LVM: Unmirror/Mirror "rootvg" Volume Group

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Tested on AIX 5.3

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# UN-MIRRORING "rootvg"
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# We are un-mirroring a "rootvg" VG distributed on "hdisk0" &
"hdisk1" disks like this one
# (we'll take "hdisk1" out of the mirror for whatever reason):


lspv | grep rootvg
   hdisk0          0039c23db037da0b
rootvg          active
   hdisk1          0039c23db037dae6
rootvg          active


lsvg -l rootvg
   rootvg:
   LV NAME             TYPE       LPs     PPs     PVs  LV STATE
MOUNT POINT
   hd5                 boot       1       2       2    closed/syncd
N/A
   hd6                 paging     128     256     2    open/syncd
N/A
   hd8                 jfslog     1       2       2    open/syncd
N/A
   hd4                 jfs        1       2       2    open/syncd
/
```

```
   hd2                 jfs         14      28      2    open/syncd
/usr
   hd9var              jfs         8       16      2    open/syncd
/var
   hd3                 jfs         8       16      2    open/syncd
/tmp
   lv_dump2            sysdump     32      32      1    open/syncd
N/A
   hd10opt             jfs         8       16      2    open/syncd
/opt
   loglv00             jfs2log     1       2       2    open/syncd
N/A
   localoptlv          jfs2        309     618     2    open/stale
/local/opt
   lv_dump1            sysdump     32      32      1    open/syncd
N/A
   fslv00              jfs2        8       16      2    open/stale
/local/home


lspv -l hdisk0
   hdisk0:
   LV NAME               LPs     PPs     DISTRIBUTION          MOUNT
POINT
   hd10opt               8       8       00..00..01..00..07    /opt
   hd3                   8       8       00..00..08..00..00    /tmp
   hd9var                8       8       00..00..08..00..00    /var
   hd2                   14      14      00..00..11..01..02    /usr
   hd4                   1       1       00..00..01..00..00    /
   hd8                   1       1       00..00..01..00..00    N/A
   hd6                   128     128     00..101..27..00..00   N/A
   hd5                   1       1       01..00..00..00..00    N/A
   fslv00                8       8       00..00..01..07..00
/local/home
   lv_dump1              32      32      00..00..32..00..00    N/A
   localoptlv            309     309     108..08..19..101..73
/local/opt
   loglv00               1       1       01..00..00..00..00    N/A
```

```
lspv -l hdisk1
   hdisk1:
   LV NAME                 LPs     PPs     DISTRIBUTION          MOUNT
POINT
   hd10opt                 8       8       00..00..08..00..00    /opt
   lv_dump2                32      32      00..00..00..00..32    N/A
   hd3                     8       8       00..00..08..00..00    /tmp
   hd9var                  8       8       00..00..08..00..00    /var
   hd2                     14      14      00..00..14..00..00    /usr
   hd4                     1       1       00..00..01..00..00    /
   hd8                     1       1       00..00..01..00..00    N/A
   hd6                     128     128     00..109..19..00..00   N/A
   hd5                     1       1       01..00..00..00..00    N/A
   fslv00                  8       8       00..00..00..00..08
/local/home
   localoptlv              309     309     108..00..50..109..42
/local/opt
   loglv00                 1       1       01..00..00..00..00    N/A



# First of all verify if there are any volumes belonging to "hdisk1"
acting as dump device;
# if this is the cas, we'll free them up:

sysdumpdev -l
   primary              /dev/lv_dump1
   secondary            /dev/lv_dump2       <---
   copy directory       /var/adm/ras
   forced copy flag     TRUE
   always allow dump    FALSE
   dump compression     ON



sysdumpdev -s /dev/sysdumpnull
```

```
   primary              /dev/lv_dump1
   secondary            /dev/sysdumpnull     <---
   copy directory       /var/adm/ras
   forced copy flag     TRUE
   always allow dump    FALSE
   dump compression     ON



# Let's remove "/dev/lv_dump2" from "hdisk1"

rmlv lv_dump2

# ... and, finally, completely un-mirror rootvg (take out "hdisk1"):

reducevg rootvg hdisk1







# RE-MIRRORING "rootvg"
# ------------------------------------------------------------------
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# We are re-constructing mirror that was split on previous step or
just mirroring "rootvg"
# in order to have a redundancy is case of problems with one of the
boot disks


# Verify that the disk where we are creating the mirror, "hdisk1", is
not in use - It
# doesn't belong to any VG ("None") -

lspv
```

```
   hdisk0          0039c23db037da0b
rootvg          active
   hdisk1          0039c23db037dae6                    None
[...]



# Just for info, check Logical Volume distribution on both disks

lspv -l hdisk0
   hdisk0:
   LV NAME               LPs     PPs     DISTRIBUTION          MOUNT
POINT
   hd10opt               8       8       00..00..01..00..07    /opt
   hd3                   8       8       00..00..08..00..00    /tmp
   hd9var                8       8       00..00..08..00..00    /var
   hd2                   14      14      00..00..11..01..02    /usr
   hd4                   1       1       00..00..01..00..00    /
   hd8                   1       1       00..00..01..00..00    N/A
   hd6                   128     128     00..101..27..00..00   N/A
   hd5                   1       1       01..00..00..00..00    N/A
   fslv00                8       8       00..00..01..07..00
/local/home
   lv_dump1              32      32      00..00..32..00..00    N/A
   localoptlv            309     309     108..08..19..101..73
/local/opt
   loglv00               1       1       01..00..00..00..00    N/A


lspv -l hdisk1
   0516-320 : Physical volume 0039c23db037dae60000000000000000 is not
assigned to
           a volume group.



# Extend "rootvg" with the new disk (it system detects that there is
any information on
```

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# disk belonging to an old VG it may be necessary to use -f option,
like here)

extendvg rootvg hdisk1
   0516-1398 extendvg: The physical volume hdisk1, appears to belong
to
   another volume group. Use the force option to add this physical
volume
   to a volume group.
   0516-792 extendvg: Unable to extend volume group.


extendvg -f rootvg hdisk1


lspv
   hdisk0          0039c23db037da0b
rootvg          active
   hdisk1          0039c23db037dae6
rootvg          active
[...]




# Mirror all "rootvg" volumes on "hdisk1". For the moment we won't
synchronize data, that
# will be done on a further step

mirrorvg -s rootvg hdisk1
   0516-1804 chvg: The quorum change takes effect immediately.
   0516-1126 mirrorvg: rootvg successfully mirrored, user should
perform
           bosboot of system to initialize boot records.  Then, user
must modify
           bootlist to include:  hdisk0 hdisk1.

# -s Disable Sync
```

```
#   Returns the mirrorvg command immediately without performing any
type of mirror
#   synchronization. If this option is used, the mirror may exist for
a logical volume
#   but is not used by the operating system until it has been
synchronized with the
#   syncvg command.



# Check number of copies (PVs) of each volume. Note that for lv_dump1
there is only
# one copy. This is because system has detected that lv_dump1
corresponds to a
# dump device that shouldn't be mirrored. We'll create manually
another copy of dump
# device on a new volume on mirror disk...

lsvg -l rootvg
   rootvg:
   LV NAME             TYPE       LPs     PPs     PVs  LV STATE
MOUNT POINT
   hd5                 boot       1       2       2    closed/stale
N/A
   hd6                 paging     128     256     2    open/stale
N/A
   hd8                 jfslog     1       2       2    open/stale
N/A
   hd4                 jfs        1       2       2    open/stale
/
   hd2                 jfs        14      28      2    open/stale
/usr
   hd9var              jfs        8       16      2    open/stale
/var
   hd3                 jfs        8       16      2    open/stale
/tmp
   hd10opt             jfs        8       16      2    open/stale
/opt
```

```
   loglv00             jfs2log    1       2       2    open/stale
N/A
   localoptlv          jfs2       309     618     2    open/stale
/local/opt
   lv_dump1            sysdump    32      32      1    open/syncd
N/A         <---
   fslv00              jfs2       8       16      2    open/stale
/local/home


mklv -t sysdump -y lv_dump2 rootvg 32 hdisk1
   lv_dump2


lsvg -l rootvg
   rootvg:
   LV NAME             TYPE       LPs     PPs     PVs  LV STATE
MOUNT POINT
   hd5                 boot       1       2       2    closed/stale
N/A
   hd6                 paging     128     256     2    open/stale
N/A
   hd8                 jfslog     1       2       2    open/stale
N/A
   hd4                 jfs        1       2       2    open/stale
/
   hd2                 jfs        14      28      2    open/stale
/usr
   hd9var              jfs        8       16      2    open/stale
/var
   hd3                 jfs        8       16      2    open/stale
/tmp
   lv_dump2            sysdump    32      32      1    closed/syncd
N/A         <---
   hd10opt             jfs        8       16      2    open/stale
/opt
   loglv00             jfs2log    1       2       2    open/stale
N/A
```

```
   localoptlv          jfs2       309     618     2    open/stale
/local/opt
   lv_dump1            sysdump    32      32      1    open/syncd
N/A         <---
   fslv00              jfs2       8       16      2    open/stale
/local/home


# ...and configure dump device correctly (as it was before un-
mirroring "rootvg")

sysdumpdev -l
   primary              /dev/lv_dump1
   secondary            /dev/sysdumpnull     <---
   copy directory       /var/adm/ras
   forced copy flag     TRUE
   always allow dump    FALSE
   dump compression     ON


sysdumpdev -s /dev/lv_dump2
   primary              /dev/lv_dump1
   secondary            /dev/lv_dump2        <---
   copy directory       /var/adm/ras
   forced copy flag     TRUE
   always allow dump    FALSE
   dump compression     ON



# Check list of boot devices and add "hdisk1"

bootlist -m normal -o
   hdisk0 blv=hd5
   hdisk1

bosboot -ad hdisk1
   bosboot: Boot image is 44765 512 byte blocks.
```

```
bootlist -m normal -o
   hdisk0 blv=hd5
   hdisk1 blv=alt_hd5     <--- It will remain like that until disk
data
                              is synchronized between disks in
"rootvg"



# And, finally, synchronize data on "rootvg" volumes

varyonvg rootvg

# Alternatively, we can use following command:

# syncvg -v rootvg



# Check status of Volume Group

lsvg rootvg
   VOLUME GROUP:       rootvg                   VG IDENTIFIER:
0039c23d00004c000000011a95b978c9
   VG STATE:           active                   PP SIZE:        128
megabyte(s)
   VG PERMISSION:      read/write               TOTAL PPs:      1092
(139776 megabytes)
   MAX LVs:            256                      FREE PPs:       54
(6912 megabytes)
   LVs:                13                       USED PPs:       1038
(132864 megabytes)
   OPEN LVs:           12                       QUORUM:         1
(Disabled)
   TOTAL PVs:          2                        VG DESCRIPTORS: 3
   STALE PVs:          1                        STALE PPs:      486
   ACTIVE PVs:         2                        AUTO ON:        yes
```

```
   MAX PPs per VG:     32512
   MAX PPs per PV:     1016                    MAX PVs:        32
   LTG size (Dynamic): 256 kilobyte(s)         AUTO SYNC:      no
   HOT SPARE:          no                      BB POLICY:
relocatable

# Synchronization progress can be monitored like this:

lsvg rootvg | grep -i stale
   STALE PVs:          1                       STALE PPs:      484

lsvg rootvg | grep -i stale
   STALE PVs:          1                       STALE PPs:      478



# Finally, check list of boot devices

bootlist -m normal -o
   hdisk0 blv=hd5
   hdisk1 blv=hd5
```

source: https://sites.google.com/site/syscookbook/aix/lvm-rootvg-unmirror-mirror