LV Problems After Migration from AIX 3.2 to 4.1.2

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About this Document

After a migration install from AIX 3.2 to 4.1.2, there may be problems with the creation or extension of a logical volume. This document describes the problem, how it can be avoided before migration, and how it can be fixed after migration.

The Problem

There is a problem in migration installation from AIX 3.2 (any level) to AIX Version 4.1.2 which can cause errors similar to the following when the system administrator attempts to increase the size of /tmp or create a new logical volume or file system.

```
0516-022 lcreatelv: Illegal parameter or structure value.
0516-822 mklv: Unable to create logical volume.
crfs: 0506-902 Cannot create logical volume.
```

Systems Affected

The systems that will encounter the problem are systems on which

- the system dump device is the default (that is, "sysdumpdev -l" shows that /dev/hd7 is the dump device and has two physical partitions) and
- /tmp is small enough that migration installation has to expand it in order to save the configuration data.

The Solution

The problem is easy to prevent prior to installation, is easy to recover from after installation, and will be fixed in the next maintenance release of AIX Version 4.

If Installation Has Already Occurred

If the installation has already occurred, use the following commands to fix the problem. (The commands fix a discrepancy between the device information in the boot image and the LVM data for /tmp.)

```
su
<password>
putlvodm -L `getlvodm -l hd3`
lvrelminor hd3
synclvodm rootvg hd3
```

Be sure to use grave (back tic) characters in the syntax for the putlvodm command.

If Installation Has Not Already Occurred

If the installation has not already occured, change the system dump device to be the paging space (normally hd6). AIX 4.1 uses paging space as the default dump device; if the dump device has been changed from the default, then the dump device is preserved across the migration installation, and the chain of events which causes the problem is prevented.

Use the following command to change the dump device to paging space prior to migrating (the parameters given assume paging space is hd6). The command should be run just prior to installation since the dump would not be recoverable from paging space on 3.2.

```
sysdumpdev -Pp /dev/hd6
```

More Details about the Problem

Here's the sequence of events in installation that triggers the problem:

1. If it is detected that the dump logical volume was unmodified (/dev/hd7 is the dump device and is two partitions), then hd7 is removed and the dump device is set to paging space on 4.1.
2. If /tmp is expanded for migration purposes, the migration code tries to recreate /tmp with as small a size as possible afterwards, the maximum of the existing /tmp size and the amount of space necessary to hold the saved files which were not merged back. To do this, it copies the contents (compressed) of /tmp into /usr, unmounts /tmp, removes the hd4 logical volume, and recreates it.
3. If both 1 and 2 occur, then /dev/hd3 will have a minor number of 3 (the old minor number for the dump lv), rather than its old number of 8.

4. savebase wasn't run after 3, so the saved information in the boot which creates the dev entries creates /dev/hd3 with the old minor number (8), and thus the dev entry and the logical volume are out of sync with respect to /tmp.

If either event 1 or event 2 does not occur, then event 3 will not occur, 4 will be moot, and there won't be a problem.

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