LVM — The Logical Volume Control Block

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About This Document

This document describes the logical volume control block (lvcb) and the warning "cannot write lv control block data", which may result from database programs overwriting the lvcb. This document applies to AIX 3.2 and 4.1.

About the LVCB

The logical volume control block (lvcb) is the first 512 bytes of a logical volume. This area holds important information such as the creation date of the logical volume, information about mirrored copies, and possible mount points in a journaled file system. Certain LVM commands are required to update the lvcb, as part of completeness algorithms in LVM. These commands first read and analyze the old lvcb area to see if it is a valid lvcb. If the information is verified as valid lvcb information, then the lvcb is updated. If the information is not valid, then the lvcb update is not performed and the user is given the warning message:

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Warning, cannot write lv control block data
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Most of the time, this is a result of the lvcb being overwritten by database programs accessing the raw logical volumes (and thus bypassing the journaled file system) as storage media.

Although this may seem fatal, it is not the case. Once the lvcb has been overwritten, the user can still:

- Extend a logical volume
- Create mirrored copies of a logical volume
- Remove the logical volume
- Create a journaled file system with which to mount the logical volume (note that this will destroy any data sitting in the lvcb area)

However, there is a limitation caused by this deletion of the lvcb. The logical volumes with deleted lvcbs face possible incomplete importation into other AIX systems. During an "importvg", the LVM command will scan the lvcbs of all defined logical volumes in a volume group for information concerning the logical volumes. Surprisingly, if the lvcb is deleted, the imported volume group will still define the logical volume to the new AIX system which is accessing this volume group, and the user can still access the raw logical volume. However, any journaled file system information is lost and the logical volume and its associated mount point won't be imported into the new AIX system. The user must create new mount points and the availability of previous data stored in the file system is **not** assured.

Additionally, all copies of the logical volume (mirrors), except the original copy are lost and the user must recreate the logical volume copies. Also, type attributes are lost (causing a default to jfs), and in AIX 4.1 striping information is lost. Finally, with an erased lvcb, the output from the "lslv" command might be misleading or unreliable.

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