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

$ man lvextend.8

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

NAME

lvextend ? Add space to a logical volume

SYNOPSIS

lvextend option_args position_args

[option_args]

[position_args]

--alloc contiguous|cling|cling_by_tags|normal|anywhere|inherit

-A|--autobackup y|n

--commandprofile String

--config String

-d|--debug

--devices PV

--devicesfile String

--driverloaded y|n

-l|--extents [+]Number[PERCENT]

-f|--force

--fs String

--fsmode String

-h|--help

--journal String

--lockopt String

--longhelp

-m|--mirrors Number

-n|--nofsck

--nohints

--nolocking

--nosync

--noudevsync

--poolmetadatasize [+]Size[m|UNIT]

--profile String

-q|--quiet

--reportformat basic|json|json_std

-r|--resizefs

-L|--size [+]Size[m|UNIT]

-i|--stripes Number

-I|--stripesize Size[k|UNIT]

-t|--test

--type linear|striped|snapshot|raid|mirror|thin|thin-pool|vdo|
vdo-pool|cache|cache-pool|writecache

--usepolicies

-v|--verbose

--version

-y|--yes

DESCRIPTION

lvextend extends the size of an LV. This requires allocating logical extents from the VG's free physical extents. If the extension adds a new LV segment, the new segment will use the existing segment type of the LV.

Extending a copy-on-write snapshot LV adds space for COW blocks.

Use lvconvert(8) to change the number of data images in a RAID or mir? rored LV.

In the usage section below, --size Size can be replaced with --extents Number. See both descriptions the options section.

USAGE

Extend an LV by a specified size.

lvextend -L|--size [+]Size[m|UNIT] LV

[-l|--extents [+]Number[PERCENT]]

[-r|--resizefs]

[-i|--stripes Number]

[-I|--stripesize Size[k|UNIT]]

[--poolmetadatasize [+]Size[m|UNIT]]

[--fs String]

[--fsmode String]

[COMMON_OPTIONS]

[PV ...]

?

Extend an LV by specified PV extents.

lvextend LV PV ...

[-r|--resizefs]

[-i|--stripes Number]

[-I|--stripesize Size[k|UNIT]]

[--fs String]

[--fsmode String]

[COMMON_OPTIONS]

?

Extend a pool metadata SubLV by a specified size.

lvextend --poolmetadatasize [+]Size[m|UNIT] LV1

[-i|--stripes Number]

[-I|--stripesize Size[k|UNIT]]

[COMMON_OPTIONS]

[PV ...]

LV1 types: linear thinpool

?

Extend an LV according to a predefined policy.

lvextend --usepolicies LV1

[-r|--resizefs]

[--fs String]

[--fsmode String]

[COMMON_OPTIONS]

[PV ...]

LV1 types: snapshot thinpool vdopool

?

Common options for command:

[-A|--autobackup y|n]

[-f|--force]

[-m|--mirrors Number]

[-n|--nofsck]

[--alloc contiguous|cling|cling_by_tags|normal|anywhere|inherit

]

[--nosync]

[--noudevsync]

[--reportformat basic|json|json_std]

[--type linear|striped|snapshot|raid|mirror|thin|thin-pool|vdo|

vdo-pool|cache|cache-pool|writecache]

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

--alloc contiguous|cling|cling_by_tags|normal|anywhere|inherit

Determines the allocation policy when a command needs to allo? cate 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. in? herit 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 infor? mation 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.

--commandprofile String

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

--config String

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

-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).

--devices PV

Restricts the devices that are visible and accessible to the command. Devices not listed will appear to be missing. This op? tion can be repeated, or accepts a comma separated list of de? vices. 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) com? mand. This overrides the lvm.conf(5) devices/devicesfile and devices/use_devicesfile settings.

--driverloaded y|n

If set to no, the command will not attempt to use device-mapper. For testing and debugging.

-l|--extents [+]Number[PERCENT]

Specifies the new size of the LV in logical extents. The --size and --extents options are alternate methods of specifying size. The total number of physical extents used will be greater when redundant data is needed for RAID levels. An alternate syntax allows the size to be determined indirectly as a percentage of the size of a related VG, LV, or set of PVs. The suffix %VG de? notes the total size of the VG, the suffix %FREE the remaining free space in the VG, and the suffix %PVS the free space in the specified PVs. For a snapshot, the size can be expressed as a percentage of the total size of the origin LV with the suffix %ORIGIN (100%ORIGIN provides space for the whole origin). When expressed as a percentage, the size defines an upper limit for the number of logical extents in the new LV. The precise number of logical extents in the new LV is not determined until the command has completed. When the plus + or minus - prefix is used, the value is not an absolute size, but is relative and added or subtracted from the current size.

-f|--force ...

Override various checks, confirmations and protections. Use

with extreme caution.

--fs String

Control file system resizing when resizing an LV. checksize: Check the fs size and reduce the LV if the fs is not using the reduced space (fs reduce is not needed.) If the reduced space is used by the fs, then do not resize the fs or LV, and return an error. (checksize only applies when reducing, and does nothing for extend.) resize: Resize the fs by calling the fs-specific resize command. This may also include mounting, unmounting, or running fsck. See --fsmode to control mounting behavior, and --nofsck to disable fsck. resize_fsadm: Use the old method of calling fsadm to handle the fs (deprecated.) Warning: this op? tion does not prevent lvreduce from destroying file systems that are unmounted (or mounted if prompts are skipped.) ignore: Re? size the LV without checking for or handling a file system. Warning: using ignore when reducing the LV size may destroy the file system.

--fsmode String

Control file system mounting behavior for fs resize. manage: Mount or unmount the fs as needed to resize the fs, and attempt to restore the original mount state at the end. nochange: Do not mount or unmount the fs. If mounting or unmounting is re? quired to resize the fs, then do not resize the fs or the LV and fail the command. offline: Unmount the fs if it is mounted, and resize the fs while it is unmounted. If mounting is required to resize the fs, then do not resize the fs or the LV and fail the command.

-h|--help

Display help text.

--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 com?
mand debugging.

--lockopt String

Used to pass options for special cases to lvmlockd. See lvm?
lockd(8) for more information.

--longhelp

Display long help text.

-m|--mirrors Number

Not used.

-n|--nofsck

Do not perform fsck when resizing the file system with --re?
sizefs.

--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 pro?
duce incorrect results.

--nosync

Causes the creation of mirror, raid1, raid4, raid5 and raid10 to
skip the initial synchronization. In case of mirror, raid1 and
raid10, any data written afterwards will be mirrored, but the
original contents will not be copied. In case of raid4 and
raid5, no parity blocks will be written, though any data written
afterwards will cause parity blocks to be stored. This is use?
ful for skipping a potentially long and resource intensive ini?
tial sync of an empty mirror/raid1/raid4/raid5 and raid10 LV.
This option is not valid for raid6, because raid6 relies on
proper parity (P and Q Syndromes) being created during initial
synchronization in order to reconstruct proper user date in case
of device failures. raid0 and raid0_meta do not provide any da?

ta copies or parity support and thus do not support initial syn? chronization.

--noudevsync

Disables udev synchronisation. The process will not wait for no? tification from udev. It will continue irrespective of any pos? sible udev processing in the background. Only use this if udev is not running or has rules that ignore the devices LVM creates.

--poolmetadatasize [+]Size[m|UNIT]

Specifies the new size of the pool metadata LV. The plus prefix + can be used, in which case the value is added to the current size.

--profile String

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

-q|--quiet ...

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

--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.

-r|--resizefs

Resize the fs using the fs-specific resize command. May include mounting, unmounting, or running fsck. See --fsmode to control mounting behavior, and --nofsck to disable fsck. See --fs for more options (--resizefs is equivalent to --fs resize.)

-L|--size [+]Size[m|UNIT]

Specifies the new size of the LV. The --size and --extents op?
tions are alternate methods of specifying size. The total num?
ber of physical extents used will be greater when redundant data
is needed for RAID levels. When the plus + or minus - prefix is
used, the value is not an absolute size, but is relative and
added or subtracted from the current size.

-i|--stripes Number

Specifies the number of stripes in a striped LV. This is the
number of PVs (devices) that a striped LV is spread across. Data
that appears sequential in the LV is spread across multiple de?
vices in units of the stripe size (see --stripesize). This does
not change existing allocated space, but only applies to space
being allocated by the command. When creating a RAID 4/5/6 LV,
this number does not include the extra devices that are required
for parity. The largest number depends on the RAID type (raid0:
64, raid10: 32, raid4/5: 63, raid6: 62), and when unspecified,
the default depends on the RAID type (raid0: 2, raid10: 2,
raid4/5: 3, raid6: 5.) To stripe a new raid LV across all PVs
by default, see lvm.conf(5) allocation/raid_stripe_all_devices.

-I|--stripesize Size[k|UNIT]

The amount of data that is written to one device before moving
to the next in a striped LV.

-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 un?
usual error messages in multi-stage operations if a tool relies
on reading back metadata it believes has changed but hasn't.

--type linear|striped|snapshot|raid|mirror|thin|thin-pool|vdo|vdo-pool|
cache|cache-pool|writecache

The LV type, also known as "segment type" or "segtype". See us?
age descriptions for the specific ways to use these types. For
more information about redundancy and performance (raid<N>, mir?

ror, striped, linear) see lvmraid(7). For thin provisioning (thin, thin-pool) see lvmthin(7). For performance caching (cache, cache-pool) see lvmcache(7). For copy-on-write snap? shots (snapshot) see usage definitions. For VDO (vdo) see lvmv? do(7). Several commands omit an explicit type option because the type is inferred from other options or shortcuts (e.g. --stripes, --mirrors, --snapshot, --virtualsize, --thin, --cache, --vdo). Use inferred types with care because it can lead to unexpected results.

--usepolicies

Perform an operation according to the policy configured in lvm.conf(5) or a profile.

-v|--verbose ...

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

--version

Display version information.

-y|--yes

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

VARIABLES

LV Logical Volume name. See lvm(8) for valid names. An LV posi? tional 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).

PV Physical Volume name, a device path under /dev. For commands managing physical extents, a PV positional arg generally accepts a suffix indicating a range (or multiple ranges) of physical ex? tents (PEs). When the first PE is omitted, it defaults to the start of the device, and when the last PE is omitted it defaults to end. Start and end range (inclusive): PV[:PE-PE]... Start

and length range (counting from 0): PV[:PE+PE]...

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 capi? talization, e.g. 'k' and 'K' both refer to 1024. The default input unit is specified by letter, followed by |UNIT. UNIT rep? resents 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

Extend the size of an LV by 54MiB, using a specific PV.

lvextend -L +54 vg01/lvol10 /dev/sdk3

Extend the size of an LV by the amount of free space on PV /dev/sdk3.

This is equivalent to specifying "-l +100%PVS" on the command line.

lvextend vg01/lvol01 /dev/sdk3

Extend an LV by 16MiB using specific physical extents.

lvextend -L+16m vg01/lvol01 /dev/sda:8-9 /dev/sdb:8-9

Extend an LV to use all remaining free space in volume group and all resize its filesystem with fsadm(8).

lvextend -l+100%FREE -r vg01/lvol01

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), lvmpolld(8), lvmlockd(8), lvmlockctl(8), cmirrord(8),

lvmdbusd(8), fsadm(8),

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