` *`string`*

Specifies the name of the view volume to create. Names that contain spaces must be enclosed in single quotes.

`–viewexpire` *`integer`*

Specifies the number of minutes to wait before unmapping and deleting an expired view.

`–volume` *`string`*

Specifies the volume on which the Replay is located.

`–volumeindex` *`integer`*

Specifies the volume index on which the Replay is located.

Examples

Create a view volume from a Replay

```
replay createview -volume 'volume 1' -name 'replay cu' -view view1
```

```
replay createview -deviceid 6000d3100000c90000000000000000c7 -name 'replay cu' -
view 'view1'
```

Create a view volume from the last Replay:

```
replay createview -volume 'volume 1' -name 'replay cu' -view view1
```

Create and map a view volume:

```
replay createview -volume 'volume 1' -name 'replay cu' -view view1 -server
'server 1'
```

Create a view volume from a Replay, map the view volume to a server assigning a LUN, and the make the view volume read only:

```
replay createview -volume 'volume 1' -view view1 -server done'server 1' -lun
200 -readonly
```

Create a view volume and map it to a server with a view expiration time of five minutes:

```
replay createview -volume 'volume 1' -view view1- server 'server 1' -viewexpire
5 -last
```

Create a view volume with an expiration time, map the view volume to a server, and set the purge option:

```
replay createview -volume 'volume 1' -view view1 | -server 'server 1' -
viewexpire -purge -last
```

Move a view volume (if it exists) to the -name Replay. Creates a Replay on 'view1' before moving.

```
replay createview -volume 'volume 1' -view view1 -name 'next replay from cu' -
move
```

Move a view volume (if it exists) to the -name Replay. Does not create a Replay on 'view1' before moving.

```
replay createview -volume 'volume 1' -view view1 -name 'next replay from cu' -
move -nomovereplay
```

replay delete

Description

Deletes a Replay.

NOTE: A Replay is a Storage Center point-in-time copy that allows a site to restore data from a specific point in time. When planning Replay schedules and expiration settings, take care to balance restore requirements with the amount of resources consumed by unexpired Replays. Unexpired Replays can consume a disproportionate amount of Storage Center resources.

Format

```
replay delete –index <int> | ({–name <string> | –last} {–volumeindex <int> | –
volume <string> | –deviceid <string> | –serialnumber <string>})
```

Options

`–deviceid` *string*

Specifies the volume device ID.

`–h`

Shows help for command options.

`–index` *string*

Specifies the Replay index.

`–name` *string*

Specifies the Replay name. Names that contain spaces must be enclosed in single quotes.

`–serialnumber` *integer*

Specifies the volume serial number. (Available only when running on operating systems that expose serial numbers to the user.)

`–volume` *string*

Specifies the volume name on which the Replay is located. Names that contain spaces must be enclosed in single quotes.

`–volumeindex` *integer*

Specifies the index of the volume on which the Replay is located.

Examples

Delete a Replay:

```
replay delete –volume 'volume 1' –name 'replay cu'
```

```
replay delete -deviceid 6000d3100000c90000000000000000c7-name 'replay cu'
```

replay show

Description

Shows Replay information. Output depends on the filter options specified in the command.

NOTE: A Replay is a Storage Center point-in-time copy that allows a site to restore data from a specific point in time. When planning Replay schedules and expiration settings, take care to balance restore requirements with the amount of resources consumed by unexpired Replays. Unexpired Replays can consume a disproportionate amount of Storage Center resources.

Format

```
replay show {options}
```

Options

`–consistencygroup` *string*

If a Replay was taken with a Consistency Group, shows the index of the group. If a Replay was not taken with a Consistency Group, output is null.

`–csv` *filename*

Specifies a csv file in which to save output.

`–expire` *string*

Specifies a Replay expiration date/time stamp by which to filter the display.

`–freeze` *string*

Specifies a Replay freeze date/time stamp by which to filter the display.

`–h`

Shows help for command options.

`–index` *string*

Specifies the Replay index by which to filter the display.

`–name` *string*

Specifies the Replay name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`–txt` *filename*

Specifies a txt file in which to save output.

`–volume` *string*

Specifies a volume name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`–volumeindex` *integer*

Specifies a volume index by which to filter the display.

`–xml` *filename*

Specifies an xml file in which to save output.

Output

For each Replay, the following information is output to the console in table format.

Output	Description
Volume	Shows volume name.
VolumeIndex	Shows index of the volume that created the Replay.
ConsistencyGroup	Shows index of the group if Replay is part of a Consistency Group. Otherwise, this is blank.
Freeze	Shows Rule by which the Replay was frozen.
Expire	Shows Replay expiration time.
Index	Shows index of the Replay.
Name	Shows the Replay name.

Examples

Save Replay information to txt and an xml files:

```
replay show -txt txtfile.txt -xml xmlfile.xml
```

Save Replay information to a csv file:

```
replay show -csv csvfile.csv
```

Show Replays for a volume:

```
replay show -volume 'volume 1'
```

Show Replays that will expire on a certain date and time:

```
replay show -expire '01/14/2012 11:59:59 pm'
```

Show Replays that were frozen on a certain date and time:

```
replay show -freeze '01/14/2008 11:59:59 pm'
```

replayprofile createreplay

Description

Creates a Replay on all volumes in a Replay profile, including Replay profiles that form a Consistency Group.

NOTE: A Replay is a Storage Center point-in-time copy that allows a site to restore data from a specific point in time. When planning Replay schedules and expiration settings, take care to balance restore requirements with the amount of resources consumed by unexpired Replays. Unexpired Replays can consume a disproportionate amount of Storage Center resources.

Format

```
replayprofile createreplay {-index integer | -name string} {options}
```

Options

```
-expire integer
```

Specifies the number of minutes after which the Replay profile expires. Zero (0) indicates no expiration. The default is 0.

`-h`

Shows help for command options.

`-index integer`

Specifies the index of the Replay profile.

`-name string`

Specifies the name of the Replay profile. Names that contain spaces must be enclosed in single quotes.

`-replayname string`

Specifies the name of the Replay. This is the name used in the **–name** option of Replay commands. Names that contain spaces must be enclosed in single quotes.

Examples

Create a named Replay profile:

```
replayprofile createreplay -name 'replayprofile 1'
```

Create a named Replay with no expiration time:

```
replayprofile createreplay -name 'replayprofile 2' -expire 0
```

replayprofile show

Description

Shows Replay profile information. Output depends on the filter options specified in the command.

NOTE: A Replay is a Storage Center point-in-time copy that allows a site to restore data from a specific point in time. When planning Replay schedules and expiration settings, take care to balance restore requirements with the amount of resources consumed by unexpired Replays. Unexpired Replays can consume a disproportionate amount of Storage Center resources.

Format

```
replayprofile show {options}
```

Options

`-csv filename`

Specifies a csv file in which to save output.

`-h`

Shows help for command options.

`-index string`

Specifies a Replay profile index by which to filter the display.

`-name string`

Specifies a Replay profile name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`-numrules string`

Specifies the number of rules associated with a specified Replay profile.

`-numvolumes string`

Specifies the number of volumes using the profile.

`-schedule string`

Specifies the rules and associated schedules for the profile.

`-txt filename`

Specifies a txt file in which to save output.

`-type string`

Specifies Replay profile type. Valid types are Serial, Parallel, and Consistent.

`-xml filename`

Specifies an xml file in which to save output.

Output

For each Replay, the following information is output to the console in table format.

Output	Description
Index	Shows index of the Replay profile.
Name	Shows name of the Replay profile.
Type	Shows type for the Replay profile.
numRules	Shows number of rules associated with the Replay profile.
NumVolumes	Shows number of volumes using the Replay profile.
Schedule	Shows schedule(s) for the Replay profile.

server addhba

Description

On Storage Center 5.0 and later, configures a new HBA for an existing server in the Storage Center, thus adding another storage path for the server that can be mapped and managed through the Storage Center.

Usually, the Storage Center first discovers a server and its ports/HBAs through a transport protocol. This discovery happens before an HBA can be configured for use. The –**manual** option flag overrides this dependency and allows HBAs to be configured before they are discovered. If the –**manual** flag is provided, then the –**porttype** option is also required and all specified WWNs must (upon discovery) match the transport type of the respective HBA. If the –**manual** flag is omitted, then –**porttype** is ignored.

NOTE: Actual values discovered through a transport protocol take precedence over this command. Therefore, the Command Utility evaluates discovered values before applying changes to the Storage Center.

This command is rejected for all requested WWNs if:

- It does not identify an existing server by **–name** or by **–index**.
- A requested WWN duplicates an already configured HBA.
- A requested WWN has not been discovered and the **–manual** flag is omitted.
- **–manual** flag is provided but the **–porttype** option is omitted.
- Requested WWN matches a discovered HBA whose transport type differs from the requested **–porttype**.
- Requested WWN is invalid for the actual and/or requested transport type. Specifically, for Fibre Channel a WWN must consist of 16 hexadecimal digits.

Format

```
server addhba {–name string | –index integer} –WWN string,…,string {options}
```

Options

`–h`

Shows help for command options.

`–index integer`

Specifies the server index.

`–manual`

Optional flag to configure the requested HBAs before they are discovered. If the WWN matches a known server port, then this flag is ignored. If this flag is present, then **–porttype** must also be specified.

`–name string`

Specifies the server name. Names that contain spaces must be enclosed in single quotes.

`–porttype string`

Specifies the transport type for all HBAs being added. This option is required if the **–manual** flag is set. Valid values are:

- FibreChannel
- iSCSI

`–WWN string`

Specifies one or more HBA world wide names (WWNs) for the server. Multiple names are delimited by commas (,) and names that contain spaces must be enclosed in single quotes.

NOTE: Storage Center supports use of WWNs and iSCSI Names. iSCSI Names may follow iSCSI Qualified Name (IQN) format, but they are not required to do so.

Examples

Add a Fibre Channel server port/HBA with the **–manual** flag set:

```
server addhba -name 'server 1' -manual -porttype FibreChannel -WWN
210200E08B309080
```

Add a server port/HBA using an iSCSI name:

```
server addhba -name 'server 1' -WWN iqn.2002-03.com.compellent:MNEP-1234-Lab01
```

server addtocluster

Description

On Storage Center 5.0 and higher, assigns an existing physical or virtual server to an existing server cluster.

The command is rejected if:

- Server or cluster identifier is omitted.
- Requested server is not a physical or virtual server.
- Requested server or cluster is not found in the Storage Center.
- Requested server is not a physical or virtual server.
- Requested parent is not a cluster.
- Requested server already belongs to a cluster.
- Server operating system does not match the cluster operating system.

Format

```
server addtocluster {–name string | –index integer} {–parent string | –
parentindex integer} {options}
```

Options

`–h`

Shows help for command options.

`–index integer`

Specifies the server index.

`–name string`

Specifies the server name. Names that contain spaces must be enclosed in single quotes.

`–parent string`

Specifies an existing physical server or cluster on which to host the new virtual server. Names that contain spaces must be enclosed in single quotes.

`-parentindex integer`

Specifies the index of the parent server.

Example

Add a server to an existing server cluster:

```
server addtocluster -name 'server 2' -parent 'servercluster 1'
```

server create

Description

Configures a physical server into the Storage Center, thus making the server available for storage operations and management through the Storage Center. Once this command completes successfully, the server addHBA command may be used to add more HBAs to the same server. Although this command is independent of the transport protocol, all WWNs specified in this command must already have been discovered by the Storage Center through a transport protocol. Use server showHBA as described in server showhba to display all discovered WWNs. This command is rejected if:

- The server name or WWN is omitted.
- The requested server name duplicates an existing server,
- A requested WWN does not match any discovered server HBA.
- A requested WWN duplicates a remote port that is already configured.

Format

`server create -name string -wwn string,…,string {options}`

Options

`-folder string`

Specifies a folder for the server. Names that contain spaces must be enclosed in single quotes.

`-folderindex integer`

Specifies the server folder index.

`-h`

Shows help for command options.

`-name string`

Specifies the server name. Server names that contain spaces must be enclosed in single quotes.

`-notes string`

Specifies optional user notes associated with the server.

`-os string`

Specifies the name of the operating system hosted on the server. Names that contain spaces must be enclosed in single quotes.

`-osindex integer`

Specifies the index of the operating system hosted on the server.

`-WWN string,…,string`

Specifies a globally unique World Wide Name for the requested HBA, or specifies a list of globally unique World Wide Names delimited by commas (,).

NOTE: Storage Center supports use of WWNs and iSCSI Names. iSCSI names may follow iSCSI Qualified Name (IQN) format, but they are not required to do so.

Examples

Create a server running Windows 2008 by specifying a server name and a single unique HBA name:

```
server create -name 'server 1' -WWN hba0 -os 'windows 2008'
```

Create a server running Windows 2008 by specifying a server name and multiple HBA names:

```
server create -name 'server 1' -WWN 'hba0,hba1,hba2' -os 'windows 2008'
```

server createcluster

Description

On Storage Center 5.0 and higher, creates a server cluster with no underlying physical or virtual servers. To add a physical or virtual server to a cluster, see server addtocluster. The command is rejected if:

- Cluster name or operating system is omitted.
- Requested operating system is not supported (unknown or invalid).

Format

`server createcluster -name string {-os string | -osindex integer} {options}`

Options

`-folder string`

Specifies a server folder name for the new cluster. Names that contain spaces must be enclosed in single quotes.

`-folderindex integer`

Specifies the server folder index for the new cluster.

`-h`

Shows help for command options.

`-name string`

Specifies the server name. Names that contain spaces must be enclosed in single quotes.

`–os string`

Specifies the name of the operating system for the new cluster. Names that contain spaces must be enclosed in single quotes.

`–osindex integer`

Specifies the index of the operating system for the new cluster.

Example

Create a server cluster running Windows 2008:

```
server createcluster -name 'servercluster 1' -os 'windows 2008'
```

server delete

Description

Deletes a server from the Storage Center, along with the associated HBAs and volume mappings. The scope of deletion and protection depend on server type, as follows:

- If the requested server is a virtual server, then only that virtual server is deleted.
- If the requested server is a physical server, then that physical server and all virtual servers whose parent is that physical server are deleted.
- If the requested server is a server cluster, and if any physical server identifies that cluster as a parent, then deletion is rejected. The **–force** option overrides this check and deletes the entire cluster and its constituent physical and virtual servers.

The command is rejected if:

- Both server name and index are omitted. The command must identify the requested server either by **–name** or by **–index**.
- Requested server is not found on the Storage Center.
- Requested server is a cluster that still contains one or more physical servers and the **–force** option is omitted.

Format

```
server delete {–name string | –index string} {options}
```

Options

`–force`

Specifies an optional flag to override the normal delete protection for a server cluster. If this flag is present, the cluster and every server (physical and virtual) in the cluster will be deleted. If the flag is omitted, a cluster will not be deleted if it contains a physical server.

`–h`

Shows help for command options.

`–index integer`

Specifies the server index.

`–name string`

Specifies the server name. Names that contain spaces must be enclosed in single quotes.

Examples

Delete a server and all mappings:

```
server delete –name 'server 1'
```

Force deletion of a cluster and all servers in the cluster:

```
server delete –name servercluster –force
```

server modify

Description

Modifies a server.

Format

```
server modify {–index integer | –name string} {options}
```

Options

`–folder string`

Specifies a folder for the server. Names that contain spaces must be enclosed in single quotes.

`–folderindex integer`

Specifies the folder index of the server

`–h`

Shows help for command options.

`–index integer`

Specifies the server index.

`–name string`

Specifies the server name. Names that contain spaces must be enclosed in single quotes.

`–os string`

Specifies the name of the operating system name hosted on the server by which to filter the display.

`–osindex integer`

Specifies the index of the operating system hosted on the server.

Example

Change the server folder:

```
server modify -name 'server 1' -folder 'server folder'
```

server removefromcluster

Description

On Storage Center 5.0 and later, removes a physical or virtual server from a server cluster. The server reverts to a standalone physical server.

The command is rejected if:

- Server name and index are omitted.
- Requested server is not found on the Storage Center.
- Requested server is not assigned to a cluster.

Format

```
server removefromcluster {-name string | -index integer} {options}
```

Options

`-h`

Shows help for command options.

`-index integer`

Specifies the server index.

`-name string`

Specifies the server name. Names that contain spaces must be enclosed in single quotes.

Example

Removes a physical server from a server cluster:

```
server removefromcluster -name 'physicalserver 1'
```

server removehba

Description

On Storage Center 5.0 and later, removes an existing HBA assignment from an attached server, thus reducing the number of storage paths available to the server.

The command is rejected if:

- Server name and index are omitted.

- WWN is omitted.
- Requested server or WWN is not found on the Storage Center.
- Requested WWN is not assigned to the requested server.

Format

```
server removehba {-name string | -index integer} -WWN string,…,string {options}
```

Options

`-h`

Shows help for command options.

`-index integer`

Specifies the server index.

`-name string`

Specifies the server name. Names that contain spaces must be enclosed in single quotes.

`-WWN string`

Specifies which HBA to remove from the server. Multiple WWNs are delimited by commas (,) and names that contain spaces must be enclosed in single quotes.

Example

Remove an HBA from a server:

```
server removehba -name 'server 1' -WWN 210200E08B309080
```

server show

Description

Shows the attributes of known attached servers on a Storage Center. Output depends on the filter options specified in the command.

Format

```
server show {options}
```

Options

`-connectstatus string`

Specifies a server connection status. (Storage Center 5.0 and later). Status may be:

- **Connected**: indicates that all primary paths are up between the HBA and the Storage Center.
- **Disconnected**: indicates that no primary paths are up between the HBA and the Storage Center.
- **Partially Connected**: requires single quotes and indicates that at least one primary path is up and at least one primary path is down between the HBA and the Storage Center.

`-csv filename`

Specifies a csv file in which to save output.

`-folder string`

Specifies a server folder name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`-folderindex string`

Specifies a server folder index by which to filter the display. (Storage Center 5.0 and later).

`-h`

Shows help for command options.

`-index string`

Specifies a server index by which to filter the display.

`-name string`

Specifies a server name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`-os string`

Specifies the name of the operating system hosted on the server by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`-osindex string`

Specifies the index of the operating system hosted on the server by which to filter the display.

`-parent string`

Specifies the parent host server or server cluster name by which to filter the display. Names that contain spaces must be enclosed in single quotes. (Storage Center 5.0 and later).

`-parentindex string`

Specifies the parent host server or server cluster name by which to filter the display (Storage Center 5.0 and later).

`-transporttype string`

Specifies the storage transport type by which to filter the display. The value displayed in the output is the aggregate transport type across all HBAs in the server (Storage Center 5.0 and later). Type may be:

- FibreChannel
- iSCSI
- Both

`-txt filename`

Specifies a txt file in which to save output.

`-type string`

Specifies the server type by which to filter the display. Type may be:

- Physical
- Virtual
- Cluster
- Remote Storage Center (requires single quotes)

`-wwn_list string`

Specifies one or more HBA World Wide Names (WWNs) by which to filter the display. WWNs are delimited by commas (,). When specifying WWNs on Storage Center 5.0 and later, be aware for the following:

- If a single WWN is entered when there are multiple WWNs defined, the command will not return any objects.
- When multiple WWNs are entered, each name must be entered exactly as the **server show** command displays it, including spaces. Any WWNs that include the space character, must be enclosed by single quote marks.

`-xml` *`filename`*

Specifies an xml file in which to save output. The xml file also returns mapping objects that include Volume, DeviceID, SerialNumber, RemotePort, and LUN. (See also volume show.)

Output

For each Storage Center server, the following information is output to the console in table format.

Output	Description
Index	Shows server index.
Name	Shows server name.
Folder	Shows server folder name.
OSIndex	Shows server host operating system index.
OS	Shows server host operating system name.
Type	Shows server type: Physical, Virtual, Cluster, or Remote Storage Center.
ParentIndex	Shows index of the parent of the server.
Parent	Shows parent host server or server cluster name.
WWN_List	Shows list of HBA World Wide Names (WWNs) for the server. Names are delimited by commas (,). For an iSCSI HBA, WWN_List shows the string value of the first known, intentional name for the port. The name may be either the Initiator node name set on the server and discovered by the Storage Center, or it may be the preconfigured WWN set through Storage Manager. The value can be any string of letters, numbers, and a subset of special characters. The name is not changed through the Storage Center over the life of the HBA.
FolderIndex	Shows server folder index.
Connect Status	Shows connection status aggregated across all HBAs in the server.
Transport Type	Shows transport type.

Examples

Save server information to csv and xml files:

```
server show -csv csvfile.csv -xml xmlfile.xml
```

Save server information to a txt file:

```
server show -txt txtfile.txt
```

Show all Partially Connected servers:

```
server show -connectstatus 'partially connected'
```

Show all virtual servers:

```
server show -type virtual
```

server showhba

Description

On Storage Center 5.0 and later, shows server port/HBA information for each attached server known to the Storage Center. Output depends on the filter options specified.

You can run this command on Storage Centers that have the following:

- One or more preconfigured servers
- One or more servers that have been discovered and configured, including a mix of operational and connection status values
- One or more discovered ports that have not yet been configured (assigned to a server), including a mix of operational and connection status values

Format

```
server showhba {options}
```

Options

`-connectstatus` *string*

Specifies the status of the transport connection between the server port/HBA and the Storage Center by which to filter the display. Valid values are:

- **Connected**: indicates that all primary paths are up between the HBA and the Storage Center.
- **Disconnected**: indicates that no primary paths are up between the HBA and the Storage Center.
- **Partially Connected**: (requires single quotes) indicates that at least one primary path is up and at least one primary path is down between the HBA and the Storage Center.

`-csv` *filename*

Specifies a csv file in which to save output.

`-h`

Shows help for command options.

`-hbatype` *string*

Specifies the transport type of the server port/HBA by which to filter the display. Valid values are:

- iSCSI
- FibreChannel

`-ipaddress` *string*

Specifies the IP address for the iSCSI server port/HBA by which to filter the display (iSCSI only).

`-iscsi_name` *string*

Specifies the unique iSCSI transport name for the server port/HBA by which to filter the display (iSCSI only).

`-portinfo` *string*

Specifies additional, protocol- and device-specific information by which to filter the display.

`-server` *string*

Specifies the index of the server host for the port/HBA by which to filter the display.

`-servername` *string*

Specifies the name of the server host for the port/HBA by which to filter the display.

`-status` *string*

Specifies the operational status of the server port/HBA by which to filter the display. Valid values are:

- Up
- Down

`-txt` *filename*

Specifies a text file in which to save output.

`-wwn` *string*

Specifies the remote port Initiator name or the World Wide Name (WWN) for the server port/HBA by which to filter the display.

`-xml` *filename*

Specifies an xml file in which to save output.

Output

For each Storage Center server, the following information is output to the console in table format.

Output	Description
WWN	Shows the World Wide Name (WWN) for the server port/HBA (set at the Initiator) or the Port Name of a discovered iSCSI port.
Server	Shows the index of the server host for this port/HBA.
ServerName	Shows the name of the server host for this port/HBA.
Status	Shows the operational status of this Server port/HBA.
ConnectStatus	Shows the status of the transport connection between the server port/HBA and the Storage Center.
HBAType	Shows the transport type of the server port/HBA.
iSCSI_Name	Shows the unique iSCSI network name for the server port/HBA.

Output	Description
IPAddress	Shows the IP address for the iSCSI server port/HBA.
PortInfo	Shows additional, protocol and device-specific information for the specified server port/HBA.

serverfolder create

Description

Creates a server folder.

Format

```
serverfolder create –name string {options}
```

–h

Shows help for command options.

–name *string*

Specifies the server folder name. Names that contain spaces must be enclosed in single quotes.

–parent *string*

Specifies the parent folder of the server folder. Names that contain spaces must be enclosed in single quotes.

–parentindex *integer*

Specifies the parent server folder index.

Examples

Create a server folder:

```
serverfolder create -name newfolder
```

Create a serverfolder within another folder:

```
serverfolder create -name myservers -parent servercluster
```

serverfolder delete

Description

Deletes a server folder.

Format

```
serverfolder delete {–index integer | –name string} {options}
```

Options

`-h`

Shows help for command options.

`-index integer`

Specifies the index of the server folder index.

`-name string`

Specifies the name of the server folder. Names that contain spaces must be enclosed in single quotes.

`-parent string`

Specifies the parent folder of the server folder. Names that contain spaces must be enclosed in single quotes.

Examples

Delete a server folder by name:

```
serverfolder delete -name newfolder -parent servercluster
```

Delete a server folder by index:

```
serverfolder delete -index 42 -parent servercluster
```

serverfolder modify

Description

Modifies server folder settings.

Format

```
serverfolder modify {-index integer | -name string} {-parent string | -
parentindex integer}
```

Options

`-h`

Shows help for command options.

`-index integer`

Specifies the index of the server folder to modify.

`-name string`

Specifies the name of the server folder to modify. Names that contain spaces must be enclosed in single quotes.

`-parent string`

Specifies the parent folder name of the server folder. Names that contain spaces must be enclosed in single quotes.

`–parentindex integer`

Specifies the parent server folder index.

Examples

Modify a server folder by name and parent:

```
serverfolder modify –name myservers –parent serverclusters
```

Modify a server folder by index and parentindex:

```
serverfolder modify –index 88 –parentindex 208
```

serverfolder show

Description

Shows information about a server folder. Output depends on the filter options specified in the command.

Format

```
serverfolder show {options}
```

Options

`–csv filename`

Specifies a csv file in which to save output.

`–h`

Shows help for command options.

`–index string`

Specifies a server folder index by which to filter the display.

`–name string`

Specifies a server folder name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`–numservers string`

Shows the number of servers in the path.

`–path string`

Specifies the path of the server folder name.

`–txt filename`

Specifies a txt file in which to save output.

`-xml filename`

Specifies an xml file in which to save output.

Output

For each Storage Center server, the following information is output to the console in table format.

Output	Description
Index	Shows server folder index.
Name	Shows server folder name.
Path	Shows path for the server folder.
NumServers	Shows number of servers in the path.

storageprofile show

Description

Shows Storage Profile information. Output depends on the filter options specified in the command.

Format

```
storageprofile show {options}
```

Options

`-csv filename`

Specifies a csv file in which to save output.

`-dualhistorical string`

Shows the Storage Tier and RAID level for dual-redundant Replay data.

`-dualredundantwritable string`

Shows the Storage Tier and RAID level for dual-redundant writable data.

`-csv filename`

Specifies a csv file in which to save output.

`-h`

Shows help for command options.

`-index string`

Specifies a Storage Profile index by which to filter the display.

`-name string`

Specifies a Storage Profile name by which to filter the display.

`-nonredundanthistorical` *string*

Specifies the Storage Tier and RAID level for nonredundant Replay data by which to filter the display.

`-nonredundantwritable` *string*

Specifies the Storage Tier and RAID level for nonredundant writable data by which to filter the display.

`-numvolumes` *string*

Specifies the number of volumes using the Storage Profile by which to filter the display.

`-redundanthistorical` *string*

Specifies the Storage Tier and RAID level for redundant Replay data by which to filter the display.

`-redundantwritable` *string*

Specifies the Storage Tier and RAID level for redundant writable data by which to filter the display.

`-txt` *filename*

Specifies a txt file in which to save output.

`-xml` *filename*

Specifies an xml file in which to save output.

Output

For each Storage Center Storage Profile, the following information is output to the console in table format.

Output	Description
Index	Shows the index of the Storage Profile.
Name	Shows the name of the Storage Profile.
NumVolumes	Shows the number of volumes using the Storage Profile.
RedundantWritable	Shows the Storage Tier and RAID level for redundant writeable data.
RedundantHistorical	Shows the Storage Tier and RAID level for redundant Replay data.
NonRedundantWritable	Shows the Storage Tier and RAID level for non-redundant writeable data.
NonRedundantHistorical	Shows the Storage Tier and RAID level for non-redundant Replay data.
DualRedundantWritable	Shows the Storage Tier and RAID level for dual-redundant writeable Data.
DualHistorical	Shows the Storage Tier and RAID level for dual-redundant Replay data.
Volumes	Shows name, volume index, device id and serial number for each volume (xml output only).

Examples

Show only Storage Profile with an index of 4:

```
storageprofile show -index 4
```

Export information for all Storage Profiles to an xml file.

```
storageprofile show -xml xmlfile.xml
```

Export information for a specific Storage Profile to a csv file.

```
storageprofile show -name 'High Priority' -cvs csvfile.csv
```

storagetype show

Description

Shows information about a storage type. Output depends on the filter options specified in the command.

Format

```
storagetype show {options}
```

Options

`-csv` *filename*

Specifies a csv file in which to save output.

`-diskfolder` *string*

Specifies the disk folder associated with a storage type by which to filter the display.

`-h`

Shows help for command options.

`-index` *string*

Specifies the index of a storage type by which to filter the display.

`-name` *string*

Specifies the name of a storage type by which to filter the display.

`-pagesize` *string*

Specifies the page size of the storage type by which to filter the display.

`-pagesizeblocks` *string*

Specifies the page size in blocks of the storage type by which to filter the display.

`-redundancy` *string*

Specifies storage type redundancy by which to filter the display. Allowed values are:

- **0**: Non-Redundant
- **1**: Redundant
- **2**: Dual-Redundant

The default is 1 (Redundant). If you specify a storage type that has not been primed on the Storage Center, the command terminates without creating the volume. For information on storage types, see the *Dell Storage Manager Administrator's Guide*.

`-spaceallocated` *string*

Specifies the space allocated by the storage type by which to filter the display.

`-spaceallocatedblocks` *string*

Specifies the space allocated in blocks by the storage type by which to filter the display.

`-spaceused` *string*

Specifies the space used by the storage type by which to filter the display.

`-spaceusedblocks` *string*

Specifies the space used in blocks by the storage type by which to filter the display.

`-txt` *filename*

Specifies a txt file in which to save output.

`-xml` *filename*

Specifies an xml file in which to save output.

Output

For each storage type, the following information is output to the console in table format.

Output	Description
Index	Shows the index of the storage type.
Name	Shows the name of the storage type.
DiskFolders	Shows the name of the disk folder using the storage type.
Redundancy	Shows the redundancy setting for the storage type.
PageSize	Shows the page size for the storage type.
PageSizeBlocks	Shows the page size for the storage type in blocks.
SpaceUsed	Shows the used space for the storage type.
SpaceUsedBlocks	Shows the used space for the storage type in blocks.
SpaceAllocated	Shows the amount of allocated space for the storage type.
SpaceAllocatedBlocks	Shows the amount of allocated space for the storage type in blocks.

system restart

Description

Enables an Administrator to restart a Storage Center.

NOTE: Restarting a controller that has been shut down also requires manual intervention. The power button on the Storage Center controller must be pressed to restore power.

Format

```
system restart {options}
```

Options

`-h`

Shows help for command options.

`-simultaneous`

Specifies whether both controllers on a dual-controller Storage Center should be restarted simultaneously. If the simultaneous option is not specified on the command, a dual-controller Storage Center will be restarted in sequence starting with the leader controller.

- Restarting in sequence does not cause a Storage Center outage. Storage Center shuts down the leader controller, and then restarts the leader controller. When the leader controller is up, Storage Center shuts down and restarts the second controller. Ports will be unbalanced and Storage Manager will ask you to rebalance the ports.
- Restarting simultaneously shuts down both controllers simultaneously and then brings them back on line. This causes a Storage Center outage. When the controllers are restarted, they may or may not be unbalanced.

Example

Restart a dual-controller Storage Center simultaneously:

```
system restart -simultaneous
```

system show

Description

Shows current Storage Center management configuration information through the leader controller. Output depends on the filter options specified in the command.

Format

```
system show {options}
```

Options

`-backupmailserver` *`string`*

Specifies the Storage Center backup mail server IP address by which to filter the display.

`-csv filename`

Specifies a csv file in which to save output.

`-h`

Shows help for command options.

`-mailserver string`

Specifies the Storage Center primary mail server IP address by which to filter the display.

`-managementip string`

Specifies the Storage Center management IP address by which to filter the display.

`-name string`

Specifies a Storage Center name by which to filter the display.

`-operationmode string`

Specifies a Storage Center operation mode by which to filter the display. Available options are:

- Install
- Maintenance
- Normal
- PreProduction

`-portsbalanced string`

Specifies a Local Ports Balanced status by which to filter the display. Available options are:

- Yes (balanced)
- No (unbalanced)

`-serialnumber string`

Specifies Storage Center serial number by which to filter the display.

`-txt filename`

Specifies a txt file in which to save output.

`-version string`

Specifies the four-part Storage Center version by which to filter the display.

`-xml filename`

Specifies an xml file in which to save output.

Output

The following information is output to the console in table format.

Output	Description
SerialNumber	Shows Storage Center serial number.
Name	Shows Storage Center name.
ManagementIP	Shows Storage Center management IP address.
Version	Shows Storage Center version
OperationMode	Shows Storage Center operation mode.
PortsBalanced	Shows Storage Center ports balanced status.
MailServer	Shows Storage Center mail server IP address.
BackupMailServer	Shows Storage Center backup mail server IP address.

system shutdown

Description

Enables an Administrator to shut down a Storage Center. You cannot shutdown until all controllers are in the Up state. This ensures that the Storage Center shuts down elegantly.

NOTE: Restarting a controller that has been shutdown requires manual intervention. The power button on the Storage Center controller must be pressed to restore power.

Format

```
system shutdown
```

Option

```
-h
```

Shows help for command options.

Example

Shutdown a Storage Center:

```
system shutdown
```

user create

Description

Enables a user with Administrator privileges to create a new user account on the Storage Center.

Format

```
user create -username string -password string -privilege integer {options}
```

Options

`-email string`

Specifies the email address of the user.

`-h`

Shows help for command options.

`-notes string`

Specifies optional notes for the user.

`-password string`

Specifies a password for the user.

`-privilege string`

Specifies the privilege level of the user. Allowed values are:

- Admin
- VolumeManager
- Reporter

`-realname string`

Specifies the real name of the user.

`-usergroup string,…,string`

Specifies user groups by name for the user. If user groups exist on the Storage Center, lists the user groups. If no user group has been created, use the **usergroup create** command to create a user group. See usergroup create.

`-usergroupindex string,…, string`

Specifies user groups by index for the user. If user groups exist on the Storage Center, lists the index(es) of the user group(s). If no user group has been created, use the **usergroup create** command to create a user group. See usergroup create.

`-username string`

Specifies the user name for the user. If a user name for an account was previously created and deleted, that user name cannot be used in another **user create** command.

Example

Create a new user with a user name of Fred, an initial password of abc, and Reporter privilege:

```
user create -username Fred -password abc -privilege Reporter
```

user delete

Description

Enables a user with Administrator privileges to delete an existing user account on the Storage Center.

Format

```
user delete {–index integer | –username string} {options}
```

Options

```
–h
```

Shows help for command options.

```
–index integer
```

Specifies the index of the user to be removed.

```
–username string
```

Specifies the user name of the user to be removed.

Examples

Delete a user with a user name of Fred:

```
user delete –username Fred
```

Delete a user with an index of 4:

```
user delete –index 4
```

user modify

Description

Enables a user with Administrator privileges to modify existing Storage Center user account information and privileges for any user on the Storage Center. If you are a Volume Manager or Reporter, you can change your own properties but you cannot change properties for any other user.

Format

```
user modify {–index integer | –username string} {options}
```

Options

```
–email string
```

Specifies the user's email address.

```
–enabled {true|false}
```

Specifies whether the user is enabled on the Storage Center. Set to false to disable the user without deleting the user account. A disabled user cannot log onto the Storage Center.

```
–h
```

Shows help for command options.

```
–index integer
```

Specifies index of the user.

`-notes string`

Specifies any optional notes about the user (up to 255 characters).

`-password string`

Specifies the password for the user.

`-privilege string`

Specifies the privilege level of the user. Available options are:

- Admin
- VolumeManager
- Reporter

> NOTE: To downgrade a user's privileges, delete the user and re-create the user with a new user name. You cannot recreate a user with downgraded privileges with the same user name. You can upgrade a user's privileges without deleting and re-creating the user with a new user name.

`-realname string`

Specifies the real name of the user.

`-usergroup string,…,string`

Specifies user group(s) by name for the user. If user groups exist on the Storage Center, lists the user group. If no user group has been created, use the **usergroup create** command to create a user group. See usergroup create.

`-usergroupindex string,…,string`

Specifies user groups by index for the user. If user groups exist on the Storage Center, lists the user group(s). If no user group has been created, use the **usergroup create** command to create a user group. See usergroup create.

`-username string`

Specifies the name of the user to be modified.

Example

Change the privilege level to Volume Manager for a user with the user name Fred:

```
user modify -username Fred -privilege VolumeManager
```

user show

Description

Enables a user with Administrator privileges to view information about Storage Center users. Output depends on the filter options specified in the command.

Format

```
user show {options}
```

Options

`-csv filename`

Specifies a csv file in which to save output.

`–email` *string*

Specifies a user email address by which to filter the display.

`–enabled` *string*

Specifies a user enabled value by which to filter the display. The value is either true or false.

`–h`

Shows help for command options.

`–index` *integer*

Specifies a user index by which to filter the display.

`–privilege` *string*

Specifies user privilege by which to filter the display. Available options are:

- Admin
- VolumeManager
- Reporter

`–realname` *string*

Specifies user real name by which to filter the display.

`–showgroupindex`

Flag indicating that user groups will be displayed by index rather than by name.

`–txt` *filename*

Specifies a txt file in which to save output.

`–user_groups` *string*

Specifies by name user groups by which to filter the display.

`–username` *string*

Specifies a user name by which to filter the display.

`–xml` *filename*

Specifies an xml file in which to save output.

Output

The following information is output to the console in table format.

Output	Description
Index	Shows the user(s) index.
User_Name	Shows user name(s).

Output	Description
Privilege	Shows user privilege level(s).
RealName	Shows user real name(s).
Email	Shows user email address(es).
Enabled	Shows which users are enabled on the Storage Center.
User_Groups	Shows the groups to which users belong. If the **–showgroupindex** flag is set, shows user groups by index not by name.

usergroup create

Description

Enables a user with Administrator privileges to create a user group on the Storage Center and to specify disk, server, and volume folders for the group. User groups have access only to specified disk, server, and volume folders.

Format

```
usergroup create –name string {–volumefolder string,…,string | –
volumefolderindex string,…,string} {–serverfolder string,…,string | –
serverfolderindex string,…,string} {–diskfolder string,…,string | –
diskfolderindex string,…,string} {options}
```

Options

`–diskfolder string,…,string`

Specifies by name the disk folders for the user group. This option is required only if the Storage Center has more than one managed disk folder. If the Storage Center has only a single managed disk folder, that folder is automatically included in the user group.

Disk folder names that contain spaces must be enclosed in single quotes.

`–diskfolderindex string,…,string`

Specifies by index the disk folders for the user group. This option is required only if the Storage Center has more than one managed disk folder. If the Storage Center has only a single managed disk folder, that folder is automatically included in the user group.

`–h`

Shows help for command options.

`–name string`

Specifies the name of the user group.

`–serverfolder string,…,string`

Specifies by name server folders for the user group. Server folder names that contain spaces must be enclosed in single quotes.

`–serverfolderindex` *`string,…,string`*

Specifies by index server folders for the user group.

`–volumefolder` *`string,…,string`*

Specifies by name volume folders for the user group. Volume folder names that contain spaces must be enclosed in single quotes.

`–volumefolderindex` *`string,…,string`*

Specifies by index volume folders for the user group.

Examples

Create a user group with a server folder and a volume folder specified for the group's use on a Storage Center with only one managed disk folder:

```
usergroup create -name HRusers –serverfolder HR1 -volumefolder staffing
```

Create a user group with a server folder, a volume folder, and a disk folder specified for the group's use on a Storage Center with two managed disk folders:

```
usergroup create -name HRusers –serverfolder HR1 –volumefolder staffing –
diskfolder ManagedFolder1
```

usergroup delete

Description

Enables a user with Administrator privileges to delete an existing Storage Center user group.

Format

`usergroup delete {–index` *`integer`* `| –name` *`string`*`}`

Options

`–h`

Shows help for command options.

`–index` *`integer`*

Specifies the index of the user group.

`–name` *`string`*

Specifies the name of the user group.

Examples

Delete a user group named HRusers:

```
usergroup delete -name HRusers
```

Delete a user group with an index of 5:

```
usergroup delete -index 5
```

usergroup modify

Description

Enables a user with Administrator privileges to modify information and privileges for a Storage Center user group.

Format

```
usergroup modify {-index integer | -name string} {options}
```

Options

`-diskfolder string,…,string`

Specifies a list of disk folders by name. This option is required only if the Storage Center has more than one managed disk folder. If the Storage Center has only a single managed disk folder, that folder is automatically included in the user group.

`-diskfolderindex string,…,string`

Specifies a list of disk folders by index. This option is required only if the Storage Center has more than one managed disk folder. If the Storage Center has only a single managed disk folder, that folder is automatically included in the user group.

`-h`

Shows help for command options.

`-index integer`

Specifies index of the user group.

`-name string`

Specifies the name of the user group.

`-serverfolder string,…,string`

Specifies a list of server folders by name.

`-serverfolderindex string,…,string`

Specifies a list of server folders by index.

`-volumefolder string,…,string`

Specifies a list of volume folders by name.

`–volumefolderindex` *`string,…,string`*

Specifies a list of volume folders by index.

Example

Add a managed disk folder named benefits to the folders available to the user group HRusers:

```
usergroup modify -name HRusers -diskfolder benefits
```

usergroup show

Description

Enables a user with Administrator privileges to display information about Storage Center user groups. Output depends on the filter options specified in the command.

Format

```
usergroup show {options}
```

Options

`–csv` *`filename`*

Specifies a csv file in which to save output.

`–disk_folders` *`string,…,string`*

Specifies disk folders assigned to the user group by which to filter the display.

NOTE: Multiple folders must be specified exactly as shown in the output from the **usergroup show** command. For example, if the command returns: `folder1, folder2, folder3`, you must specify all three folder names as shown or the command will not return any user groups.

`–h`

Shows help for command options.

`–index` *`string`*

Specifies index of the user group by which to filter the display.

`–name` *`string`*

Specifies name of the user group by which to filter the display.

`–server_folders` *`string,…,string`*

Specifies server folders for the user group by which to filter the display.

NOTE: Multiple folders must be specified exactly as shown in the output from the **usergroup show** command. For example, if the command returns: `folder1, folder2, folder3`, you must specify all three folder names as shown or the command will not return any user groups.

`–showfolderindex`

Flag indicating that folders will be displayed by index rather than by name.

`-txt filename`

Shows a txt file in which to save output.

`-volume_folders string,…,string`

Specifies volume folders assigned to the user group by which to filter the display.

NOTE: Folders must be specified exactly as shown in the output from the **usergroup show** command. For example, if the command returns: `folder1, folder2, folder3`, you must specify all three folder names as shown or the command will not return any user groups.

`-xml filename`

Specifies an xml file in which to save output.

Output

The following information is output to the console in table format.

Output	Description
Index	Shows the index of the user group.
Name	Shows the name of the user group.
Volume_Folders	Shows volume folders for the user group.
Disk_Folders	Shows if there are disk folders assigned to the user group.
Server_Folders	Shows server folders for the user group.

volume create

Description

Creates a new volume and optionally maps the new volume to a server.

NOTE: To map an existing volume to a server, use volume map.

Format

`volume create -name string -size integer [k|m|g|t] {options}`

Options

`-boot`

If present, designates the mapped volume to be a boot volume. The **–boot** and **–lun** options are mutually exclusive. Specifying the **–boot** option maps the new volume to lun0. If neither **–boot** nor **–lun** option is specified, the next available LUN is automatically assigned (Storage Center 5.0 and later).

`-controller string`

Specifies the name of the controller on which to activate the volume. See Mapping a Volume for information on the **–controller** option and mapping volumes.

`–diskfolder string`

Specifies a disk folder for the volume.

`–folder string`

Specifies the name of an existing volume folder in which to create the volume.

`–folderindex integer`

Specifies the index of an existing volume folder in which to create the volume.

`–h`

Shows help for command options.

`–localport string`

Specifies the WWN of the single local port to use for mapping when the **–singlepath** option is specified. Use this option with the **–localport** and **–remoteport** options to set the single port to use. (The **–localport** option is deprecated on Storage Center 5.0 and later.)

`–lun integer`

Specifies the logical unit number (LUN) for the mapped volume. The **–boot** and **–lun** options are mutually exclusive. If neither **–boot** nor **–lun** option is specified, the next available LUN is automatically assigned (Storage Center 5.0 and later).Dell recommends that you allow LUNs to be automatically assigned to avoid issues with operating Storage Centers that require sequential LUN ordering.

`–maxwrite integer [k|m|g|t]`

Specifies the maximum size for volume writes. This value must be less than or equal to the volume size. By default, no limit is set for volume writes. Enter the number of 512-byte blocks or the total byte size. To specify a total byte size, use m for megabytes, g for gigabytes, or t for terabytes. For example, enter 32m to specify a block size of 32 MB.

`–name string`

Specifies the volume name. This option is required.

`–notes string`

Specifies notes for the volume. By default, no notes are included.

`–pagesize integer [k|m]`

Specifies the pagesize to use for the volume. If you specify a page size that does not exist on the Storage Center, the command terminates without creating the volume.

`–readcache {true|false}`

Enables or disables volume read cache. The default is false.

`–redundancy integer`

Sets volume storage type. Available options are:

- **0**: Non-redundant
- **1**: Redundant
- **2**: Dual-redundant

The default is 1 (redundant). If you specify a storage type that has not been primed on the Storage Center, the command terminates without creating the volume. For information on storage types, see the *Dell Storage Manager Administrator's Guide*.

`–remoteport` *`string`*

Specifies the world wide name (WWN) of the remote port for mapping the volume.

`–replayprofile` *`string`*`,…,`*`string`*

Specifies one or more Replay profiles for the volume. Separate a series of Replay profile names with commas (,). If you specify an invalid Replay profile, the command returns an error and the volume is created without a Replay profile.

`–server` *`string`*

Specifies the server for the volume. This is the server to which the volume or volume view will be mapped. See Mapping a Volume.

`–serverindex` *`integer`*

Specifies the server index for the volume. This is the server to which the volume or volume view will be mapped. See Mapping a Volume.

`–singlepath`

Indicates that only a single port can be used for mapping. If omitted, all local ports are used for mapping. Use the **–localport** option to set the single port to use. See Mapping a Volume. (The **–localport** option is deprecated on Storage Center 5.0 and later.)

`–size` *`integer`* `[k|m|g|t]`

Specifies the volume size. Enter the number of 512-byte blocks or the total byte size. To specify a total byte size, use k for kilobytes, m for megabytes, g for gigabytes, or t for terabytes. For example: enter 32m to specify a block size of 32 MB. This option is required.

`–storageprofile` *`string`*

Specifies a Storage Profile for the volume. Use storageprofile show to show a list of available Storage Profiles.

`–storageprofileindex` *`integer`*

Specifies a Storage Profile index for the volume. Use storageprofile show to show a list of available Storage Profiles.

`–storagetype` *`string`*

Specifies a storage type for the volume. This option overrides values specified for the **–redundancy**, **–pagesize**, and **–diskfolder** options. If there is more than one storage type of the same name on the Storage Center, the first storage type found that matches the name is used.

`–storagetypeindex` *`integer`*

Specifies a storage type index for the volume. When you specify this option, storage types are found by their indexes. Using this option guarantees that all storage types with the same name on a Storage Centerare found.

`–writecache {true | false}`

Enables or disables volume write cache. Specify true (or 1) to enable volume write cache or specify false (or 0) to disable volume write cache. The default is false.

Mapping a Volume

The Command Utility supports the ability to map to a server that is offline. If a server is offline, the volume create command creates a *mapping profile* to the down server. The actual *mapping* is not created until the server is back online. Therefore, validation of server creation and/or mapping success cannot be determined until the server is back online.

Basic Examples

Create a 32-GB volume:

```
volume create -name 'volume 1' -size 32g
```

Create a volume in a folder:

```
volume create -name 'volume 1' -size 32g -folder 'vol folder 1'
```

Create a volume using the maxwrite option:

```
volume create -name testvol3 -size 32g -maxwrite 32g
```

Create a Volume with a Specific Storage Profile

```
volume create -name 'volume 1' -size 32g -storageprofile 'Low Priority'
```

Create Volumes with Cache Settings

```
volume create -name testvolread -size 32g -readcache true -writecache false
volume create -name testvolwrite -size 32g -readcache false -writecache true
volume create -name testvolboth -size 32g -readcache true -writecache true
```

Volume Mapping Examples

Create and map a volume and allow Storage Center Command Utility to assign a controller and LUN:

```
volume create -name 'volume 1' -server 'server 1'
```

Create and map a volume with a specified controller:

```
volume create -name 'volume 1' -server 'server 1' -controller 'leader'
```

Create and map a volume with a specified controller and LUN:

```
volume create -name 'volume 1' -server 'server 1' -controller 'leader' -lun 25
```

Create a volume with a single path for mapping:

```
volume create -name 'volume 1' -server 'server 1' -singlepath
```

volume delete

Description

Deletes a volume.

Format

```
volume delete {-deviceid string | -index integer | -name string | -serialnumber string} {options}
```

Options

`-deviceid string`

Specifies the volume device ID. See About Device IDs for information.

`-h`

Shows help for command options.

`-index integer`

Specifies the volume index.

`-name string`

Specifies the volume name.

`-purge`

Indicates that the volume should be purged. If the **–purge** option is not specified, the volume will still be visible using the **volume show** command and will have a status of Recycled.

`-serialnumber string`

Specifies the volume serial number. (Available only when running on operating systems that expose serial numbers to the user.)

Examples

Deleting a volume by moving it to the recycle bin:

```
volume delete -name 'volume 1'
```

Completely purging the volume:

```
volume delete -name 'volume 1' -purge
```

```
volume delete -deviceid 6000d3100000c90000000000000000cb -purge
```

volume erase

Description

Erases all data from a volume. This command is deprecated for Storage Center 5.0 and later.

Format

```
volume erase {-deviceid string | -index integer | -name string | -serialnumber string}
```

Options

`-deviceid string`

Specifies the volume device ID. See About Device IDs for information.

`-h`

Shows help for command options.

`-index integer`

Specifies the volume index.

`-name string`

Specifies the volume name. Names that contain spaces must be enclosed in single quotes.

`-serialnumber string`

Specifies the volume serial number. (Available only when running on operating systems that expose serial numbers to the user.)

Examples

Erase all data on a volume:

```
volume erase -name 'volume 1'
volume erase -deviceid 6000d3100000c90000000000000000cb
volume erase -index 22
```

volume expand

Description

Expands the size of a volume.

Format

```
volume expand {-deviceid string | -index integer | -name string -serialnumber string} -size integer [k|m|g|t]
```

Options

`-deviceid string`

Specifies the volume device ID. See About Device IDs for information.

`-h`

Shows help for command options.

`-index integer`

Specifies the volume index.

`–name string`

Specifies the volume name. Names that contain spaces must be enclosed in single quotes.

`–serialnumber string`

Specifies the volume serial number. (Available only when running on operating systems that expose serial numbers to the user.)

`–size integer [k|m|g|t]`

Specifies the amount by which to expand the volume. Enter the number of 512-byte blocks or the total byte size. To specify a total byte size, use k for kilobytes, m for megabytes, g for gigabytes, or t for terabytes. For example, enter 32m to specify a block size of 32 MB.

Example

Expand a volume:

```
volume expand –name 'volume 1' –size 3g

volume expand –deviceid 6000d3100000c90000000000000000ca –size 3g

volume expand –index 44 –size 3g
```

volume map

Description

Maps an existing volume to a server.

The Command Utility supports the ability to map to a server that is offline. If a server is offline, the volume create command creates a *mapping profile* to the down server. The actual *mapping* is not created until the server is back online. Therefore, validation of server creation and/or mapping success cannot be determined until the server is back online.

NOTE: To create a new volume and map it to a server, use volume create.

Format

```
volume map {–deviceid string | –index integer | –name string | –serialnumber
string} {–server string  | –serverindex integer} {–boot | –lun} {options}
```

Options

`–boot`

If present, designates the mapped volume to be a boot volume. The **–boot** and **–lun** options are mutually exclusive. Specifying the **–boot** option maps the new volume to lun0. If neither **–boot** nor **–lun** option is specified, the next available LUN is automatically assigned (Storage Center 5.0 and later).

`–controller string`

Specifies the name of the controller on which to activate the volume. If omitted Storage Center CU assigns a controller. If specified and the Storage Center cannot map the volume to the specified

controller, Storage Center assigns another controller. If the volume to map has already been activated on a controller, the **–controller** option is ignored.

`–deviceid` *`string`*

Specifies the volume device ID. See About Device IDs for information.

`–force`

Forces mapping even when another mapping already exists.

`–h`

Shows help for command options.

`–index` *`integer`*

Specifies the volume index.

`–localport` *`string`*

Specifies the world wide name (WWN) of the single local port to use for mapping when the **–singlepath** option is used. (The **–localport** option is deprecated on Storage Center 5.0 and later.)

`–lun` *`integer`*

Specifies the logical unit number (LUN) for the mapped volume. The **–boot** and **–lun** options are mutually exclusive. If neither **–boot** nor **–lun** option is specified, the next available LUN is automatically assigned (Storage Center 5.0 and later). Dell recommends that you allow LUNs to be automatically assigned to avoid issues with operating systems that require sequential LUN ordering.

`–name` *`string`*

Specifies the volume name. Names that contain spaces must be enclosed in single quotes.

`–readonly`

Flag that makes the map read only.

`–remoteport` *`string`*

Specifies the world wide name (WWN) of the remote port for mapping the volume.

`–serialnumber` *`string`*

Specifies the volume serial number. (Available only when running on operating systems that expose serial numbers to the user.)

`–server` *`string`*

Specifies the name of the server to which to map the volume or volume view. Names that contain spaces must be enclosed in single quotes.

`–serverindex` *`integer`*

Specifies the index of the server to which to map the volume or volume view.

`–singlepath`

Indicates that only a single local port can be used for mapping. If omitted, all local ports are used for mapping. (For Storage Center versions 5.0 and earlier, use with the **–localport** option to specify a single port.)

Examples

Mapping a volume and allowing Storage Center CU to assign a controller and LUN:

```
volume map -name 'volume 1' -server 'server 1'
```

```
volume map -deviceid 6000d3100000c90000000000000000cb -server 'server 1'
```

Mapping a volume to a specific controller:

```
volume map -name 'volume 1' -server 'server 1' -controller 'leader'
```

Mapping a volume to a specific controller and LUN:

```
volume map -name 'volume 1' -server 'server 1' -controller 'leader' -lun 25
```

Forcing volume mapping:

```
volume map -name testvol -server 'server 1' -force
```

Mapping a volume using a single path for the mapping:

```
volume map -name 'volume 1' -server 'server 1' -singlepath
```

volume modify

Description

Modifies a volume.

Format

```
volume modify {-deviceid string | -index integer | -name string | -serialnumber
string} {options}
```

Options

`-deviceid string`

Specifies the volume device ID. See About Device IDs for information.

`-folder string`

Specifies a folder for the volume. Names that contain spaces must be enclosed in single quotes.

`-folderindex integer`

Specifies the volume folder index.

`-h`

Shows help for command options.

`-index integer`

Specifies the volume index.

`-maxwrite integer [k|m|g|t]`

Specifies the maximum size for volume writes. Enter the number of 512-byte blocks or the total byte size. To specify a total byte size, use k for kilobytes, m for megabytes, g for gigabytes, or t for terabytes. For example, enter 32m to specify a block size of 32 MB. By default, no limit is set for volume writes.

`-name` *`string`*

Specifies the volume name. Names that contain spaces must be enclosed in single quotes.

`-readcache {true|false}`

Enables or disables volume read cache. Specify true (or 1) to enable volume read cache or specify false (or 0) to disable volume read cache.

`-replayprofile` *`string,…,string`*

Specifies one or more Replay profiles for the volume. Separate a series of Replay profile names with commas. If a string contains the space character, enclose the string in single quotes (').

`-serialnumber` *`string`*

Specifies the volume serial number. (Available only when running on operating systems that expose serial numbers to the user.)

`-storageprofile string`

Specifies a Storage Profile for the volume. Use the storageprofile show to show a list of available Storage Profiles.

`-storageprofileindex` *`integer`*

Specifies a Storage Profile index for the volume.

`-writecache {true|false}`

Enables or disables volume write cache. Specify true (or 1) to enable volume write cache or specify false (or 0) to disable volume write cache.

Examples

Assign a new volume folder on a volume:

```
volume modify -name 'volume 1' -folder 'vol folder'
```

Assign a Replay profile to a volume:

```
volume modify -name 'volume 1' -replayprofile 'sample replay profile'
volume modify -index 61 -replayprofile 'sample replay profile'
```

Set the maxwrite value on a volume:

```
volume modify -name 'testvol' -maxwrite 16g
volume modify -deviceid 6000d3100000c90000000000000000cb -maxwrite 16g
```

Set volume cache:

```
volume modify -name testvol -readcache true -writecache false
volume modify -name testvol -readcache false -writecache true
volume modify -name testvol -readcache true -writecache true
volume modify -name testvol -readcache false -writecache false
```

volume show

Description

Shows volume information. Output depends on the filter options specified in the command.

Format

```
volume show {options}
```

Options

`-activesize` *integer* `[k|m|g|t]`

Specifies an active size by which to filter the display.

`-activesizeblocks` *integer*

Specifies an active size in blocks by which to filter the display.

`-csv` *filename*

Specifies a csv file in which to save output.

`-deviceid` *string*

Specifies a device ID by which to filter the display. See About Device IDs for information.

`-folder` *string*

Specifies a volume folder name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`-h`

Shows help for command options.

`-index` *string*

Specifies a volume index by which to filter the display.

`-maxwriteblocksize` *integer*

Specifies a maximum write size in blocks by which to filter the display.

`-name` *string*

Specifies a volume name by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`-readcache {true | false}`

Specifies a read cache setting by which to filter the display.

`-replaysize` *integer* `[k|m|g|t]`

Specifies a Replay size by which to filter the display.

`-replaysizeblocks` *integer*

Specifies a Replay size in blocks by which to filter the display.

`-serialnumber string`

Specifies a volume serial number by which to filter the display. (Available only when running on operating systems that expose serial numbers to the user.)

`-status string`

Specifies the volume status by which to filter the display. Valid arguments are:

- **Up**: Returns a list of volumes that are running correctly.
- **Down**: Returns a list of volumes that are not running correctly and cannot be used.
- **Inactive**: Returns a list of volumes that are not mapped to a server.
- **Recycled**: Returns a list of volumes that are in the recycle bin.

`-storageprofile` *`string`*

Specifies a Storage Profile by which to filter the display. Use storageprofile show to show a list of available Storage Profiles.

`-txt` *`filename`*

Specifies a txt file in which to save output.

`-writecache {true | false}`

Specifies a write cache setting by which to filter the display.

`-xml` *`filename`*

Specifies an xml file in which to save output.

Output

For each Storage Center volume, the following information is output to the console in table format.

Output	Description
Index	Shows volume index.
Name	Shows volume name.
Status	Shows volume status: Up, Down, Inactive, or Recycled.
ConfigSize	Shows configured size of the volume.
ActiveSize	Shows active size of the volume.
ReplaySize	Shows Replay size of the volume.
Folder	Shows volume folder.
StorageProfile	Shows volume Storage Profiles.
DeviceID	Shows volume device ID.
SerialNumber	Shows volume serial number.
ConfigSizeBlock	Shows configured size in blocks. (One block equals 512 bytes.)
ActiveSizeBlock	Shows active size in blocks. (One block equals 512 bytes.)
ReplaySizeBlock	Shows Replay size in blocks. (One block equals 512 bytes.)
MaxWriteSizeBlock	Shows maximum write size for the volume in blocks. (One block equals 512 bytes.)

Output	Description
ReadCache	Shows if readcache is enabled.
WriteCache	Shows if write cache is enabled.
MappingInfo	XML output only. For each map shows: index, server, local port, remote port, and LUN.

volume unmap

Description

Deletes all mappings for a volume.

Format

```
volume unmap {-deviceid string | -index integer | -name string | -serialnumber string}
```

Options

`-deviceid string`

Specifies the volume device ID. See About Device IDs for information.

`-h`

Shows help for command options.

`-index integer`

Specifies the volume index.

`-name string`

Specifies the volume name. Names that contain spaces must be enclosed in single quotes.

`-serialnumber string`

Specifies the volume serial number. Available only when running on operating systems that expose serial numbers to the user.

Example

Unmap a volume:

```
volume unmap -name 'volume 1'
volume unmap -deviceid 6000d3100000c90000000000000000c6
volume unmap -index 55
```

volumefolder create

Description

Creates a volume folder.

Format

`volumefolder create -name string {options}`

Options

`-h`

Shows help for command options.

`-name string`

Specifies the volume folder name. Names that contain spaces must be enclosed in single quotes.

`-parent string`

Specifies a parent folder for the volume folder. Names that contain spaces must be enclosed in single quotes.

`-parentindex integer`

Specifies the parent volume folder index for the volume folder.

Example

Create a volume folder:

```
volumefolder create -name 'my folders'
```

volumefolder delete

Description

Deletes a volume folder.

Format

`volumefolder delete {-index integer | -name string} -parent string`

Options

`-h`

Shows help for command options.

`-index string`

Specifies the volume index of the volume folder to delete.

`-name string`

Specifies the name of the volume folder to delete. Names that contain spaces must be enclosed in single quotes.

`-parent string`

Specifies the parent folder for the volume folder. Names that contain spaces must be enclosed in single quotes.

Example

Delete a volume folder:

```
volumefolder delete -name 'my folders'
```

```
volumefolder delete -index 301
```

volumefolder modify

Description

Modifies a volume folder.

Format

```
volumefolder modify {-index integer | -name string} [-parent string | -
parentindex integer]
```

Options

`-h`

Shows help for command options.

`-index integer`

Specifies the index of the volume folder to modify.

`-name string`

Specifies the name of the volume folder to modify. Names that contain spaces must be enclosed in single quotes.

`-parent string`

Specifies the parent folder for the volume folder. Names that contain spaces must be enclosed in single quotes.

`-parentindex integer`

Specifies the parent volume folder index for the volume folder.

Example

Modify a volume folder:

```
volumefolder modify -name 'my folders'
```

```
volumefolder modify -index 77
```

volumefolder show

Description

Shows volume folder information. Output depends on the filter options specified in the command.

Format

```
volumefolder show {options}
```

Options

`–csv` *filename*

Specifies a csv file in which to save output.

`–h`

Shows help for command options.

`–index` *string*

Specifies the index of a volume folder by which to filter the display.

`–name` *string*

Specifies the name of a volume folder by which to filter the display. Names that contain spaces must be enclosed in single quotes.

`–numvolumes`

Specifies the number of volumes in the path by which to filter the display.

`–path` *string*

Specifies a volume folder path by which to filter the display.

`–txt` *filename*

Specifies a txt file in which to save output

`–xml` *filename*

Specifies an xml file in which to save output.

Output

The following information is output to the console in table format.

Output	Description
Index	Shows the index of the volume folder.
Name	Shows the name of the volume folder.
NumVolumes	Shows the number of volumes in the path.

Output	Description
Path	Shows the path for the volume folder.

3

Device IDs

Device IDs identify volumes with a series of numbers and letters. The device ID acts as a substitute to identifying a volume by its name, index, or serial number. This section describes device IDs and provides commands used to modify a device ID.

About Device IDs

When you create a volume, you must specify a volume name. When the volume is created, Storage Center assigns a unique index and device ID to the volume and attempts to determine the volume serial number from each of its mapped servers (if the serial number is exposed by the operating system). On subsequent commands, if you want to identify a volume, you can use:

- Volume name or index
- Device ID
- Serial number (only when running an operating system that exposes volume serial numbers to the user)

When specifying a device ID, replace the string with the device ID name or any string that contains the device ID name. For example, to specify the device ID for a VMWare device, you can use either the device ID name (shown in bold) or the entire Universally Unique Identifier (UUID):

`–deviceid` **6000d31000063000000000000000001c**

`–deviceid 0200020000`**6000d31000063000000000000000001c**`436f6d70656c`

To display a volume device ID or volume serial number, use the **volume show** command.

Examples

The following examples illustrate how to specify the **–deviceid** option with various commands:

volume map command:

```
volume map -deviceid 6000d3100000c90000000000000000cb -server 'Ontario'
```

volume unmap command:

```
volume unmap -deviceid 000d3100000c90000000000000000c6
```

volume modify command:

```
volume modify -deviceid 000d3100000c90000000000000000cb -maxwrite 16g
```

volume delete command:

```
volume delete -deviceid 34234236000d3100000c90000000ca23423432 -purge
```

volume show command:

```
volume show -deviceid 000d3100000c90000000000000000ca -status up
```

replay create command:

```
replay create -deviceid 02000200006000d3100000c900000000000000c436f6d70656c -
name 'Next Replay From CU'
```

replay createview command:

```
replay createview -view 'Test View Bat 0001' -deviceid
6000d3100000c90000000000000000c7 -server 'Ontario' -viewexpire 5
```