LVM Commands

1. `lvcreate`:
   ```bash
   lvcreate -n my_lv -L 1G my_vg
   ```
   This creates a logical volume named `my_lv` with a size of 1GB in the volume group `my_vg`.

2. `lvremove`:
   ```bash
   lvremove /dev/my_vg/my_lv
   ```
   Removes the logical volume `my_lv` from the volume group `my_vg`.

3. `lvextend`:
   ```bash
   lvextend -L +500M /dev/my_vg/my_lv
   ```
   Extends the size of `my_lv` by 500MB.

4. `lvreduce`:
   ```bash
   lvreduce -L 800M /dev/my_vg/my_lv
   ```
   Reduces the size of `my_lv` to 800MB.

5. `lvdisplay`:

```bash
lvdisplay /dev/my_vg/my_lv
```
Displays detailed information about the logical volume `my_lv`.

6. `vgcreate`:
```bash
vgcreate my_vg /dev/sdb1 /dev/sdc1
```
Creates a new volume group named `my_vg` using physical volumes `/dev/sdb1` and `/dev/sdc1`.

7. `vgextend`:
```bash
vgextend my_vg /dev/sdd1
```
Adds the physical volume `/dev/sdd1` to the existing volume group `my_vg`.

8. `vgreduce`:
```bash
vgreduce my_vg /dev/sdc1
```
Removes the physical volume `/dev/sdc1` from the volume group `my_vg`.

9. `pvcreate`:
```bash
pvcreate /dev/sde1
```

```
Initializes the partition `/dev/sde1` for use as a physical volume.

10. `pvdisplay`:
    ```bash
    pvdisplay /dev/sde1
    ```
    Displays information about the physical volume `/dev/sde1`.

11. lvrename:

lvrename my_vg/old_lv my_vg/new_lv

Renames a logical volume from old_lv to new_lv within the volume group my_vg.

12. lvresize:

lvresize -L +200M /dev/my_vg/my_lv

Resizes the logical volume my_lv by adding 200MB to its size.

13. lvconvert:

lvconvert --type mirror my_vg/my_lv /dev/sdf1

Converts a linear logical volume into a mirrored one.
    ```

14. vgchange:

vgchange -a n my_vg

Deactivates (set to “n”) all logical volumes in the volume group my_vg.

15. lvscan:

lvscan

Scans all disks for existing logical volumes.

16. vgscan:

vgscan

Scans for all existing volume groups and updates the cache.

17. pvscan:

pvscan

Scans all disks for physical volumes.

18. lvcreate (thin pool):

lvcreate --type thin-pool -n thin_pool_name my_vg -L 1G

Creates a thin pool logical volume named thin_pool_name with a size of 1GB.

19. lvcreate (thin volume):

lvcreate --type thin -n thin_volume_name --size 500M --thinpool thin_pool_name my_vg

Creates a thin logical volume named thin_volume_name with a size of 500MB in the thin pool thin_pool_name.

20. lvconvert (thin to thick):

lvconvert --type thin-pool --poolmetadata my_vg/thin_pool_metadata my_vg/thin_pool_name

21. lvchange:

lvchange -ay /dev/my_vg/my_lv

Activates (set to “ay”) a logical volume, making it accessible.

22. lvscan (displaying details):

lvscan --verbose

Scans and displays detailed information about logical volumes.

23. vgextend (multiple physical volumes):

vgextend my_vg /dev/sdf1 /dev/sdg1

Adds multiple physical volumes to the existing volume group my_vg.

24. vgdisplay:

vgdisplay my_vg

Displays detailed information about the volume group my_vg.

25. lvresize (exact size):

lvresize -L 2G /dev/my_vg/my_lv

Resizes the logical volume my_lv to exactly 2GB.

26. lvcreate (striped):

lvcreate --type striped -n striped_lv -L 1G my_vg /dev/sdh1 /dev/sdi1

Creates a striped logical volume named striped_lv using two physical volumes.

27. lvcreate (snapshot):

lvcreate --size 500M --snapshot --name snap_lv /dev/my_vg/my_lv

Creates a snapshot logical volume named snap_lv for the existing logical volume my_lv.

28. lvs (list logical volumes):

lvs

Lists information about all logical volumes.

29. pvmove (move data between physical volumes):

pvmove /dev/sdh1 /dev/sdi1

Moves data from one physical volume to another within the same volume group.

30. lvchange (read-only):

lvchange -pr /dev/my_vg/my_lv

31. lvconvert (merge snapshot into original LV):

lvconvert --merge /dev/my_vg/snap_lv

31. Merges the snapshot logical volume snap_lv into its original logical volume.

32. lvremove (remove snapshot):

lvremove /dev/my_vg/snap_lv

32. Removes the snapshot logical volume snap_lv from the volume group my_vg.
33. vgexport:

vgexport my_vg

33. Unmounts and exports the volume group my_vg.
34. vgimport:

vgimport my_vg /dev/sdh1 /dev/sdi1

34. Imports the previously exported volume group my_vg using the specified physical volumes.

35. pvmove (move extents between PVs):

pvmove /dev/sdh1:0-255 /dev/sdi1

35. Moves specific extents (logical extents 0 to 255) from one physical volume to another.

36. pvresize:

pvresize /dev/sdh1

36. Resizes the physical volume /dev/sdh1 to fill the available space on the disk.

37. lvchange (rename LV):

lvchange -L new_name /dev/my_vg/old_name

37. Renames a logical volume from old_name to new_name.

38. vgchange (change volume group attributes):

vgchange --addtag "backup" my_vg

38. Adds a tag “backup” to the volume group my_vg.

39. lvcreate (cache):

lvcreate --type writecache -n cache_lv -L 500M my_vg /dev/sdh1

39. Creates a write cache logical volume named cache_lv using the physical volume /dev/sdh1.

40. lvcreate (thin pool with metadata):

lvcreate --type thin-pool --size 2G -n tp_lv my_vg /dev/sdh1

41. lvchange (activate/deactivate snapshot):

lvchange -an /dev/my_vg/snap_lv

41. Deactivates the snapshot logical volume snap_lv.

42. lvextend (with specific size):

lvextend -L 3G /dev/my_vg/my_lv

42. Extends the logical volume my_lv to a specific size of 3GB.

43. vgreduce (remove unused PVs):

vgreduce my_vg /dev/sdh1 /dev/sdi1

43. Removes physical volumes sdh1 and sdi1 from the volume group my_vg.

44. lvchange (change read-ahead sector count):

lvchange --setreadahead 2048 /dev/my_vg/my_lv

44. Sets the read-ahead sector count to 2048 for the logical volume my_lv.

45. pvremove:

pvremove /dev/sdh1

45. Removes LVM metadata from the physical volume /dev/sdh1.

46. lvcreate (thin volume with specific metadata size):

lvcreate --type thin -L 1G --thinpool tp_lv --poolmetadatasize 100M -n thin_vol my_vg

46. Creates a thin logical volume named thin_vol with a size of 1GB and specified metadata size in the thin pool tp_lv.

47. vgcreate (with physical extent size):

vgcreate -s 16M new_vg /dev/sdh1 /dev/sdi1

47. Creates a volume group named new_vg with a physical extent size of 16MB using the specified physical volumes.

48. lvcreate (raid1):

lvcreate --type raid1 -m1 -L 2G -n mirrored_lv my_vg /dev/sdh1 /dev/sdi1

48. Creates a mirrored logical volume named mirrored_lv with a size of 2GB using two physical volumes.

49. lvconvert (from linear to raid1):

lvconvert --type raid1 -m1 my_vg/my_lv /dev/sdh1 /dev/sdi1

49. Converts a linear logical volume to a mirrored one.
50. vgmerge:

vgmerge new_vg my_vg

50. Merges the volume group my_vg into new_vg

51. lvm (config display):

lvm config

51. Displays the LVM configuration information.
52. lvcreate (thin volume with specific metadata redundancy):

lvcreate --type thin -L 1G --thinpool tp_lv --metadatasize 100M --metadatacopies 2 -n thin_vol my_vg

52. Creates a thin logical volume named thin_vol with a size of 1GB, specific metadata size, and redundancy in the thin pool tp_lv.
53. lvchange (change chunk size for striped LV):

lvchange --stripesize 64K /dev/my_vg/striped_lv

53. Sets the chunk size to 64KB for the striped logical volume striped_lv.
54. vgchange (activate all LVs in a VG):

```
vgchange -ay my_vg
```

54. Activates all logical volumes in the volume group my_vg.
55. pvmove (move all extents from one PV to another):

```
pvmove /dev/sdh1 /dev/sdi1
```

55. Moves all extents from /dev/sdh1 to /dev/sdi1.
56. lvconvert (to mirror with specific devices):

```
lvconvert --type mirror -m1 my_vg/my_lv /dev/sdh1 /dev/sdi1
```

56. Converts the logical volume my_lv to a mirrored one with specific devices.
57. lvs (display LV attributes):

```
lvs -o+devices,segtype /dev/my_vg/my_lv
```

57. Displays detailed attributes of the logical volume my_lv including devices and segment type.
58. lvcreate (thin pool with specific metadata chunk size):

lvcreate --type thin-pool -L 2G --metadatasize 100M --metadatachunksize 32K -n tp_lv my_vg /dev/sdh1

58. Creates a thin pool logical volume named tp_lv with specific metadata chunk size.

59. vgchange (change VG attributes):

vgchange --addtag "production" my_vg

59. Adds a tag “production” to the volume group my_vg.

60. lvcreate (mirrored stripe):

lvcreate --type mirror-stripe -m1 -L 4G -n mirror_stripe_lv my_vg /dev/sdh1 /dev/sdi1 /dev/sdj1

60. Creates a mirrored stripe logical volume named mirror_stripe_lv with a size of 4GB using three physical volumes.

61. lvcreate (thin pool with specific chunk size and data percentage):

lvcreate --type thin-pool -L 5G --poolmetadatasize 500M --chunksize 64K --thinpool tp_lv --percent 70% -n thin_vol my_vg

61. Creates a thin pool logical volume named tp_lv with a size of 5GB, specific metadata size, chunk size, and allocates 70% for thin volumes.

62. lvresize (reduce size to a specific value):

lvresize -L 3G /dev/my_vg/my_lv

62. Reduces the size of the logical volume my_lv to 3GB.
63. lvconvert (merge snapshot into original LV with specific percentage):

lvconvert --merge --percent 80 /dev/my_vg/snap_lv

63. Merges 80% of the snapshot logical volume snap_lv into its original logical volume.
64. lvcreate (thin pool with specific profile):

lvcreate --type thin-pool -L 5G --poolmetadatasize 500M --profile thin_pool_profile -n thin_vol my_vg

64. Creates a thin pool logical volume named thin_vol with specific size, metadata size, and a predefined thin pool profile.
65. vgcfgrestore (restore VG configuration from backup):

vgcfgrestore my_vg

65. Restores the volume group my_vg configuration from a backup.
66. lvcreate (thin volume with specific chunk size and data percentage):

lvcreate --type thin -L 1G --thinpool tp_lv --chunksize 32K --percent 50% -n thin_vol my_vg

66. Creates a thin logical volume named thin_vol with a size of 1GB, specific chunk size, and allocates 50% for thin data.

67. vgextend (extend VG with specific metadata size):

vgextend my_vg /dev/sdf1 --metadatasize 200M

67. Extends the volume group my_vg with a new physical volume /dev/sdf1 and specific metadata size.

68. lvcreate (thin pool with specific region size):

lvcreate --type thin-pool -L 10G --poolmetadatasize 1G --region_size 1M -n thin_vol my_vg

68. Creates a thin pool logical volume named thin_vol with a specific size, metadata size, and region size.

69. lvconvert (from mirror to raid1):

lvconvert --type raid1 my_vg/mirror_lv

69. Converts the mirrored logical volume mirror_lv to a raid1 configuration.

70. lvcreate (raid10):

lvcreate --type raid10 -m1 -L 6G -n raid10_lv my_vg /dev/sdf1 /dev/sdg1 /dev/sdh1 /dev/sdi1

70. Creates a raid10 logical volume named raid10_lv with a size of 6GB using four physical volumes.

71. lvconvert (convert thin volume to thick):

lvconvert --type thick-pool my_vg/thin_vol

71. Converts the thin logical volume thin_vol to a thick-pool configuration.
72. vgcfgbackup (backup VG configuration):

vgcfgbackup my_vg

72. Creates a backup of the volume group my_vg configuration.
73. vgchange (deactivate specific LV):

vgchange -an /dev/my_vg/other_lv

73. Deactivates the logical volume other_lv in the volume group my_vg.
74. lvchange (suspend/resume LV):

lvchange -ps /dev/my_vg/my_lv

74. Suspends (pauses) and resumes the logical volume my_lv.

75. lvcreate (raid4):

lvcreate --type raid4 -m1 -L 8G -n raid4_lv my_vg /dev/sdf1 /dev/sdg1 /dev/sdh1 /dev/sdi1

75. Creates a raid4 logical volume named raid4_lv with a size of 8GB using four physical volumes.

76. lvresize (resize with specific extents):

lvresize --extents +100%FREE /dev/my_vg/my_lv

76. Resizes the logical volume my_lv using 100% of the free space.

77. lvcreate (thin snapshot):

lvcreate --type thin -s -n thin_snap my_vg/thin_vol

77. Creates a thin snapshot logical volume named thin_snap for the thin logical volume thin_vol.

78. lvchange (change LV allocation policy):

lvchange --policy alloc_any /dev/my_vg/my_lv

78. Changes the allocation policy to alloc_any for the logical volume my_lv.

79. vgchange (disable VG):

vgchange -an my_vg

79. Disables (deactivates) the entire volume group my_vg.

80. lvcreate (thin pool with specific zero new blocks setting):

lvcreate --type thin-pool -L 3G --zero new_blocks --name thin_pool my_vg

80. Creates a thin pool logical volume named thin_pool with specific size and zeroing of new blocks.

81. lvcreate (thin volume with specific data and metadata pool):

lvcreate --type thin -L 2G --poolmetadatasize 200M --pooldata thin_data_pool --poolmetadatapool thin_meta_pool -n thin_vol my_vg

81. Creates a thin logical volume named thin_vol with specified size, metadata size, and separate data and metadata pools.

82. lvchange (change LV read-ahead policy):

lvchange --setreadahead 4096 /dev/my_vg/my_lv

82. Sets the read-ahead policy to 4096 for the logical volume my_lv.

83. lvcreate (thin pool with specific min and max size):

lvcreate --type thin-pool -L 5G --poolmetadatasize 500M --poolmin 2G --poolmax 10G --name thin_pool my_vg

83. Creates a thin pool logical volume named thin_pool with specific size, metadata size, and minimum/maximum sizes for thin volumes.

84. lvchange (change LV permission):

lvchange --permission r /dev/my_vg/my_lv

84. Sets the permission to read-only for the logical volume my_lv.

85. lvcreate (thin pool with specific zero pool metadata setting):

lvcreate --type thin-pool -L 4G --poolmetadatasize 500M --zerometadata --name thin_pool my_vg

85. Creates a thin pool logical volume named thin_pool with specific size, metadata size, and zeroing metadata.

86. lvconvert (convert RAID1 to RAID0):

lvconvert --type raid0 my_vg/raid1_lv

86. Converts the RAID1 logical volume raid1_lv to a RAID0 configuration.

87. vgchange (enable VG):

vgchange -ay my_vg

87. Enables (activates) the entire volume group my_vg.

88. lvchange (change LV write-behind policy):

lvchange --setwritebehind 2048 /dev/my_vg/my_lv

88. Sets the write-behind policy to 2048 for the logical volume my_lv.

89. lvcreate (thin volume with specific zero pool data setting):

lvcreate --type thin -L 1G --poolmetadatasize 100M --zerodata --name thin_vol my_vg

89. Creates a thin logical volume named thin_vol with specific size, metadata size, and zeroing data.

90. lvchange (change LV priority):

lvchange --priority 100 /dev/my_vg/my_lv

90. Sets the priority to 100 for the logical volume my_lv.

91. lvs (display LVs in specific VG):

lvs my_vg

91. Displays information about all logical volumes in the volume group my_vg.

92. lvcreate (thin volume with specific readahead setting):

lvcreate --type thin -L 3G --poolmetadatasize 300M --readahead 2048 -n thin_vol my_vg

92. Creates a thin logical volume named thin_vol with specific size, metadata size, and read-ahead setting.

93. vgmerge (merge two VGs into a new VG):

vgmerge new_vg my_vg1 my_vg2

93. Merges two volume groups my_vg1 and my_vg2 into a new volume group new_vg.

94. lvchange (change LV region size):

lvchange --setregionsize 2M /dev/my_vg/my_lv

94. Sets the region size to 2MB for the logical volume my_lv.

95. lvcreate (snapshot with specific size and permission):

lvcreate --snapshot -L 500M --permission r --name snap_lv my_vg/my_lv

95. Creates a read-only snapshot logical volume named snap_lv with a size of 500MB for the logical volume my_lv.

96. lvconvert (convert striped to mirrored):

lvconvert --type mirror my_vg/striped_lv

96. Converts the striped logical volume striped_lv to a mirrored configuration.

97. vgmerge (merge VGs, combining physical extents):

vgmerge my_vg1 /dev/sdX /dev/sdY

97. Merges the physical volumes /dev/sdX and /dev/sdY into the volume group my_vg1.

98. lvchange (change LV cache mode):

lvchange --cachevol cache_lv --cachemode writethrough /dev/my_vg/my_lv

98. Changes the cache mode to writethrough for the logical volume my_lv using the cache logical volume cache_lv.

99. lvcreate (thin pool with specific discard setting):

lvcreate --type thin-pool -L 6G --poolmetadatasize 600M --discards passdown --name thin_pool my_vg

99. Creates a thin pool logical volume named thin_pool with specific size, metadata size, and passdown discards setting.

100. lvchange (change LV cache read-ahead setting):
bash lvchange --cachereadahead 8192 /dev/my_vg/my_lv
Sets the cache read-ahead setting to 8192 for the logical volume my_lv.