

IBM System Storage SAN Volume Controller



CLI Users Guide - Errata

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Introduction

This guide provides errata information that pertains to release 4.3.0 of the *IBM System Storage SAN Volume Controller CLI Users Guide*.

This guide contains the corrections and additions on a per chapter basis. The chapter numbers in this guide correspond directly with the chapter numbers in the *CLI Users Guides* supplied with your SAN Volume Controller.

Who should use this guide

This errata should be used by anyone using the using the *IBM System Storage SAN Volume Controller CLI Users Guide*. You should review the errata contained within this guide and note the details with respect to the copy of the *CLI Users Guide* supplied with your SAN Volume Controller.

Last Update

This document was last updated: June 10, 2008

Change History

The following revisions have been made to this document:

Revision Date	Sections Modified
June 10, 2008	New publication

Table 1: Change History

Chapter 11. Virtual disk commands

The following correction should be noted.

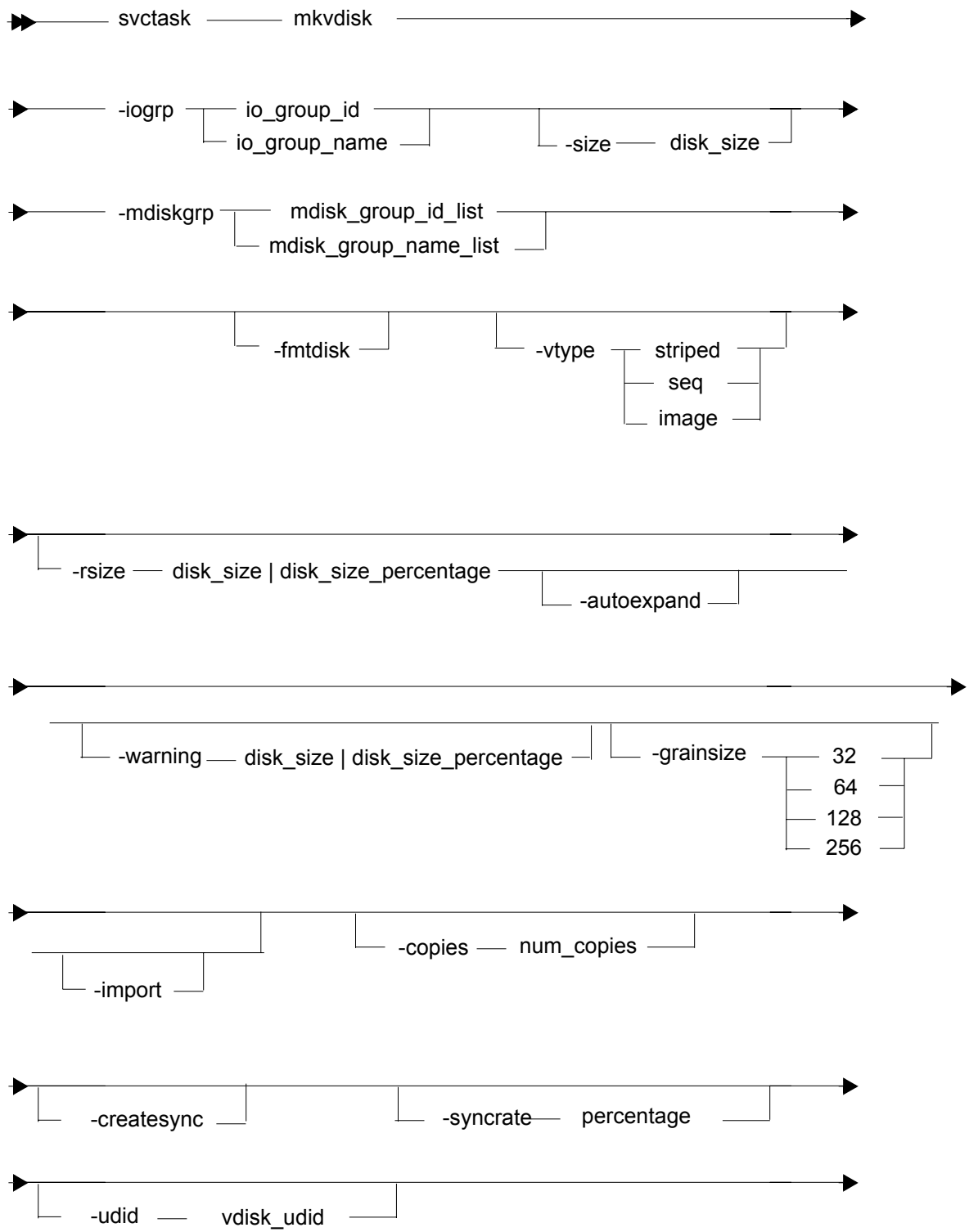
mkvdisk

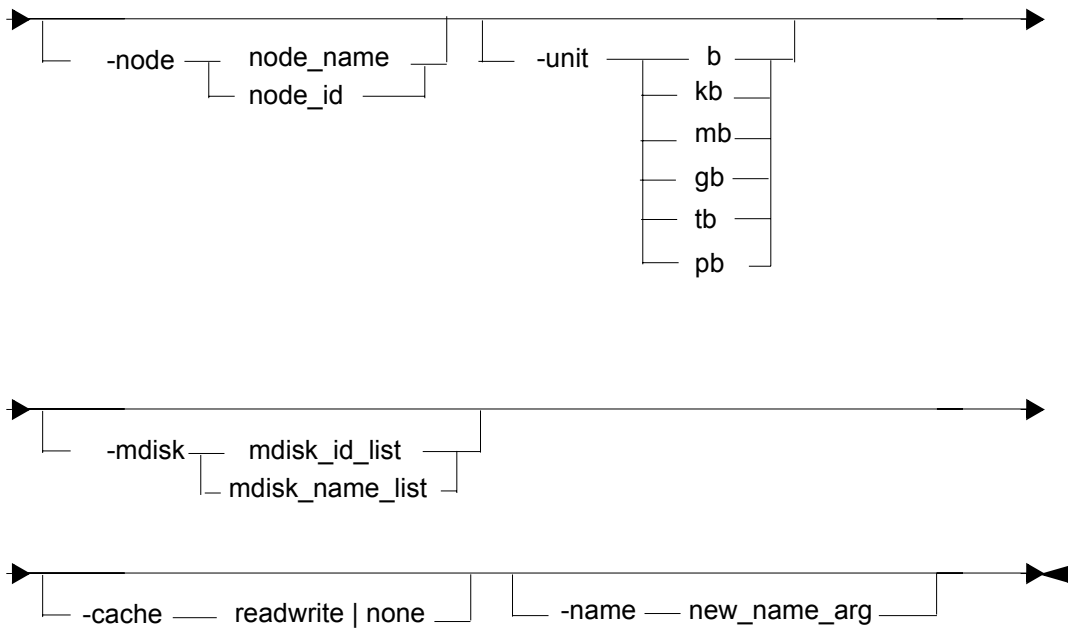
The following section has been corrected.

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The mkvdisk command creates sequential, striped, or image mode virtual disk objects. When they are mapped to a host object, these objects are seen as disk drives with which the host can perform I/O operations.

Syntax





Parameters

-mdiskgrp `mdisk_group_id_list | mdisk_group_name_list`

(Required) Specifies one or more managed disk groups to use when you are creating this virtual disk. If you are creating multiple copies, you must specify one managed disk group per copy. The primary copy is allocated from the first managed disk group in the list.

-iogrp `io_group_id | io_group_name`

(Required) Specifies the I/O group (node pair) with which to associate this virtual disk.

-udid `vdisk_udid`

(Optional) Specifies the unit number (udid) for the disk. The udid is an identifier that is required to support OpenVMS hosts; no other systems use this parameter. Valid options are a decimal number 0 - 32 767, or a hexadecimal number 0 - 0x7FFF. A hexadecimal number must be preceded by 0x (for example, 0x1234).

-size `disk_size`

(Required for sequential [seq] or striped VDisk creation) (Optional for image VDisk creation) Specifies the capacity of the virtual disk, which is used with the value of the unit. All capacities, including changes, must be in multiples of 512 bytes. An error occurs if you specify a capacity that is not a multiple of 512, which can only happen when byte units (-b) are used. However, an entire extent is reserved even if it is only partially used. The default capacity is in MB. You can specify a capacity of 0. Specify the size in bytes in multiples of logical block address (LBA) sizes.

Note: If you do not specify the -size parameter when you create an image mode disk, the entire MDisk capacity is used.

-rsize disk_size | disk_size_percentage%
(Optional) Makes the VDisk space-efficient; otherwise, the VDisk is fully allocated. Specify the `disk_size | disk_size_percentage` value using an integer, or an integer immediately followed by the percent character (%). Specify the units for a `disk_size` integer using the `-unit` parameter; the default is MB. The `-rsize` value can be greater than, equal to, or less than the size of the VDisk.

-warning disk_size | disk_size_percentage%
(Optional) Requires that the `-rsize` parameter also be specified. Specifies a threshold at which a warning error log is generated for VDisk copies. A warning is generated when the used disk capacity on the space-efficient copy first exceeds the specified threshold. You can specify a `disk_size` integer, which defaults to MBs unless the `-unit` parameter is specified; or you can specify a `disk_size%`, which is a percentage of the virtual disk size. If `-autoexpand` is enabled, the default value for `-warning` is 80% of the virtual disk capacity. If `-autoexpand` is not enabled, the default value for `warning` is 80% of the real capacity. To disable warnings, specify 0 or 0%.

-autoexpand
(Optional) Specifies that space-efficient copies automatically expand their real capacities by allocating new extents from their managed disk group. Requires that the `-rsize` parameter also be specified. If the `-autoexpand` parameter is specified, the `-rsize` parameter specifies a capacity that is reserved by the copy. This protects the copy from going offline when its managed disk group runs out of space by allowing the managed disk group to consume this reserved space first.

The parameter has no immediate effect on image mode copies. However, if the image mode copy is subsequently migrated to managed mode, the copy is then automatically expanded.

-grainsize 32 | 64 | 128 | 256
(Optional) Sets the grain size (KB) for a space-efficient VDisk. This parameter also requires that the `-rsize` parameter also be specified. The default is 32 KB. If you are using the space-efficient VDisk in a FlashCopy map, use the same grain size as the map grain size for best performance. If you are using the space-efficient VDisk directly with a host system, use a small grain size.

-import
(Optional) Imports a space-efficient VDisk from the Mdisk. Requires that the `-rsize` parameter also be specified.

-copies num_copies
(Optional) Specifies the number of copies to create. The `num_copies` value can be 1 or 2. Setting the value to 2 creates a mirrored VDisk. The default value is 1.

-syncrate percentage
(Optional) Specifies the copy synchronization rate, as a percentage of the peak synchronization rate. A value of zero (0) prevents synchronization. The default value is 50.

-createsync

(Optional) Creates copies in sync. Use this parameter if you have already formatted the MDisks, or when read stability to unwritten areas of the VDisk is not required.

-fmtdisk

(Optional) Specifies that the virtual disk be formatted before it can be used. The **-fmtdisk** parameter formats (sets to all zeros) the extents that make up this VDisk after it is created. If this parameter is used, the command completes asynchronously; you can query the status using the **svcinfolsvdiskprogress** command.

The **-fmtdisk** parameter is not required when creating space-efficient virtual disks. Space-efficient VDIsks return zeros for extents that have not been written to.

The **-fmtdisk** parameter synchronizes mirrored copies by default.

Note: You cannot specify this parameter with the **-vtype** image parameter.

-vtype seq | striped | image

(Optional) Specifies the virtualization type. When creating sequential or image mode VDIsks, you must also specify the **-mdisk** parameter. The default virtualization type is striped.

-node node_id | node_name

(Optional) Specifies the preferred node ID or the name for I/O operations to this virtual disk. You can use the **-node** parameter to specify the preferred access node.

Note: This parameter is required for the subsystem device driver (SDD). The cluster chooses a default if you do not supply this parameter.

-unit b | kb | mb | gb | tb | pb

(Optional) Specifies the data units to use in conjunction with the capacity that is specified by the **-size** parameter.

-mdisk mdisk_id_list | mdisk_name_list

(Optional) Specifies one or more managed disks. For sequential and image mode VDIsks, the number of MDisks must match the number of copies. For sequential mode VDIsks, each MDisk must belong to the specified MDisk group. For striped VDIsks, you cannot specify the **-mdisk** parameter if the **-copies** value is greater than 1. When creating a single copy striped VDisk, you can specify a list of VDIsks to stripe across.

-name new_name_arg

(Optional) Specifies a name to assign to the new virtual disk.

-cache readwrite | none

(Optional) Specifies the caching options for the VDisk. Valid entries are **readwrite** or **none**. The default is **readwrite**. If you do not specify the **-cache** parameter, the default value (**readwrite**) is used.

Description

This command creates a new virtual disk object. You can use the command to create a variety of types of virtual disk objects, making it one of the most complex commands.

You must decide which managed disk group or groups provide the storage for the VDisk. Use the `svcinfolsmdiskgrp` command to list the available managed disk groups and the amount of free storage in each group. If you are creating a VDisk with more than one copy, each MDisk group that you specify must have enough space for the size of the VDisk.

Choose an I/O group for the VDisk. This determines which nodes in the cluster process the I/O requests from the host systems. If you have more than one I/O group, ensure that you distribute the VDIs between the I/O groups so that the I/O workload is shared evenly between all nodes. Use the `svcinfolsiogrp` command to show the I/O groups and the number of virtual disks that are assigned to each I/O group.

Note: It is normal for clusters with more than one I/O group to have MDisk groups that have VDIs in different I/O groups. FlashCopy processing can make copies of VDIs whether the source and target VDIs are in the same I/O group. If, however, you plan to use intracluster Metro or Global Mirror operations, ensure that both the master and auxiliary VDisk are in the same I/O group.

Specify the virtualization type using the `-vtype` parameter; the supported types are sequential (seq), striped, and image.

sequential (seq)

This virtualization type creates the virtual disk using sequential extents from the specified MDisk (or MDisks, if creating multiple copies). The command fails if there are not enough sequential extents on the specified MDisk.

striped

This is the default virtualization type. If the `-vtype` parameter is not specified, striped is the default; all managed disks in the managed disk group are used to create the virtual disk. The striping is at an extent level; one extent from each managed disk in the group is used. For example, a managed disk group with 10 managed disks uses one extent from each managed disk, then it uses the 11th extent from the first managed disk, and so on.

If the `-mdisk` parameter is also specified, you can supply a list of managed disks to use as the stripe set. This can be two or more managed disks from the same managed disk group. The same circular algorithm is used across the striped set. However, a single managed disk can be specified more than once in the list. For example, if you enter `-mdisk 0:1:2:1`, the extents are from the following managed disks: 0, 1, 2, 1, 0, 1, 2, and so forth. All MDisks that are specified in the `-mdisk` parameter must be in the managed mode.

A capacity of 0 is allowed.

image

This virtualization type allows image mode virtual disks to be created when a managed disk already has data on it, perhaps from a previrtualized subsystem. When an image mode virtual disk is created, it directly corresponds to the (previously unmanaged) managed disk that it was created from. Therefore, with the exception of space-efficient

image mode VDIs, virtual disk logical block address (LBA) x equals managed disk LBA x. You can use this command to bring a nonvirtualized disk under the control of the cluster. After it is under the control of the cluster, you can migrate the virtual disk from the single managed disk. When it is migrated, the virtual disk is no longer an image mode virtual disk.

You can add image mode VDIs to an already populated MDisk group with other types of VDIs, such as a striped or sequential.

Note: An image mode VDisk must be at least 512 bytes (capacity cannot be 0). That is, the minimum size that can be specified for an image mode VDisk must be the same as the MDisk group extent size that it is added to, with the minimum of 16 MB.

You must use the `-mdisk` parameter to specify an MDisk that has a mode of unmanaged. The `-fmtmdisk` parameter cannot be used to create an image mode VDisk.

Note: If you create a mirrored VDisk from two image mode MDisks without specifying a `-capacity` value, the capacity of the resulting VDisk is the smaller of the two MDisks, and the remaining space on the larger MDisk is not accessible.

The command returns the IDs of the newly created VDisk.

Attention:

1. Do not create a VDisk in an offline I/O group. You must ensure that the I/O group is online before you create a VDisk to avoid any data loss. This applies in particular to recreating VDIs that are assigned the same object ID.
2. To create an image mode disk, you must already have a quorum disk in the cluster because an image mode disk cannot be used to hold quorum data. See "Creating a quorum disk" in the IBM System Storage SAN Volume Controller: Software Installation and Configuration Guide for more details.
3. The command fails if either limit of 2048 VDIs per IO Group or 8192 VDisk copies per cluster is reached.

Possible failures

Note: If you receive an error indicating that the licensed virtualization capacity has been exceeded, the command still completed successfully. However, the return code indicates a license violation. Contact your IBM service representative to upgrade your license.

- * CMMVC5707E Required parameters are missing.
- * CMMVC5767E One or more of the parameters specified are invalid or a parameter is missing.
- * CMMVC5786E The action failed because the cluster is not in a stable state.
- * CMMVC5807E The action failed because the managed disk (MDisk) cannot be changed to the specified mode.
- * CMMVC5808E The action failed because the managed disk (MDisk) does not exist.
- * CMMVC5826E The virtual disk (VDisk) was not created because an entity that was specified in the command does not exist.

- * CMMVC5827E The command failed as a result of an inconsistency between two or more of the entered parameters.
- * CMMVC5828E The virtual disk (VDisk) was not created because the I/O group contains no nodes.
- * CMMVC5829E The image-mode virtual disk (VDisk) was not created because the number of managed disks (MDisks) specified is greater than one.
- * CMMVC5830E The image-mode virtual disk (VDisk) was not created because no managed disk (MDisk) was specified in the command.
- * CMMVC5831E The virtual disk (VDisk) was not created because the preferred node for I/O operations is not part of the I/O group.
- * CMMVC5857E The action failed because the managed disk (MDisk) does not exist or it is not a member of the managed disk (MDisk) group.
- * CMMVC5858E The action failed because the virtual disk (VDisk) is in the wrong mode, the managed disk (MDisk) is in the wrong mode, or both are in the wrong mode.
- * CMMVC5860E The action failed because there were not enough extents in the managed disk (MDisk) group.

Note: This error is also returned if a stripe set of MDisks has been specified and one or more of these MDisks does not contain enough free extents to complete the creation of the VDisk. In this case, the MDisk group is reporting that it has enough free capacity to create the VDisk. You can check the free capacity on each MDisk by issuing the `svcinflsfreeextents mdiskname/ID` command. Alternatively, if you do not specify a stripe set, you can allow the system to choose the free extents automatically.

- * CMMVC5861E The action failed because there were not enough extents on the managed disk (MDisk).
- * CMMVC6034E The action failed because the maximum number of objects has been reached.
- * CMMVC6226E (Possible for image creation only) The action was not completed because the cluster has reached the maximum number of extents in MDisk Groups.
- * CMMVC6252E The command failed authorization because the session SSH key is wrong or was deleted.
- * CMMVC6253E The command failed authorization because the session SSH key does not have the requisite role.
- * CMMVC6336E The virtual disk (VDisk) copy was not created because the grain size must be 32, 64, 128 or 256.
- * CMMVC6337E The action failed because the warning size must be a multiple of 512 bytes.
- * CMMVC6338E The action failed because the warning size can not be larger than the virtual size.
- * CMMVC6339E The virtual disk (VDisk) copy was not created because the virtual size was not provided.
- * CMMVC6340E The action failed because the value supplied for real size is not a multiple of 512 bytes.

An invocation example

```
svctask mkvdisk -mdiskgrp Group0 -size 0 -iogrp 0 -vtype striped -mdisk mdisk1 -node 1
```

The resulting output

```
Virtual Disk, id [1], successfully created
```

An invocation example for creating an image mode VDisk

```
svctask mkvdisk -mdiskgrp Group0 -iogrp 0 -vtype image -mdisk mdisk2 -node 1
```

The resulting output

Virtual Disk, id [2], successfully created

An invocation example for creating a new VDisk

```
svctask mkvdisk -mdiskgrp Group0 -size 0 -unit kb -iogrp 0 -vtype striped -mdisk mdisk1 -node 1  
-udid 1234
```

The resulting output

Virtual Disk id [2], successfully created

An invocation example for creating a space-efficient VDisk

```
svctask mkvdisk -mdiskgrp Group0 -iogrp 0 -vtype striped -size 10 -unit gb -rsize 20%  
-autoexpand  
-grainsize 32
```

The resulting output

Virtual Disk id [1], successfully created

An invocation example for creating a mirrored image-mode VDisk

```
svctask mkvdisk -mdiskgrp Group0:Group0 -mdisk mdisk2:mdisk3 -iogrp 0 -vtype image -copies 2
```

The resulting output

Virtual Disk id [1], successfully created

An invocation example for creating a mirrored VDisk

```
svctask mkvdisk -iogrp 0 -mdiskgrp 0:1 -size 500 -copies 2
```

The resulting output

Virtual Disk id [5], successfully created

Chapter 12. Managed disk group commands

The following correction should be noted.

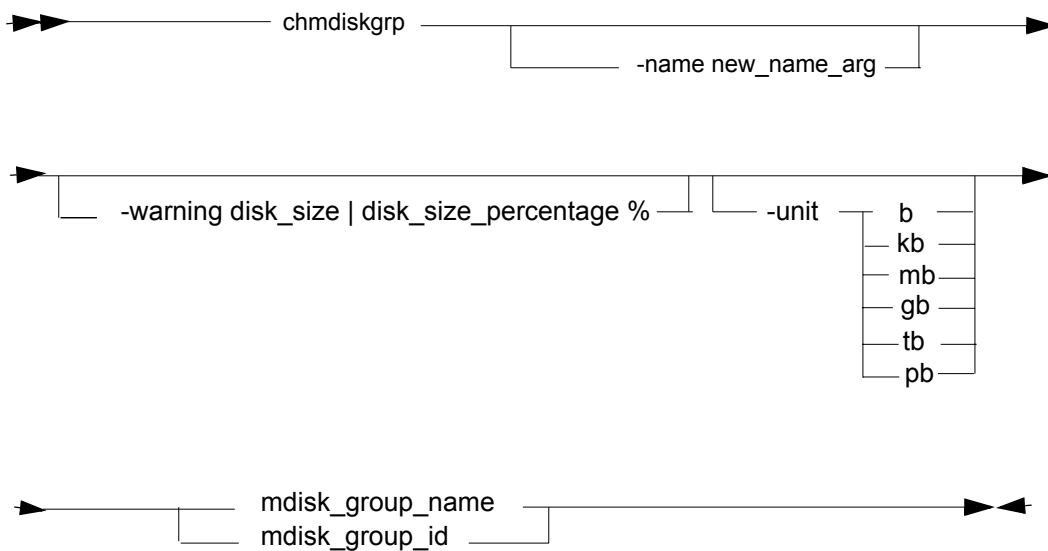
chmdiskgrp

The following description has been corrected.

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Use the chmdiskgrp command to modify the warning threshold, or name assigned to a managed disk group.

Syntax



Parameters

-name new_name_arg

(Optional) Specifies the new name of the managed disk group.

-warning disk_size | disk_size_percentage%

(Optional) Sets a threshold at which a warning will be generated. The warning will be generated the first time that threshold is exceeded by the used disk capacity in the MDisk group. You can specify a disk_size integer, which defaults to megabytes (MB) unless the -unit parameter is specified, or you can specify a disk_size%, which is a percentage of the MDisk group size. To disable warnings, specify 0 or 0%.

-unit b | kb | mb | gb | tb | pb

(Optional) Specifies the data units for the -warning parameter.

mdisk_group_id | mdisk_group_name

(Required) Specifies the ID or name of the managed disk group to modify.

Description

This command modifies the name, or label, assigned to a given managed disk group. Subsequently, you can use the new name to refer to the managed disk group.

The command can also be used to set the warning threshold for the managed disk group. The warning threshold is the threshold at which a warning is generated when it is exceeded by the used disk capacity in the MDisk group.

Possible failures

- * CMMVC5786E The action failed because the cluster is not in a stable state.
- * CMMVC5816E The action failed because an entity that was specified in the command does not exist.
- * CMMVC5817E The managed disk (MDisk) group was not renamed because the name was not valid.

An invocation example

```
svctask chmdiskgrp -name testmdiskgrp Group0
```

The resulting output

No feedback