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*Red Hat Enterprise Linux Release 9.2 Manual Pages on 'lvchange.8' command*

***\$ man lvchange.8***

LVCHANGE(8) System Manager's Manual LVCHANGE(8)

NAME

lvchange ? Change the attributes of logical volume(s)

## SYNOPSIS

lvchange option\_args position\_args

[ option\_args ]

-a|--activate y|n|ay

--activationmode partial|degraded|complete

--addtag Tag

--alloc contiguous|cling|cling\_by\_tags|normal|anywhere|inherit

-A|--autobackup y|n

--cachemode writethrough\writeback\passthrough

--cachePolicy String

--cachesettings String

--commandprofile String

--compression vln

--config String

### -Cl--continuous vln

-dl--debug

--deduplication vln

--deltag Tag

--detachprofile

## devices PV

```
--devicesfile String
--discards passdown|nopassdown|ignore
--driverloaded y|n
--errorwhenfull y|n
-f|--force
-h|--help
-K|--ignoreactivationskip
--ignorelockingfailure
--ignoremonitoring
--journal String
--lockopt String
--longhelp
-j|--major Number
--[raid]maxrecoveryrate Size[k|UNIT]
--metadataprofile String
--minor Number
--[raid]minrecoveryrate Size[k|UNIT]
--monitor y|n
--nohints
--nolocking
--noudevsync
-P|--partial
-p|--permission rw|r
-M|--persistent y|n
--poll y|n
--profile String
-q|--quiet
-r|--readahead auto|none|Number
--readonly
--rebuild PV
--refresh
--reportformat basic|json|json_std
--resync
```

```
-S|--select String
-k|--setactivationskip y|n
--setautoactivation y|n
--[raid]syncaction check|repair
--sysinit
-t|--test
--vdosettings String
-v|--verbose
--version
--[raid]writebehind Number
--[raid]writemostly PV[:t|n|y]
-y|--yes
-Z|--zero y|n
```

## DESCRIPTION

lvchange changes LV attributes in the VG, changes LV activation in the kernel, and includes other utilities for LV maintenance.

## USAGE

Change a general LV attribute.

For options listed in parentheses, any one is required, after which the others are optional.

lvchange

```
( -C|--contiguous y|n
-p|--permission rw|r
-r|--readahead auto|none|Number
-k|--setactivationskip y|n
-Z|--zero y|n
-M|--persistent n
--addtag Tag
--deltag Tag
--alloc contiguous|cling|cling_by_tags|normal|anywhere|inherit
--compression y|n
--deduplication y|n
--detachprofile
```

```
--metadataprofile String  
--profile String  
--setautoactivation y|n  
--errorwhenfull y|n  
--discards passdown|nopassdown|ignore  
--cachemode writethrough|writeback|passthrough  
--cachepolicy String  
--cachesettings String  
--[raid]minrecoverystart Size[k|UNIT]  
--[raid]maxrecoverystart Size[k|UNIT]  
--vdosettings String  
--[raid]writebehind Number  
--[raid]writemostly PV[:t|n|y] )  
VG|LV|Tag|Select ...  
[ -a|--activate y|n|ay ]  
[ --poll y|n ]  
[ --monitor y|n ]  
[ COMMON_OPTIONS ]
```

?

Resyncronize a mirror or raid LV.

Use to reset 'R' attribute on a not initially synchronized LV.

lvchange --resync VG|LV1|Tag|Select ...

```
[ -a|--activate y|n|ay ]
```

```
[ COMMON_OPTIONS ]
```

LV1 types: mirror raid

?

Resynchronize or check a raid LV.

lvchange --syncaction check|repair VG|LV1|Tag|Select ...

```
[ COMMON_OPTIONS ]
```

LV1 types: raid

?

Reconstruct data on specific PVs of a raid LV.

lvchange --rebuild PV VG|LV1|Tag|Select ...

[ COMMON\_OPTIONS ]

LV1 types: raid

?

Activate or deactivate an LV.

lvchange -a|--activate y|n|ay VG|LV|Tag|Select ...

[ -P|--partial ]

[ -K|--ignoreactivationskip ]

[ --activationmode partial|degraded|complete ]

[ --poll y|n ]

[ --monitor y|n ]

[ --ignorelockingfailure ]

[ --sysinit ]

[ --readonly ]

[ COMMON\_OPTIONS ]

?

Reactivate an LV using the latest metadata.

lvchange --refresh VG|LV|Tag|Select ...

[ -P|--partial ]

[ --activationmode partial|degraded|complete ]

[ --poll y|n ]

[ --monitor y|n ]

[ COMMON\_OPTIONS ]

?

Start or stop monitoring an LV from dmeventd.

lvchange --monitor y|n VG|LV|Tag|Select ...

[ COMMON\_OPTIONS ]

?

Start or stop processing an LV conversion.

lvchange --poll y|n VG|LV|Tag|Select ...

[ --monitor y|n ]

[ COMMON\_OPTIONS ]

?

Make the minor device number persistent for an LV.

```
lvchange -M|--persistent y --minor Number LV
```

```
[ -j|--major Number ]
```

```
[ -a|--activate y|n|ay ]
```

```
[ --poll y|n ]
```

```
[ --monitor y|n ]
```

```
[ COMMON_OPTIONS ]
```

```
?
```

Common options for command:

```
[ -A|--autobackup y|n ]
```

```
[ -f|--force ]
```

```
[ -S|--select String ]
```

```
[ --ignoremonitoring ]
```

```
[ --noudevsync ]
```

```
[ --reportformat basic|json|json_std ]
```

Common options for lvm:

```
[ -d|--debug ]
```

```
[ -h|--help ]
```

```
[ -q|--quiet ]
```

```
[ -t|--test ]
```

```
[ -v|--verbose ]
```

```
[ -y|--yes ]
```

```
[ --commandprofile String ]
```

```
[ --config String ]
```

```
[ --devices PV ]
```

```
[ --devicesfile String ]
```

```
[ --driverloaded y|n ]
```

```
[ --journal String ]
```

```
[ --lockopt String ]
```

```
[ --longhelp ]
```

```
[ --nohints ]
```

```
[ --nolocking ]
```

```
[ --profile String ]
```

```
[ --version ]
```

## OPTIONS

**-a|--activate y|n|ay**

Change the active state of LVs. An active LV can be used through a block device, allowing data on the LV to be accessed. y makes LVs active, or available. n makes LVs inactive, or unavailable. The block device for the LV is added or removed from the system using device-mapper in the kernel. A symbolic link /dev/VGName/LVName pointing to the device node is also added/reMOVED. All software and scripts should access the device through the symbolic link and present this as the name of the device. The location and name of the underlying device node may depend on the distribution, configuration (e.g. udev), or release version. ay specifies autoactivation, which is used by system-generated activation commands. By default, LVs are autoactivated. An autoactivation property can be set on a VG or LV to disable autoactivation, see --setautoactivation y|n in vgchange, lvchange, vgcreate, and lvcreate. Display the property with vgs or lvs "-o autoactivation". The lvm.conf(5) auto\_activation\_volume\_list includes names of VGs or LVs that should be autoactivated, and anything not listed is not autoactivated. When auto\_activation\_volume\_list is undefined (the default), it has no effect. If auto\_activation\_volume\_list is defined and empty, no LVs are autoactivated. Items included by auto\_activation\_volume\_list will not be autoactivated if the autoactivation property has been disabled. See lvmlockd(8) for more information about activation options ey and sy for shared VGs.

**--activationmode partial|degraded|complete**

Determines if LV activation is allowed when PVs are missing, e.g. because of a device failure. complete only allows LVs with no missing PVs to be activated, and is the most restrictive mode. degraded allows RAID LVs with missing PVs to be activated. (This does not include the "mirror" type, see "raid1" in

stead.) partial allows any LV with missing PVs to be activated, and should only be used for recovery or repair. For default, see lvm.conf(5) activation\_mode. See lvmraid(7) for more information.

#### --addtag Tag

Adds a tag to a PV, VG or LV. This option can be repeated to add multiple tags at once. See lvm(8) for information about tags.

#### --alloc contiguous|cling|cling\_by\_tags|normal|anywhere|inherit

Determines the allocation policy when a command needs to allocate Physical Extents (PEs) from the VG. Each VG and LV has an allocation policy which can be changed with vgchange/lvchange, or overridden on the command line. normal applies common sense rules such as not placing parallel stripes on the same PV. inherit applies the VG policy to an LV. contiguous requires new PEs be placed adjacent to existing PEs. cling places new PEs on the same PV as existing PEs in the same stripe of the LV. If there are sufficient PEs for an allocation, but normal does not use them, anywhere will use them even if it reduces performance, e.g. by placing two stripes on the same PV. Optional positional PV args on the command line can also be used to limit which PVs the command will use for allocation. See lvm(8) for more information about allocation.

#### -A|--autobackup y|n

Specifies if metadata should be backed up automatically after a change. Enabling this is strongly advised! See vgcfgbackup(8) for more information.

#### --cachemode writethrough|writeback|passthrough

Specifies when writes to a cache LV should be considered complete. writeback considers a write complete as soon as it is stored in the cache pool. writethrough considers a write complete only when it has been stored in both the cache pool and on the origin LV. While writethrough may be slower for writes, it is more resilient if something should happen to a device association.

ated with the cache pool LV. With passthrough, all reads are served from the origin LV (all reads miss the cache) and all writes are forwarded to the origin LV; additionally, write hits cause cache block invalidates. See lvmcache(7) for more information.

--cachepolicy String

Specifies the cache policy for a cache LV. See lvmcache(7) for more information.

--cachesettings String

Specifies tunable kernel options for dm-cache or dm-writecache LVs. Use the form 'option=value' or 'option1=value option2=val? ue', or repeat --cachesettings for each option being set. These settings override the default kernel behaviors which are usually adequate. To remove cachesettings and revert to the default kernel behaviors, use --cachesettings 'default' for dm-cache or an empty string --cachesettings "" for dm-writecache. See lvm? cache(7) for more information.

--commandprofile String

The command profile to use for command configuration. See lvm.conf(5) for more information about profiles.

--compression y|n

Controls whether compression is enabled or disable for VDO volume. See lvmvdo(7) for more information about VDO usage.

--config String

Config settings for the command. These override lvm.conf(5) settings. The String arg uses the same format as lvm.conf(5), or may use section/field syntax. See lvm.conf(5) for more information about config.

-C|--contiguous y|n

Sets or resets the contiguous allocation policy for LVs. Default is no contiguous allocation based on a next free principle. It is only possible to change a non-contiguous allocation policy to contiguous if all of the allocated physical extents in

the LV are already contiguous.

**-d|--debug ...**

Set debug level. Repeat from 1 to 6 times to increase the detail of messages sent to the log file and/or syslog (if configured).

**--deduplication y|n**

Controls whether deduplication is enabled or disable for VDO volume. See lvmvdo(7) for more information about VDO usage.

**--deltag Tag**

Deletes a tag from a PV, VG or LV. This option can be repeated to delete multiple tags at once. See lvm(8) for information about tags.

**--detachprofile**

Detaches a metadata profile from a VG or LV. See lvm.conf(5) for more information about profiles.

**--devices PV**

Restricts the devices that are visible and accessible to the command. Devices not listed will appear to be missing. This option can be repeated, or accepts a comma separated list of devices. This overrides the devices file.

**--devicesfile String**

A file listing devices that LVM should use. The file must exist in /etc/lvm/devices/ and is managed with the lvmdevices(8) command. This overrides the lvm.conf(5) devices/devicesfile and devices/use\_devicesfile settings.

**--discards passdown|nopassdown|ignore**

Specifies how the device-mapper thin pool layer in the kernel should handle discards. ignore causes the thin pool to ignore discards. nopassdown causes the thin pool to process discards itself to allow reuse of unneeded extents in the thin pool. passdown causes the thin pool to process discards itself (like nopassdown) and pass the discards to the underlying device. See lvmthin(7) for more information.

**--driverloaded y|n**

If set to no, the command will not attempt to use device-mapper.

For testing and debugging.

**--errorwhenfull y|n**

Specifies thin pool behavior when data space is exhausted. When yes, device-mapper will immediately return an error when a thin pool is full and an I/O request requires space. When no, device-mapper will queue these I/O requests for a period of time to allow the thin pool to be extended. Errors are returned if no space is available after the timeout. (Also see dm-thin-pool kernel module option no\_space\_timeout.) See lvmthin(7) for more information.

**-f|--force ...**

Override various checks, confirmations and protections. Use with extreme caution.

**-h|--help**

Display help text.

**-K|--ignoreactivationskip**

Ignore the "activation skip" LV flag during activation to allow LVs with the flag set to be activated.

**--ignorelockingfailure**

Allows a command to continue with read-only metadata operations after locking failures.

**--ignoremonitoring**

Do not interact with dmeventd unless --monitor is specified. Do not use this if dmeventd is already monitoring a device.

**--journal String**

Record information in the systemd journal. This information is in addition to information enabled by the lvm.conf log/journal setting. command: record information about the command. out? put: record the default command output. debug: record full command debugging.

**--lockopt String**

Used to pass options for special cases to lvmlockd. See lvm?

lockd(8) for more information.

--longhelp

Display long help text.

-j|--major Number

Sets the major number of an LV block device.

--[raid]maxrecoveryrate Size[k|UNIT]

Sets the maximum recovery rate for a RAID LV. The rate value is an amount of data per second for each device in the array. Setting the rate to 0 means it will be unbounded. See lvmraid(7) for more information.

--metadataprofile String

The metadata profile to use for command configuration. See lvm.conf(5) for more information about profiles.

--minor Number

Sets the minor number of an LV block device.

--[raid]minrecoveryrate Size[k|UNIT]

Sets the minimum recovery rate for a RAID LV. The rate value is an amount of data per second for each device in the array. Setting the rate to 0 means it will be unbounded. See lvmraid(7) for more information.

--monitor y|n

Start (yes) or stop (no) monitoring an LV with dmeventd.

dmeventd monitors kernel events for an LV, and performs automated maintenance for the LV in response to specific events. See dmeventd(8) for more information.

--nohints

Do not use the hints file to locate devices for PVs. A command may read more devices to find PVs when hints are not used. The command will still perform standard hint file invalidation where appropriate.

--nolocking

Disable locking. Use with caution, concurrent commands may produce incorrect results.

--noudevsync

Disables udev synchronisation. The process will not wait for notification from udev. It will continue irrespective of any possible udev processing in the background. Only use this if udev is not running or has rules that ignore the devices LVM creates.

-P|--partial

Commands will do their best to activate LVs with missing PV extents. Missing extents may be replaced with error or zero segments according to the missing\_stripe\_filler setting. Metadata may not be changed with this option.

-p|--permission rw|r

Set access permission to read only r or read and write rw.

-M|--persistent y|n

When yes, makes the specified minor number persistent.

--poll y|n

When yes, start the background transformation of an LV. An incomplete transformation, e.g. pvmove or lvconvert interrupted by reboot or crash, can be restarted from the last checkpoint with --poll y. When no, background transformation of an LV will not occur, and the transformation will not complete. It may not be appropriate to immediately poll an LV after activation, in which case --poll n can be used to defer polling until a later --poll y command.

--profile String

An alias for --commandprofile or --metadaprofile, depending on the command.

-q|--quiet ...

Suppress output and log messages. Overrides --debug and --verbose. Repeat once to also suppress any prompts with answer 'no'.

-r|--readahead auto|none|Number

Sets read ahead sector count of an LV. auto is the default which allows the kernel to choose a suitable value automatically?

ly. none is equivalent to zero.

#### --readonly

Run the command in a special read-only mode which will read on-disk metadata without needing to take any locks. This can be used to peek inside metadata used by a virtual machine image while the virtual machine is running. No attempt will be made to communicate with the device-mapper kernel driver, so this option is unable to report whether or not LVs are actually in use.

#### --rebuild PV

Selects a PV to rebuild in a raid LV. Multiple PVs can be rebuilt by repeating this option. Use this option in place of --resync or --syncaction repair when the PVs with corrupted data are known, and their data should be reconstructed rather than reconstructing default (rotating) data. See lvmraid(7) for more information.

#### --refresh

If the LV is active, reload its metadata. This is not necessary in normal operation, but may be useful if something has gone wrong, or if some form of manual LV sharing is being used.

#### --reportformat basic|json|json\_std

Overrides current output format for reports which is defined globally by the report/output\_format setting in lvm.conf(5). basic is the original format with columns and rows. If there is more than one report per command, each report is prefixed with the report name for identification. json produces report output in JSON format. json\_std produces report output in JSON format which is more compliant with JSON standard. See lvmreport(7) for more information.

#### --resync

Initiates mirror synchronization. Synchronization generally happens automatically, but this option forces it to run. Also see --rebuild to synchronize a specific PV. During synchronization, data is read from the primary mirror device and copied to the

others. This can take considerable time, during which the LV is without a complete redundant copy of the data. See lvmraid(7) for more information.

#### **-S|--select String**

Select objects for processing and reporting based on specified criteria. The criteria syntax is described by --select help and lvmreport(7). For reporting commands, one row is displayed for each object matching the criteria. See --options help for selectable object fields. Rows can be displayed with an additional "selected" field (-o selected) showing 1 if the row matches the selection and 0 otherwise. For non-reporting commands which process LVM entities, the selection is used to choose items to process.

#### **-k|--setactivationskip y|n**

Persistently sets (yes) or clears (no) the "activation skip" flag on an LV. An LV with this flag set is not activated unless the --ignoreactivationskip option is used by the activation command. This flag is set by default on new thin snapshot LVs. The flag is not applied to deactivation. The current value of the flag is indicated in the lvs lv\_attr bits.

#### **--setautoactivation y|n**

Set the autoactivation property on a VG or LV. Display the property with vgs or lvs "-o autoactivation". When the autoactivation property is disabled, the VG or LV will not be activated by a command doing autoactivation (vgchange, lvchange, or pvscan using -aay.) If autoactivation is disabled on a VG, no LVs will be autoactivated in that VG, and the LV autoactivation property has no effect. If autoactivation is enabled on a VG, autoactivation can be disabled for individual LVs.

#### **--[raid]syncaction check|repair**

Initiate different types of RAID synchronization. This causes the RAID LV to read all data and parity blocks in the array and check for discrepancies (mismatches between mirrors or incorrect

parity values). check will count but not correct discrepancies.

repair will correct discrepancies. See lvs(8) for reporting discrepancies found or repaired.

#### --sysinit

Indicates that vgchange/lvchange is being invoked from early system initialisation scripts (e.g. rc.sysinit or an initrd), before writable filesystems are available. As such, some functionality needs to be disabled and this option acts as a short-cut which selects an appropriate set of options. Currently, this is equivalent to using --ignorelockingfailure, --ignoremonitoring, --poll n, and setting env var LVM\_SUPPRESS\_LOCKING\_FAIL?URE\_MESSAGES. vgchange/lvchange skip autoactivation, and defer to pvscan autoactivation.

#### -t|--test

Run in test mode. Commands will not update metadata. This is implemented by disabling all metadata writing but nevertheless returning success to the calling function. This may lead to unusual error messages in multi-stage operations if a tool relies on reading back metadata it believes has changed but hasn't.

#### --vdosettings String

Specifies tunable VDO options for VDO LVs. Use the form 'option=value' or 'option1=value option2=value', or repeat --vdosettings for each option being set. These settings override the default VDO behaviors. To remove vdosettings and revert to the default VDO behaviors, use --vdosettings 'default'.

See lvmvdo(7) for more information.

#### -v|--verbose ...

Set verbose level. Repeat from 1 to 4 times to increase the detail of messages sent to stdout and stderr.

#### --version

Display version information.

#### --[raid]writebehind Number

The maximum number of outstanding writes that are allowed to be?

vices in a RAID1 LV that is marked write-mostly. Once this value is exceeded, writes become synchronous (i.e. all writes to the constituent devices must complete before the array signals the write has completed). Setting the value to zero clears the preference and allows the system to choose the value arbitrarily.

--[raid]writemostly PV[:t|n|y]

Mark a device in a RAID1 LV as write-mostly. All reads to these drives will be avoided unless absolutely necessary. This keeps the number of I/Os to the drive to a minimum. The default behavior is to set the write-mostly attribute for the specified PV.

It is also possible to remove the write-mostly flag by adding the suffix :n at the end of the PV name, or to toggle the value with the suffix :t. Repeat this option to change the attribute on multiple PVs.

-y|--yes

Do not prompt for confirmation interactively but always assume the answer yes. Use with extreme caution. (For automatic no, see -qq.)

-Z|--zero y|n

Set zeroing mode for thin pool. Note: already provisioned blocks from pool in non-zero mode are not cleared in unwritten parts when setting --zero y.

## VARIABLES

VG Volume Group name. See lvm(8) for valid names.

LV Logical Volume name. See lvm(8) for valid names. An LV positional arg generally includes the VG name and LV name, e.g. VG/LV. LV1 indicates the LV must have a specific type, where the accepted LV types are listed. (raid represents raid<N> type).

Tag Tag name. See lvm(8) for information about tag names and using tags in place of a VG, LV or PV.

Select Select indicates that a required positional parameter can be

omitted if the --select option is used. No arg appears in this position.

String See the option description for information about the string con? tent.

#### Size[UNIT]

Size is an input number that accepts an optional unit. Input units are always treated as base two values, regardless of capitalization, e.g. 'k' and 'K' both refer to 1024. The default input unit is specified by letter, followed by |UNIT. UNIT represents other possible input units: b|B is bytes, s|S is sectors of 512 bytes, k|K is KiB, m|M is MiB, g|G is GiB, t|T is TiB, p|P is PiB, e|E is EiB. (This should not be confused with the output control --units, where capital letters mean multiple of 1000.)

### ENVIRONMENT VARIABLES

See lvm(8) for information about environment variables used by lvm.

For example, LVM\_VG\_NAME can generally be substituted for a required VG parameter.

### EXAMPLES

Change LV permission to read-only:

```
lvchange -pr vg00/lvol1
```

### SEE ALSO

lvm(8), lvm.conf(5), lvmconfig(8), lvmdevices(8),  
pvchange(8), pvck(8), pvcreate(8), pvdisplay(8), pvmove(8),  
pvremove(8), pvresize(8), pvs(8), pvscan(8),  
vgcfgbackup(8), vgcfgrestore(8), vgchange(8), vgck(8), vgcreate(8),  
vgconvert(8), vgdisplay(8), vgexport(8), vgextend(8), vgimport(8),  
vgimportclone(8), vgimportdevices(8), vgmerge(8), vgmknodes(8),  
vgreduce(8), vgremove(8), vgrename(8), vgs(8), vgscan(8), vgsplit(8),  
lvcreate(8), lvchange(8), lvconvert(8), lvdisplay(8), lvextend(8),  
lvreduce(8), lvremove(8), lvrename(8), lvresize(8), lvs(8), lvscan(8),  
lvm-fullreport(8), lvm-lvpoll(8), blkdeactivate(8), lvmdump(8),  
dmeventd(8), lvmpoll(8), lvmlockd(8), lvmlockctl(8), cmirrord(8),

lvmdbusd(8), fsadm(8),

lvmsystemid(7), lvmreport(7), lvmraid(7), lvmthin(7), lvmcache(7)

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LVCHANGE(8)